




ICTIIA 2024

PROGRAM BOOK

2024 2nd International Conference on Technology Innovation and Its Applications

**SYNERGIZING QUANTUM AND ARTIFICIAL INTELLIGENCE:
PIONEERING FUTURE INNOVATIONS IN TECHNOLOGY
AND ITS MULTIDISCIPLINARY APPLICATIONS**

September 12-13, 2024

Hybrid Conference

Lippo Plaza Medan 5th - 7th Floors
Jl. Imam Bonjol No. 6 Medan - 20112, North Sumatra, Indonesia

Support

Co-Host



PROGRAM BOOK

2024 2nd International Conference on Technology Innovation and Its Applications (ICTIIA)

September 12-13th, 2024



Organized by:



Technical Co-Sponsored by:



Supported by:



Supported by:



Co-hosts:



PROGRAM BOOK

2024 2nd International Conference on Technology Innovation and
Its Applications (ICTIIA)

"Synergizing Quantum and Artificial Intelligence:
Pioneering Future Innovations in Technology and Its
Multidisciplinary Applications"

September 12-13th, 2024 [Hybrid Conference]

Medan, North Sumatera, Indonesia

[This page intentionally left blank]



PREFACE



We welcome you to the 2024 2nd International Conference on Technology Innovation and Its Application (ICTIIA). The ICTIIA 2024 is organized by the Faculty of Information Technology, Universitas Pelita Harapan, Indonesia. This event will be held in hybrid mode on September 12-13th, 2024. The ICTIIA 2024 aims to bring together researchers, academics, professionals, and students to discuss and bring up current issues on Information Technology and related sciences.

The theme of ICTIIA 2024 is “*Synergizing Quantum and Artificial Intelligence: Pioneering Future Innovations in Technology and Its Multidisciplinary Applications*”. Through dissemination and discussion, this meeting may become a melting pot for researchers, students, and the public to create a new relationship or strengthen existing collaboration to produce innovative products. We encourage participants to explore the opportunity via this meeting to gain new knowledge and current research trends.

This program book provides information on the ICTIIA 2024 conference to help participants discover relevant directions for engaging with some scientific presentations and discussions. We hope you enjoy the conference of ICTIIA 2024, and may God bless you all.

Medan, September 12-13th, 2024
ICTIIA 2024 Committees

KEYNOTE SPEECH 1



Building Consumer Engagement in Live Streaming on Social Media: A Comparison of Facebook and Instagram Live

The rising popularity of live video streaming (LVS) on social media platforms has opened up opportunities for numerous businesses. One of the primary benefits of LVS is the ability to generate interactions between streamers and viewers, as well as between viewers and viewers in real-time, which can significantly increase consumer engagement. This study aims to explore how customer engagement is established through interactivity on LVS activities, with a focus on Facebook and Instagram Live. The study used a mixed-methods approach, consisting of in-depth interviews with experienced LVS viewers followed by an online survey. The qualitative findings revealed that two essential platform-related factors that drive interactions and engagement are aesthetic relevance and recommendation relevance, with the recommendation being more relevant for Facebook and aesthetic relevance being more typical for Instagram. The quantitative results support these findings and offer additional insights into the distinct mechanisms for generating engagement, while aesthetic relevance directly leads to interaction and engagement, recommendation relevance only generates engagement indirectly via interaction. Theoretically, this article contributes to the live streaming literature by exploring the platform-related influencers of interactivity and customer engagement and the mechanisms of how customer engagement is built via interactivity on different social media platforms.

Jengchung Victor Chen, Ph.D.

Distinguished Professor
Institute of International Management
National Cheng Kung University
1 University Road, Tainan City, Taiwan, 70101
Email: victor@mail.ncku.edu.tw
Phone: +886-6-2757575 ext. 53561



KEYNOTE SPEECH 2



Does AI have Increased Productivity of Software Product Line Engineering Development?

Software Product Line Engineering (SPLE) is a systematic approach aimed at fostering the efficient development of product families through the management and reuse of shared artifacts. By configuring components to meet specific requirements within a domain, SPLE enhances product development efficiency. In contexts such as cloud computing, where energy consumption is a critical concern, the configuration of software components significantly impacts both performance and energy efficiency. Research has focused on automating the decision-making processes for component selection, although significant challenges remain, particularly in complex environments like Kubernetes, where large-scale data transactions take place. These challenges include determining optimal component compositions to maximize efficiency. One prominent research involves the development of energy-aware SPLE models, which leverage machine learning (ML) techniques to predict the behavior of software components in both static and dynamic scenarios. Feature Models (FM) are widely utilized within SPLE to capture variability and commonality across product lines by organizing features in a hierarchical structure. Constructing FMs from extensive software repositories, such as Linux distributions, incurs substantial computational costs. Recent advancements in artificial intelligence (AI), particularly through the use of Large Language Models (LLMs), have improved the automation and accuracy of FM generation, streamlining the process and reducing associated costs. As LLMs become more integrated within SPLE frameworks, they offer significant potential to enhance scalability and optimize the configuration of energy-efficient product lines.

I Made Murwantara, Ph.D.

Graduate Informatics Department,
Universitas Pelita Harapan Jakarta, Indonesia
Email: made.murwantara@uph.edu



KEYNOTE SPEECH 3



Physics-Informed Machine Learning

In this presentation, we discuss the different opportunities to realize physics-informed machine learning models by the introduction of observational, learning, and inductive biases, following the terminology of Karniadakis. We illustrate the presentation with application in quantum physics for the search of quantum critical points in quantum many bodies with neural-network systems quantum states, and in classical physics for the regression of vector fields of dynamical Hamiltonian systems having additively separable Hamiltonian functions with multi-layer perceptrons. Both solutions leverage conjoined neural-network architectures. These architectures benefit from embedding physical laws directly into the learning process, enhancing predictive accuracy and efficiency. This physics-informed approach allows the models not only to fit the observed data but also to generalize effectively by leveraging the underlying physics, providing robust and interpretable predictions.

Stéphane Bressan

Associate Professor

Department of Computer Science

School of Computing (SoC)

National University of Singapore (NUS), Singapore

CONTENTS



	Page
Preface.....	v
Keynote Speech 1.....	vi
Keynote Speech 2.....	viii
Keynote Speech 3.....	viii
Contents.....	ix
Conference Information.....	1
Organizers & Committees.....	2
Program Schedule.....	4
Parallel Session Schedule.....	6
List of Abstracts.....	21



[This page intentionally left blank]



CONFERENCE INFORMATION



- Date : September 12th – 13th, 2024
- Venue : Lippo Plaza Medan 5th – 7th floors,
Jl. Imam Bonjol No.6, Medan 20112, North Sumatra,
Indonesia
- Organizer : Faculty of Information Technology
Universitas Pelita Harapan, Indonesia
- Secretariat : 3rd floor, B Building, Faculty of Information
Technology, Universitas Pelita Harapan,
Jl. M.H. Thamrin Boulevard 1100, Lippo Village
Tangerang 15811 – Indonesia
- Conference Website : <https://ictia.uph.edu>

ORGANIZER & COMMITTEES



Steering Committee:

Dr.Eng., Ir. Pujianto Yugopuspito, MSc., SMIEEE
I Made Murwantara, Ph.D.
Irene Astuti Lazarusli, S.Kom., M.T.
Arnold Aribowo, S.T., M.T.
Okky Putra Barus, S. Kom., M.M., M.TI.
Ferawaty, S.Kom., M.Kom.

General Chair:

Andree E. Widjaja, Ph.D. (Chair), UPH
Arnold Aribowo, S.T., M.T. (*Co-Chair*), UPH
Okky Putra Barus, S.Kom., M.M., M.TI. (*Co-Chair*), UPH

Technical Program Committee:

I Made Murwantara, Ph.D. (Chair), UPH
Dr. Louis Khrisna Putera Suryapranata (*Co-Chair*), UPH
Kusno Prasetya, Ph.D. (*Co-Chair*), UPH
Dr. Samuel Lukas, UPH
Dr. David Habsara Hareva, UPH
Aditya Rama Mitra, S.Si., M.T., UPH
Dion Krisnadi, S.Inf., S.Si., M.T.I., M.Act.Sc., UPH
Ferawaty, S.Kom., M.Kom., UPH

Publications Team:

Hendra Tjahyadi, Ph.D. (Chair), UPH
Robertus Hudi, S.Inf., M.Kom. (*Co-Chair*), UPH
Irene Astuti Lazarusli, S.Kom., M.T., UPH
Romindo, S.Kom., M.Kom., UPH

Publicity & Public Relations Team:

Dr. Benny Hardjono (Chair), UPH
Calandra A. Haryani, S.SI., S.E., M.T.I. (*Co-Chair*), UPH
Hery, S.Kom., M.MSI., UPH
Jefri Junifer Pangaribuan, S.Kom., M.T.I., UPH
Yudhistira A. Pratama, S.Kom., M.Kom., UPH
Ade Maulana, S.Kom., M.T.I., UPH

Registration Committee and Secretariat:

Riswan Efendi Tarigan, S.T., M.Kom. (Chair), UPH
Feliks Victor Parningotan Samosir, S.Pd., M.Kom. (*Co-Chair*), UPH
Mastiur Nainggolan, S.E., M.Pd., UPH
Richon Purba, S.Kom., UPH

Finance, Treasurer and Admin Team:

Dr.Eng., Ir. Pujianto Yugopuspito, MSc., SMIEEE (Chair), UPH
Ivonne Rezkawati Soutan, S.KM. (*Co-Chair*), UPH
Sonya Octavianti, S.Si., UPH

Scientific Committee:

Prof. Jengchung (Victor) Chen, National Cheng Kung University, Taiwan
Prof. Stéphane Bressan, National University of Singapore, Singapore
Prof. Suprateek Sarker, University of Virginia, USA
Prof. David C. Yen, Texas Southern University, USA
Prof. Binshan Lin, Louisiana State University Shreveport, USA
Prof. Wui-Yuin Hwang, National Dong Hwa University, Taiwan
Prof. Patrick Sekgoka, University of Pretoria, South Africa
Prof. Haryadi S. Gunawi, University of Chicago, USA
Prof. Ali Mohammad Hassan Louati, Prince Sattam Bin Abdulaziz University, Saudi Arabia
Prof. Shih-Chih Chen, National Kaohsiung University of Science and Technology, Taiwan
Prof. Don Jyh-Fu Jeng, National Chengchi University, Taiwan
Prof. Erik Paolo Capistrano, University of The Philippines, Diliman, Philippines
Prof. H. Sarjon Defit, UPI YPTK Padang, Indonesia
Prof. Untung Rahardja, Universitas Raharja, Indonesia
Prof. I Gede Pasek Suta Wijaya, Universitas Mataram, Indonesia
Prof. R. Rizal Isnanto, Universitas Diponegoro, Indonesia
Prof. Dr. Petrus Mursanto, Universitas Indonesia, Indonesia
Prof. Dr. I Ketut Eddy Purnama, Institut Teknologi Sepuluh November, Indonesia
Quang-An Ha, Ph.D., University of Economics Ho Chi Minh City, Vietnam
Timothy McBush Hiele, Ph.D., RMIT University, Vietnam
Daniela Onofrejovala, Ph.D., Technical University of Kosice, Slovakia
Lyuba Alboul, Ph.D., Sheffield Hallam University, UK
Rahmadi Trimananda, Ph.D., University of California Irvine, USA
Husni Teja Sukmana, Ph.D., UIN Syarif Hidayatullah Jakarta, Indonesia
Taqwa Hariguna, Ph.D., Universitas Amikom Purwokerto, Indonesia
Satria Fadil Persada, Ph.D., Binus University Malang, Indonesia
Abba Suganda Girsang, Ph.D., Binus University Jakarta, Indonesia
Dr. Athapol Ruangkanjanases, Chulalongkorn University, Thailand
Dr. Ferdian Jovan, University of Bristol, United Kingdom
Dr. Arnold Reynaldi, Kirby Institute, University of New South Wales, Australia
Dr. Endrowednes Kuantama, Macquarie University, Australia
Dr. Charles Lim, Swiss German University, Indonesia
Dr. Yohannes Kurniawan, Binus University Jakarta, Indonesia
Dr. Sandy Kosasih, STMIK Pontianak, Indonesia
Dr. Adi S. Paramita, M.Kom. Universitas Ciputra, Indonesia
Kenny Wiratama, M.Math., Australia National University, Australia
Ir. Achmad Zuchriadi P., S.T., M.T., UPN Veteran Jakarta, Indonesia
Cut Fiarni, S.Si, M.T. Institut Teknologi Harapan Bangsa, Indonesia
Suryasari, S.Kom., M.T., Universitas Multimedia Nusantara, Indonesia
Ririn I. Desanti, S.Kom., M.Kom., Universitas Multimedia Nusantara, Indonesia



PROGRAM SCHEDULE

onsite

Thursday, September 12th, 2024

No	Time (WIB) [Jakarta Time, GMT +7]	Event/Activities					
1	08:00 – 09:00	Registration (Light Refreshments)					
2	09:00 – 09:50	Opening Ceremony (Led by MC, Prayer, National Anthem of Indonesia (“Indonesia Raya”), UPH hymn, Overview of Agenda, Rules and Regulations, Cultural Dance Performances)					
3	09:50 – 10:00	Opening and Welcoming Remarks	Speech by the Rector of UPH				
4	10:00 – 10:05		Remarks from the APTIKOM representative				
5	10:05 – 10:10		Remarks from the ADI representative				
6	10:10 – 10:15		Remarks from the Chairman of FTIK BKPTKI				
7	10:15 – 10:20		Remarks from the Director of Research College of Business and Technology UPH				
8	10:20 – 10:25	Brief Report by ICTIIA 2024 General Chair					
9	10:25 – 10:30	Introduction of Keynote Speakers by Moderator					
10	10:30 – 11:10	Keynote Speeches	Keynote Speaker 1: Distinguished Prof. Jengchung Victor Chen, Ph.D. [National Cheng Kung University (NCKU), Taiwan] <i>Presentation: 30 min, Q&A: 10 min.</i>				
11	11:10 – 11:50		Keynote Speaker 2: Associate Prof. I Made Murwantara, Ph.D. [Universitas Pelita Harapan, Indonesia] <i>Presentation: 30 min, Q&A: 10 min.</i>				
12	11:50 – 12:30		Keynote Speaker 3: Associate Prof. Stéphane Bressan, Ph.D. [National University Singapore (NUS), Singapore] <i>Presentation: 30 min, Q&A: 10 min.</i>				
13	12:30 – 12:45	Presentation of Certification to Speakers and Group Photo (Documentation with Speakers, Committee, and All Onsite Participants)					
14	12:45 – 14:00	Lunch Break (Including Prayer and Rest)					
15	14:00 – 16:00	Parallel Sessions					
		Break out R1 – Merdeka Room	Break out R2 – Toba Room	Break out R3 – Deli Room	Break out R4 – Samosir Room	Break out R5 – Maimun Room	Break out R6 – Karo Room
16	16:00 – 18:00	Refreshment Break and Free Time					
17	18:00 – 19:30	Gala Dinner and Networking Session					

Friday, September 13th, 2024

online

No	Time (WIB) [Jakarta Time, GMT +7]	Event/Activities
1	07:00 – 08:00	Technical Check and Preparation
2	08:00 – 11:00	Online Parallel Sessions in Breakout Rooms
3	11:00 – 11:15	Awards Announcement and Closing Ceremony

Parallel Session Schedule



Breakout R1 (Merdeka Room) – Control & Robotics, Information & Computer Technology 1

Date / Time : September 12th, 2024 / 14:00 – 15:45

Moderator : **Dr. Hapnes Toba (Universitas Kristen Maranatha)**

No	Paper ID	Title	Time
1	107	Machine Learning-based Application for Predicting Heart Disease Risk using CreateML	14:00
2	75	Enhancing Endless Runner Gameplay: Integrating Brainwave-Based Natural Interaction with Rule-Based Management System	14:15
3	119	IoT Gateway Design for Real Time QR-Code Display Device in Security Monitoring System	14:30
4	193	Comprehensive Monitoring of Asthma: Evaluating Vital Signs, Sleep Quality, Air Quality, and Psychological Factors	14:45
5	207	An Adaptive Electric Field Stereotaxis Method for Brain Surgical Navigation	15:00
6	288	Prototyping an IoT-Based Smart Controlled Poultry Farm System	15:15
7	40	System Design for Therapist Retention Analysis in an Online Mental Healthcare Application Based on MapReduce	15:30

Breakout R2 (Toba Room) – Information & Computer Technology 2

Date / Time : September 12th, 2024 / 14:00 – 15:30

Moderator : **Budi Susanto, S.Kom., M.T. (Universitas Kristen Duta Wakana)**

No	Paper ID	Title	Time
1	60	Modeling Indonesian Thesaurus on Simple Knowledge Organization System	14:00
2	62	Transforming Digital Identity through Smart Contract as Identity	14:15
3	88	Twitter Data Extraction for Food and Beverage Business Analytics	14:30
4	89	Data Preprocessing on Triage Data for Predicting ICU Transfer within 24 Hours	14:45
5	151	Assembly Line Balancing Optimization using Genetic Algorithm Method Compared to Heuristic Method	15:00
6	217	Blockchain-based Coal Mining Concession Production Monitoring System	15:15

onsite

onsite

Parallel Session Schedule



Breakout R3 (Deli Room) – Information & Computer Technology 3

Date / Time : September 12th, 2024 / 14:00 – 16:00

Moderator : **Henry Novianus Palit, Ph.D. (Universitas Kristen Petra)**

No	Paper ID	Title	Time
1	71	A Multi-Perspective Process Explorer Method to Identify Anomaly of An Education ERP	14:00
2	94	Identifying Suspicious Financial Transaction Using Machine Learning and Pythagorean Tree	14:15
3	216	Deciphering Key Features in Online Buying Session Prediction Using Logistic Regression and Naive Bayes	14:30
4	222	Fake News Classification Using SVM And Logistic Regression Methods	14:45
5	242	Deep Learning in Image Classification Using Modified ResNet50 and Texture Features for Lung Cancer Detection	15:00
6	284	Optimizing Walking Routes for Step Goals Using Knapsack Algorithm	15:15
7	286	Diversity Focused Content-Based Filtering Recommendation System	15:30
8	291	SparkFlow: A Simple Big Data Analysis Application over Apache Spark	15:45

Breakout R4 (Samosir Room) – Information & Computer Technology 4

Date / Time : September 12th, 2024 / 14:00 – 15:30

Moderator : **Oscar Karnalim, Ph.D. (Universitas Kristen Maranatha)**

No	Paper ID	Title	Time
1	5	Plagiarism on Mobile Programming Assessments: Automated Detection	14:00
2	6	The Use of Markerless Augmented Reality Flash Card for English Vocabulary Building	14:15
3	70	Enhancing Organizational Performance Through Strategic Knowledge Sharing: Insights and Models	14:30
4	215	Optimizing User Experience: Evaluation of Usability and Cognitive Walkthrough on Web DECART	14:45
5	231	CoRun: Application for Coaching in Indorunners Community	15:00
6	268	A Comprehensive Evaluation of the AR Budur Application: A TELOS Analysis	15:15

onsite

onsite

Parallel Session Schedule



Breakout R5 (Maimun Room) – Interdisciplinary

Date / Time : September 12th, 2024 / 14:00 – 15:45

Moderator : **Prof. Dr. Samuel Lukas (Universitas Pelita Harapan)**

No	Paper ID	Title	Time
1	12	Analysis of Closing Stock Price Predictions Energy Sector in Indonesia Using Convolutional Neural Network	14:00
2	150	Comparison of Clustering Results using K-Means, Gaussian Mixture Models Based on Seven Sectors of Country Electricity and Correlation with Gross National Income	14:15
3	165	Brute Force Algorithm for Job Shop Scheduling Problem	14:30
4	183	Stock Price Prediction on LQ45's Banking Sector Using Long-Short-Term Memory and Convolutional Neural Network	14:45
5	186	Gender Classification Based on Fingerprint Using Sobel Filter and Artificial Neural Network	15:00
6	210	American Sign Language Alphabet Recognition Using Convolutional Neural Network	15:15
7	238	Obesity Prediction: K-Nearest Neighbor vs. Support Vector Machine	15:30

Breakout R6 (Karo Room) – Information System, Information & Computer Technology, Interdisciplinary

Date / Time : September 12th, 2024 / 14:30 – 15:30

Moderator : **Andree E. Widjaja, Ph.D. (Universitas Pelita Harapan)**

No	Paper ID	Title	Time
1	146	Minimally Invasive Motor Function Rehabilitation through Digital Twin Technology: A Review	14:00
2	33	Can Pixel-based Approach Achieve Similar Performance to Area-based Approach in Crop Yield Forecasting using Sentinel-2 Imagery and Deep Neural Networks? A Probabilistic Analysis	14:15
3	20	Enhancement of Indonesian Language Learning Motivation Using Trivia Game	14:30
4	104	A Study of The Implementation of Paylater Feature for Customer Satisfaction Using the Servqual Method in Marketplace Applications in Indonesia	14:45
5	224	Diabetes Management through Mobile Applications: A Comprehensive Approach to Health Management	15:00
6	65	Enhancing Agricultural Pesticide Application through a Custom-Built Hexacopter Equipped with Advanced Control and Navigation Systems	15:15

on-site

online

7	27	Unlocking Nutritional Insights: Exploring Meal Analysis for Enhanced Dietary Choices with Multinomial Logistic Regression	15:30
8	283	Tracking and Predicting CO ₂ Emission Transportation in Toba Regency	15:45

Parallel Session Schedule



Breakout R1 (Room 1) – Control & Robotics, Information & Computer Technology 1

Date/Time : September 13th, 2024 / 08:00 – 10:45

Moderator : **Hendra Tjahyadi, Ph.D. (Universitas Pelita Harapan)**

No	Paper ID	Title	Time
1	77	Improving SVM Performance in Determining Cost and Kernel Parameter Values through Grid Search	08:00
2	78	Performance Improvement of Support Vector Machine With Firefly Algorithm for Public Complaints Classification	08:15
3	79	A Novel Deep Learning-Based Multi-Model Ensemble Approach for the Prediction of Non-Small Cell Lung Cancer (NSCLC) Metastasis via Integration of Multi-omics Data	08:30
4	101	Safety Helmet Detection Based on YOLOv7 With Super-Resolution Reconstruction	08:45
5	138	Public Perception of Autonomous and Shared Autonomous Vehicles: Case Study of Amman	09:00
6	142	Long Short-Term Memory (LSTM) Improvement Accuracy Using FastText and Glove for Batak - Indonesian Language Translator	09:15
7	3	Trajectory Analysis of Inter-Island Logistics Transportation for Aggregate Material Using Web-Based Information	09:30
8	4	A Review on Intelligent Character Recognition (ICR) Technology for the Learning Innovation	09:45
9	13	Deep Learning-Based Web Application for Flower Recognition and Status Monitoring	10:00
10	15	Enhancing Warehouse Inventory Management through IoT Tools for Monitoring Stock Items	10:15
11	16	Modeling Plagiarism Prevention in Scientific Publication Using Enhanced Blockchain	10:30

Parallel Session Schedule



Breakout R2 (Room 2) – Information & Computer Technology 2

Date/Time : September 13th, 2024 / 08:00 – 10:30

Moderator : **Dr. Benny Hardjono (Universitas Pelita Harapan)**

No	Paper ID	Title	Time
1	17	Usability Evaluation of Microsoft Teams Applications for Higher Education	08:00
2	18	GoEliTool Usability Level Evaluation	08:15
3	22	Bitcoin Cryptocurrency Price Prediction Using IFA-BiLSTM	08:30
4	23	Deep Learning Approach for Stunting Classification in Toddlers	08:45
5	26	Imputation Missing Stock Prices using Generative Adversarial Networks and Attention Mechanism	09:00
6	29	Deep Learning for Predicting Food Commodity Prices in Traditional Markets	09:15
7	37	Dangerous Objects Detection and Segmentation in X-ray Images of Passenger Goods using YOLOV8	09:30
8	51	Multi-class Oil Palm Trees Condition Detection from UAV Images using Faster R-CNN with EfficientNetV2	09:45
9	59	Automated Extraction of Microservice Architecture Using a Rule-Based Approach	10:00
10	61	A Deep Learning Approach for Word Segmentation in Javanese Letter Manuscript Transliteration	10:15

Parallel Session Schedule



Breakout R3 (Room 3) –Information & Computer Technology 3

Date/Time : September 13th, 2024 / 08:00 – 10:45

Moderator : Elizabeth Nathania, S.Kom, M.Sc, Ph.D (Universitas Ciputra)

No	Paper ID	Title	Time
1	67	Gamification Design for Temple Tourism Application	08.00
2	80	Word Segmentation Task for Southeast Asian Abugida Scripts: A Systematic Literature Review	08:15
3	81	Optimizing IT Governance and Project Management in Software Development through AI Integration and COBIT 2019 Framework	08:30
4	90	Tourist Route Recommender System Using Whale Optimization Algorithm (A Case Study of Yogyakarta)	08:45
5	102	Unlocking Customer Loyalty: A Study of User Experience in Tokopedia	09:00
6	103	Architecting Multisite Database Proxy using ProxySQL	09:15
7	110	Chatbot for Complex Questions in University Admission using Bidirectional Long-Short Term Memory and Convolutional Neural Network	09:30
8	112	Secured e-Voting System Leveraging Blockchain Technology	09:45
9	113	GIS-based Disaster Preparedness and Mitigation Applications: A Systematic Review on Methods, Features, and Visualization	10:00
10	115	Techniques for Handling Missing Values in Customers Electricity Data: A Systematic Literature Review	10:15

Online

Parallel Session Schedule



Breakout R4 (Room 4) –Information & Computer Technology 4

Date/Time : September 13th, 2024 / 08:00 – 10:45

Moderator : **Robertus Hudi, S.Inf., M.Kom. (Universitas Pelita Harapan)**

No	Paper ID	Title	Time
1	130	American Sign Language to Text Translation using Transformer and Seq2Seq with LSTM	08:00
2	133	Evaluating the Efficacy of Sentinel-2B and Landsat 8 OLI Satellite Imagery for Accurate Mangrove Mapping in Bengkulu City, Indonesia	08:15
3	137	Connected Automated Vehicles Entry Capacity on Roundabouts- Case Study Hungary	08:30
4	143	The Influence of Sales Promotion, Attractiveness of Internet Advertising, and App Quality Features on Impulse Buying Decisions for Batik Fashion Products At Tiktok Shop	08:45
5	158	Detection of Cyberbullying Incidents on the X Social Network	09:00
6	159	Application of Used Car Price Predictor in Indonesia Along with Machine Learning Model Comparison and SMOTE	09:15
7	160	Performance Analysis of Regression Models on Predicting Movie Ratings	09:30
8	170	Movie Success Prediction Using Machine Learning Models	09:45
9	171	Fake Job Vacancy Detection Using Ensemble Voting Classifier	10:00
10	172	The Mediating Effect of Digital Payment Tools in the Relationship Between Digitalization and Use of Technology to Increase Sales on MSMEs	10:15
11	173	Region-Based People Counting with Embedded System in Smart Building Environment	10:30

online

Parallel Session Schedule



Breakout R5 (Room 5) –Information & Computer Technology 5

Date/Time : September 13th, 2024 / 08.00 – 10:30

Moderator : Teguh Indra Bayu, Ph.D. (Universitas Kristen Satya Wacana)

No	Paper ID	Title	Time
1	180	Systematic Literature Review: Disease Classification Modeling Using Deep Learning Algorithms	08:00
2	187	Exploring The Impact of Social Media Adoption to Small Medium Enterprises (SMEs) Performance	08:15
3	188	Exploring the Nexus of Website Security and Design for Superior Service Quality, Customer Satisfaction, and Loyalty	08:30
4	200	Node-Based Mapping for Augmented Reality Indoor Navigation	08:45
5	211	Rice Disease Detection and Classification Using Mask R-CNN and DenseNet	09:00
6	248	The Effect of Mobile Service Quality Dimensions in Food and Beverage Mobile Applications on Customer e-Satisfaction in Indonesia	09:15
7	264	Forecasting the stock price of Bank Central Asia using Singular Spectrum Analysis based model	09:30
8	272	AI-Powered Badminton Shot Classification	09:45
9	276	Comparison Research: YOLO (You Only Look Once) Model for Indonesian Sign Language Detection Reducing Communication Inequalities	10:00
10	298	Blockchain-Enabled Analytics in Banking Enhancing Risk Management for the Future of the Industry	10:15

online

Parallel Session Schedule



Breakout R6 (Room 6) –Information & Computer Technology 6, Information Systems 1

Date/Time : September 13th, 2024 / 08.00 – 10:45

Moderator : **Ir. Erwin Setiawan Panjaitan, M.M.S.I., Ph.D. (Universitas Mikroskil)**

No	Paper ID	Title	Time
1	301	The Role of User Behavior Patterns in Enhancing Fraud Detection in Online Banking: A Bibliometric Analysis	08:00
2	302	Exploring the User Satisfaction of Gamification in Promoting Savings Among Millennials	08:15
3	304	Big Data Analytics for Proactive Financial Fraud Detection and Prevention	08:30
4	307	Exploring User Experience and Challenges with Mobile Wallet Adoption in Emerging Markets	08:45
5	311	The Role of Financial Literacy and Fintech in Promoting Financial Inclusion	09:00
6	317	Evaluating the Effectiveness of Gamification in Mobile Banking to Increase Savings Rates	09:15
7	321	Application of Projection Mapping and RFID in Assembly Process	09:30
8	1	Econometric Insights Through Eviews: Decoding the Macroeconomic Factors In Shaping ASEAN-6 Exchange Rate Using Software Technology Application	09:45
9	7	Optimizing Library Services with User Segmentation: Impacts on Student Graduation Rates	10:00
10	10	Systematic Literature Review: On Measuring the Level of Emotional Experience Based on EEG Signals	10:15
11	11	Examining The Effect of Financial Literacy Variables In UTAUT2 Model On The Use Of E-wallet	10:30

Parallel Session Schedule



Breakout R7 (Room 7) –Information Systems 2

Date/Time : September 13th, 2024 / 08.00 – 10:30

Moderator : **Dr. Ronsen Purba, M.Sc. (Universitas Mikroskil)**

No	Paper ID	Title	Time
1	25	On Block Lattice architecture platform, an Extraordinary of Lattice cryptography	08:00
2	30	User Experience Design of Mobile Application for Tuberculosis Care and Prevention in Indonesia	08:15
3	31	Systematic Literature Review: Utilizing Machine Learning for Agricultural Purposes Through a Case Study on Chili Pest Type Identification	08:30
4	32	Business Closure Prediction Based on Users Rating and Review Using H2O	08:45
5	44	Novel Activity Recommendation System of Financial Balance Scorecard for COBIT 2019 Based on Company Strategy	09:00
6	45	Transformative Human Resources: Mapping Future Directions for Innovation in Information Technology and Multidisciplinary Applications	09:15
7	47	Comparative Study of Statistical, Machine Learning, and Deep Learning for Rice Retail Price Forecasting in West Java	09:30
8	49	A Comparative Analysis of Macroeconomic Indicators in Optimising Credit Risk Prediction	09:45
9	53	Process Mining for Evaluating Hospital Billing System Based On DSS01 Domain COBIT 2019 Framework	10:00
10	55	Integrating Class Imbalance Solutions into Fraud Detection Systems: A Systematic Literature Review	10:15

online

Parallel Session Schedule



Breakout R8 (Room 8) –Information Systems 3

Date/Time : September 13th, 2024 / 08:00 – 10:45

Moderator : **Rosni Lumbantoruan, Ph.D. (Institut Teknologi Del)**

No	Paper ID	Title	Time
1	57	Identifying Non-Conforming Process in Automobile Insurance Claims using Process Mining and COBIT 2019	08:00
2	58	A Recommendation System for Internal Business Processes of COBIT 2019 Using Graph Algorithm and Similarity Methods	08:15
3	69	Utilization of GC-MS in Determination of Electronic Nose Sensor Array for Classification of Gambung Green Tea Quality	08:30
4	106	The Role of Data Visualization in Improving the Sustainability of Smallholdings	08:45
5	109	Exploring Ethical Implications: Unraveling Factors Influencing Data Governance Awareness Behavior in Generative AI Chatbot	09:00
6	111	Enhancing High School Students Admission Process Through Web-Based Information System	09:15
7	116	UX Law Implementation at Sevima edLink from Design Science Research Perspective	09:30
8	120	Design and Development of a Guitar Learning Mobile Web for the Music Department of Rose of Sharon Church	09:45
9	121	Design and Development a Web-Based System for Recording Transactions of Contracted Service for Industrial Machine Repair at CV. Elmectro Mandiri	10:00
10	122	Analyzing The Effect of Ease of Use towards Continuous Use Intention and Satisfaction on E- Government Services in Indonesia	10:15

Parallel Session Schedule



Breakout R9 (Room 9) –Information Systems 4

Date/Time : September 13th, 2024 / 08:00 – 10:45

Moderator : **Dr. Louis Khrisna Putera Suryapranata (Universitas Pelita Harapan)**

No	Paper ID	Title	Time
1	125	Analysis of Customer Satisfaction of Using Kios-K Machine in Fast Food Services: Case of Indonesian	08:00
2	134	Consumer Trust and Brand Reputation: Driving Mechanical Keyboard Purchase Intention on Instagram	08:15
3	149	Analysis of The Impact of ChatGPT Utilization on The Levels of Laziness and Productivity	08:30
4	162	The Influence of Automotive Brand Awareness on Purchase Interest through Social Media Usage of TikTok Case Analytics	08:45
5	169	Reveal the Power of E-Filing and Transform Tax Reporting in Indonesia using UMEGA analysis	09:00
6	179	The Road to Digitalization: Exploring the Impact of Using Digital Payments and Marketing on Business Sustainability in MSMEs	09:15
7	181	Customer Segmentation Using Generated Coffee Export Transaction Data	09:30
8	189	Actor and Network Analysis: The Existence of Virtual Public Sphere on YouTube	09:45
9	190	Study on Object-Relational Mapping (ORM) Data Model Performance Effects in the Oil and Gas Industry	10:00
10	191	The Relationship between Social Media Marketing, Product Innovation, and Brand Equity with Mediated Customer Engagement in the Indonesian Packaged Tea Industry	10:15
11	218	Utilizing Augmented Reality to Improve Customers' Purchase Intention in Retail Furniture Applications in Indonesia	10:30

Parallel Session Schedule



Breakout R10 (Room 10) –Information Systems 5, Information & Computer Technology 7, Interdisciplinary 1

Date/Time : September 13th, 2024 / 08.00 – 10:15

Moderator : **Kusno Prasetya, Ph.D. (Universitas Pelita Harapan)**

No	Paper ID	Title	Time
1	273	Optimising Plastic Waste Management: YOLO-NAS-Based Robotic Sorting and Mobile App Prototypes for Adaptive Model Training	08:00
2	14	Comparison of Operations in Fuzzy Approximate Reasoning and Centroid of Membership Function	08:15
3	74	Data-Driven Exploration: Analyzing Triage Data's Role in Predicting Intensive Care Unit Transfers within 24 Hours	08:30
4	92	Analysis of AI's Impact on Purchase Intention on Social Media Platforms	08:45
5	185	Innovative Climate Solutions: Simulating the Future with En-ROADS	09:00
6	184	Streamlining Meatball Manufacturing: Lean Principles and Efficiency Improvements	09:15
7	199	Exploring Penetration Testing: A Comparative Analysis of Brute Force Directory Tools in Vulnerability Analysis Phase	09:30
8	148	Analysis Of Public Views of The Motor Vehicle Financing Services Information System	09:45
9	178	Comparing AI and Expert Opinion for Detecting Technological Trends in Indonesia's Transportation and Storage Industry	10:00

online

Parallel Session Schedule



Breakout R11 (Room 11) –Interdisciplinary 2

Date/Time : September 13th, 2024 / 08.00 – 10:30

Moderator : **Dhanny Rukmana Manday, S.T., M.T. (Universitas Prima Indonesia)**

No	Paper ID	Title	Time
1	202	Usability Evaluation Of Augmented Reality Indoor Navigation: A System Usability Scale Approach	08:00
2	203	Automatic Question-Answer Generation for Education on Indonesian Texts: A Review of Methodologies, Dataset and Evaluation Metrics	08:15
3	204	Feature Extraction Techniques for Patterned Images: A Systematic Literature Review	08:30
4	205	Enhancing Heart Rate Detection Accuracy Through the Kalman Filter Algorithm	08:45
5	206	Digital Marketing Benchmark Between Cafes in Asean: A Systematic Literature Review	09:00
6	208	Customer Segmentation Based on Recency, Frequency, Monetary, Variety and Duration (RFMVD)	09:15
7	209	Optimizing Sarcasm Detection through Various Input Methods in Text Data	09:30
8	213	The Prospect of Combining NFC Technology with Hologram Projection for Early Childhood Education	09:45
9	229	Early Identification of Potential Heart Abnormalities with Decision Tree Method	10:00
10	233	Application Of Decision Tree Algorithm In Classifying The Level Of Impulsivity In EEG Signals	10:15

online

Parallel Session Schedule



Breakout R12 (Room 12) –Interdisciplinary 3

Date/Time : September 13th, 2024 / 08:00 – 10:30

Moderator : Alexander Setiawan, M.T. (Universitas Kristen Petra)

No	Paper ID	Title	Time
1	237	Utilizing Fine-Tuning Resnet-18 For Acute Leukemia Diagnosis from Blood Smear Images	08:00
2	239	Prevalence, Devices Used, Reasons for Use, Trust, Barriers, and Challenges in Utilizing Generative AI among Tertiary Students	08:15
3	244	Development of RLE Scorer Web App for College of Nursing at Tobruk University	08:30
4	249	Information Technology, Organizational Culture, and Portfolio Management: A Measurement Model	08:45
5	254	Gold Price Administration and Prediction Application using Moving Average Method	09:00
6	255	Prediction of Land Use and Land Cover (LULC) Changes for 2030 Using Time Series Data and Random Forest Algorithm	09:15
7	258	Effects of Social Media Marketing Towards Online Purchase of Local Perfumes in Indonesia	09:30
8	261	HCI Approach To Increasing E-Learning Using A Combination of Cognitive Walkthrough And User Centered Design	09:45
9	263	Improving Credit Score Classification Using Long Short-Term Memory and Support Vector Machines Tuned with Whale Optimization Algorithm	10:00
10	266	Analyzing the Performance of Golang Web Frameworks Utilizing GORM in the Oil and Gas Industry	10:15

online



List of Abstracts

Paper ID	Authors	Page No
1	Raka Putri Agfial (Maranatha Christian University)*; Adiska Shabrina Sanfa (Maranatha Christian University); Benny Budiawan Tjandrasa (Maranatha Christian University)	32
3	Aji Suraji (Universitas Widyagama Malang)*; Syarifuddin Ishak (University of Brawijaya); Mohamad Cakrawala (University of Widyagama Malang); Muhammad Fatkhurrozi (Institut Teknologi Sumatera); Gholiqul Amroth Alawy (Jember National University); Rangga Pahlevi Putra (University of Widyagama Malang)	32
4	Sunaryo Winardi (Universitas Mikroskil)*; Gunawan (Universitas Mikroskil); Frederic Davidsen (Universitas Mikroskil); Farrell R. Fa (Universitas Mikroskil); Frans Mikael Sinaga (Universitas Mikroskil)	33
5	Oscar Karnalim (Maranatha Christian University)*; Erico Darmawan Handoyo (Maranatha Christian University); Meliana Christianti Johan (Maranatha Christian University); Daniel Jahja Surjawan (Maranatha Christian University)	33
6	Sulaeman Santoso (Maranatha Christian University)*; Daniel Jahja Surjawan (Maranatha Christian University)	34
7	Ihdi Syahputra Ritonga (Universitas Sumatera Utara)*; Ade Candra (Universitas Sumatera Utara); Mohammad Andri Budiman (Universitas Sumatera Utara)	34
10	Yudo Devianto (Satya Wacana Christian University)*; Adi Setiawan (Satya Wacana Christian University); Christine Dewi (Satya Wacana Christian University); Ade Iriani (Satya Wacana Christian University); Hindriyanto D Purnomo (Satya Wacana Christian University); Irwan Sembiring (Satya Wacana Christian University)	35
11	Bobby Garcia Tanura (Universitas Mikroskil)*; Erwin Setiawan Panjaitan (Universitas Mikroskil)	35
12	Jennifer Utomo (Universitas Pelita Harapan); Angeline Putri Wijaya (Universitas Pelita Harapan); Kenji Nicholas Adinata (Universitas Pelita Harapan); Karin Natania Huang (Universitas Pelita Harapan); Helena Margaretha (Universitas Pelita Harapan); Ferry V. Ferdinand (Universitas Pelita Harapan)*	36
13	Theophilus Chidalu Onyejiaku (Federal University of Technology, Owerri, Nigeria); Cosmas Ifeanyi Nwakanma (Kumoh National Institute of Technology, Gumi)*; Bernard Chukwuemeka Ekeoma (The University of Alabama, Tuscaloosa)	36
14	Takashi Mitsuishi (Nagano University)*	37
15	Sunaryo Winardi (Universitas Mikroskil)*; Apriyanto Halim (Universitas Mikroskil); Sunario Megawan (Universitas Mikroskil); Poi Wong Ng (Universitas Mikroskil); Arifin Arifin (Universitas Mikroskil)	37
16	Poi Wong Ng (Universitas Mikroskil); Carles Juliandy (Universitas Mikroskil)*; Darwin Darwin (Universitas Mikroskil)	38
17	Murdiaty Murdiaty (Universitas Mikroskil); Handoko Handoko (Universitas Mikroskil); Joosten M Joosten (Universitas Mikroskil)*	38
18	Joko Purwadi (Universitas Kristen Duta Wacana)*; Rosa Delima (Universitas Kristen Duta Wacana)	39

Paper ID	Authors	Page No
20	Louis Khrisna Putera Suryapranata (Universitas Pelita Harapan)*; Giovanni Ivander Gozali (Universitas Pelita Harapan)	39
22	Andre Pratama (Universitas Mikroskil)*	40
23	Wulan Sri Lestari (Universitas Mikroskil)*; Caroline Caroline (Universitas Mikroskil); Yuni Marlina Saragih (Universitas Mikroskil)	40
25	Loso Judijanto (Indonesia Palm Oil Strategic Studies (IPOSS)); Dwi Liestyowati (Fyra Institute); andiyan andiyan (Fyra Institute)*; Iin Arianti (Politeknik Negeri Pontianak); Galih Aripawira (Fyra Institute); Mohamad Aghust Kurniawan (Fyra Institute)	41
26	Agus Tri Haryono (Institut Teknologi Sepuluh Nopember)*; Riyanarto Sarno (Institut Teknologi Sepuluh Nopember); Ratih Anggraini (Institut Teknologi Sepuluh Nopember); Kelly Rossa Sungkono (Institut Teknologi Sepuluh Nopember)	41
27	Yohanssen Pratama (Institut Teknologi Del); Tegar Arifin Prasetyo (Institut Teknologi Del)*	42
29	Fajar Akhmad (Institut Teknologi Telkom Purwokerto); Sudianto Sudianto (Institut Teknologi Telkom Purwokerto)*; Dasril Aldo (Institut Teknologi Telkom Purwokerto)	42
30	Felix Felix (Universitas Mikroskil)*	43
31	Saruni Dwiasnati (Satya Wacana Christian University)*; Teguh Wahyono (UKSW); Budhi Kristianto (Satya Wacana Christian University, Salatiga); Wahyu Hari Kristiyanto (Satya Wacana Christian University, Salatiga)	43
32	Enjelin Enjelin (Universitas Mikroskil)*; Ronsen Purba (Universitas Mikroskil); Muhammad Fermi Pasha (Universitas Mikroskil)	44
33	Khadija Meghraoui (IAV Hassan II)*; Imane Sebari (IAV Hassan II); Saloua Bensiali (IAV Hassan II); KENZA Ait El Kadi (IAV Hassan II)	44
37	Timothy Kristanto (Universitas Ciputra Surabaya); Evan Tanuwijaya (Universitas Ciputra Surabaya)*	45
40	Iwan Santosa (Universitas Kristen Maranatha)*; Panji Yudasetya Wiwaha (Universitas Kristen Maranatha); Hapnes Toba (Maranatha Christian University); Andreas Widjaja (Maranatha Christian University); Giezka Veby Agustin (Universitas Kristen Maranatha); Katrine Katrine (Universitas Kristen Maranatha)	45
44	Lukman Arif Sanjani (Institut Teknologi Sepuluh Nopember)*; Ulina Shabrina (Institut Teknologi Sepuluh Nopember); William Phedra (Institut Teknologi Sepuluh Nopember); Riyanarto Sarno (Institut Teknologi Sepuluh Nopember); Kelly Rossa Sungkono (Institut Teknologi Sepuluh Nopember)	46
45	Natalia Maria Noya (Universitas Kristen Maranatha)*; Marcellia Susan (Universitas Kristen Maranatha)	46

Paper ID	Authors	Page No
47	I Nyoman Gde Artadana Mahaputra Wardhiana (Institut Teknologi Sepuluh Nopember)*; Muhammad Ghufron (Institut Teknologi Sepuluh Nopember); Riyanarto Sarno (Institut Teknologi Sepuluh Nopember); Agus Tri Haryono (Institut Teknologi Sepuluh Nopember); Shoffi Izza Sabilla (Institut Teknologi Sepuluh Nopember); Fadilatul Taufany (Institut Teknologi Sepuluh Nopember); Sholiq . (Institut Teknologi Sepuluh Nopember); Kelly Rossa Sungkono (Institut Teknologi Sepuluh Nopember)	47
49	Evelyn Sierra (Institut Teknologi Sepuluh Nopember)*; Erick Delenia (Institut Teknologi Sepuluh Nopember); Eric Lays (Institut Teknologi Sepuluh Nopember); Riyanarto Sarno (Institut Teknologi Sepuluh Nopember); Agus Tri Haryono (Institut Teknologi Sepuluh Nopember)	47
51	Arinal Haq (Institut Teknologi Sepuluh Nopember)*; Eko Sugeng Cahyadi (Institut Teknologi Sepuluh Nopember); Muhammad Shafhi Kasyfillah (Institut Teknologi Sepuluh Nopember); Riyanarto Sarno (Institut Teknologi Sepuluh Nopember); Agus Tri Haryono (Institut Teknologi Sepuluh Nopember)	48
53	Muhammad Yusuf (Institut Teknologi Sepuluh Nopember)*; Arinal Haq (Institut Teknologi Sepuluh Nopember); I Nyoman Gde Artadana Mahaputra Wardhiana (Institut Teknologi Sepuluh Nopember); Riyanarto Sarno (Institut Teknologi Sepuluh Nopember); Kelly Rossa Sungkono (Institut Teknologi Sepuluh Nopember)	48
55	Wowon Priatna (Universitas Kristen Satya Wacana)*; Hindriyanto D Purnomo (Satya Wacana Christian University); Irwan Sembiring (Universitas Kristen Satya Wacana); Theophilus Wellem (Universitas Kristen Satya Wacana)	49
57	Rizqy Ahsana A Putri (Institut Teknologi Sepuluh Nopember)*; Lauretha Devi Fajar Vantie (Institut Teknologi Sepuluh Nopember); Kelly Rossa Sungkono (Institut Teknologi Sepuluh Nopember); Riyanarto Sarno (Institut Teknologi Sepuluh Nopember)	49
58	I Gusti Lanang Agung Oka Cahyadi Pradipta (Institut Teknologi Sepuluh Nopember)*; Rizky Damara Ardy (Institut Teknologi Sepuluh Nopember); Riyanarto Sarno (Institut Teknologi Sepuluh Nopember); Kelly Rossa Sungkono (Institut Teknologi Sepuluh Nopember)	50
59	Rizqy Ahsana A Putri (Institut Teknologi Sepuluh Nopember)*; Muhammad Nevin (Institut Teknologi Sepuluh Nopember); Dwinanda Bagoes Ansori (Institut Teknologi Sepuluh Nopember); Abdullah Faqih Septiyanto (Institut Teknologi Sepuluh Nopember); Riyanarto Sarno (Institut Teknologi Sepuluh Nopember)	50
60	Budi Susanto (Universitas Kristen Duta Wacana)*; Michael Himawan Handoko (Universitas Kristen Duta Wacana); Gloria Virginia (Duta Wacana Christian University)	51
61	Muhammad Nevin (Institut Teknologi Sepuluh Nopember)*; I Kadek Agus Ariesta Putra (Institut Teknologi Sepuluh Nopember); Dwinanda Bagoes Ansori (Institut Teknologi Sepuluh Nopember); Riyanarto Sarno (Institut Teknologi Sepuluh Nopember); Agus Tri Haryono (Institut Teknologi Sepuluh Nopember)	51
62	Yustus Eko Oktian (Universitas Ciputra Surabaya)*; Kei Patrick Hilton (Universitas Ciputra Surabaya); Christian Christian (Universitas Ciputra Surabaya)	52
65	Albert Sagala (Institut Teknologi Del)*; Petrus Sinaga (Institut Teknologi Del); Irfan Manik (Institut Teknologi Del); Sandro Siagian (Institut Teknologi Del)	52

Paper ID	Authors	Page No
67	Yurri Wagiu (Universitas Atma Jaya Yogyakarta); Andi W. R. Emanuel (Universitas Atma Jaya Yogyakarta)*; Pranowo Pranowo (Universitas Atma Jaya Yogyakarta)	53
69	Rini Handayani (Telkom University)*; Riyanarto Sarno (Institut Teknologi Sepuluh Nopember); Dedy Rahman Wijaya (Telkom University); Kelly Rossa Sungkono (Institut Teknologi Sepuluh Nopember); Daniel Yeri Kristiyanto (Institut Teknologi Sepuluh Nopember)	53
70	Riswan E Tarigan (University of Pelita Harapan)*; Calandra Haryani (Universitas Pelita Harapan); Andree E Widjaja (Universitas Pelita Harapan)	54
71	I Made Murwantara (Universitas Pelita Harapan)*; Kristina Wulandari (Universitas Pelita Harapan)	54
74	Andrian R Crispin (Universitas Sumatera Utara)*; Muhammad Atqa Adzkia Zaldi (Universitas Sumatera Utara); Victor Hulu (Universitas Prima Indonesia); Abdi Dharma (Universitas Prima Indonesia)	55
75	Matahari Bhakti Nendya (Universitas Kristen Duta Wacana)*; Lailatul Husniah (Universitas Muhammadiyah Malang); Hardianto Wibowo (Universitas Muhammadiyah Malang); Syahri Mu'min (Universitas Nahdlatul Ulama Sidoarjo); I Kadek Dendy Senapartha (Universitas Kristen Duta Wacana)	55
77	Visca Sylvia (Universitas Sumatera Utara)*; Maya Silvi Lydia (Universitas Sumatera Utara); Benny Benyamin Nasution (Politeknik Negeri Medan)	56
78	Alfi Rahman (Universitas Sumatera Utara); Elviawaty M Zamzami (Universitas Sumatera Utara)*; Sawaluddin Sawaluddin (Universitas Sumatera Utara)	56
79	Akshay Karthik (Hamilton High School)*; Michael J Donovan (Arizona State University)	57
80	Baskoro Adi Wicaksono (Universitas Gadjah Mada)*; Bimo Sunarfri Hantono (Universitas Gadjah Mada); Teguh Bharata Adji (Universitas Gadjah Mada)	57
81	Andy Mohammad Teguh (Institut Teknologi Sepuluh Nopember)*; Joko Slamet (Institut Teknologi Sepuluh Nopember); Hartono Saputro (Institut Teknologi Sepuluh Nopember); Kelly Rossa Sungkono (Institut Teknologi Sepuluh Nopember); Riyanarto Sarno (Institut Teknologi Sepuluh Nopember)	58
84	Ainun ARF Rizkyani Fadillah (Universitas Pembangunan Nasional Veteran Jawa Timur)*	58
88	Muhammad Atqa Adzkia Zaldi (Universitas Sumatera Utara)*; Opim Salim Sitompul (Universitas Sumatera Utara); Erna Budhiarti Nababan (Universitas Sumatera Utara); Andrian R Crispin (Universitas Sumatera Utara)	59
89	Andrian R Crispin (Universitas Sumatera Utara)*; Ade Candra (Universitas Sumatera Utara); Opim Salim Sitompul (Universitas Sumatera Utara)	59
90	Vivi Fitriani (Telkom University); Z. K. A. Baizal (Telkom University)*	60
92	Cristanto Sidharta (Bina Nusantara)*; Nathaniel Ezra Ardyana Putra (Binus University); Jonathan F Chandra (Binus); Marisa Karsen (Bina Nusantara University)	60
94	I Made Murwantara (Universitas Pelita Harapan)*; Pricilia Fiesta Grieces Prasetio (Universitas Pelita Harapan)	61

Paper ID	Authors	Page No
101	Justin Yap (Universitas Ciputra)*; Trianggoro Wiradinata (Universitas Ciputra)	61
102	Naomi Natania Magdalena (Bina Nusantara University); Elfindah Princes (Bina Nusantara University); Desman Hidayat (Bina Nusantara University)*	62
103	Jefri Abdurrozak Ismail (PT. Data Sinergitama Jaya Tbk)*	62
104	Hery FIK (Universitas Pelita Harapan)*; Andree E Widjaja (Universitas Pelita Harapan); Calandra Haryani (Universitas Pelita Harapan); Riswan E Tarigan (Universitas Pelita Harapan)	63
106	Ahmad R Maulana (Universitas Sumatera Utara)*; Ade Candra (Universitas Sumatera Utara); Amalia Amalia (Universitas Sumatera Utara)	63
107	Theresia Ratih Dewi Saputri (Universitas Ciputra Surabaya)*; Edwin Kurniawan (Universitas Ciputra Surabaya)	64
109	Roger Amendi (Bina Nusantara University)*; Erwin Halim (Bina Nusantara University); Hendry Hartono (Bina Nusantara University)	64
110	Djoni Haryadi Setiabudi (Petra Christian University)*; Gregorius Budhi (Petra Christian University); Alfons Sampurno (Petra Christian University)	65
111	Michael Chandra (Universitas Ciputra Surabaya); Stephanus Eko Wahyudi (Universitas Ciputra Surabaya)*	65
112	Elizabeth Nathania Witanto (Universitas Ciputra Surabaya)*	66
113	Aditya Bimo Pitandoyo (Gadjah Mada University)*; Lukito Edi Nugroho (Gadjah Mada University); Bimo Sunarfri Hantono (Gadjah Mada University)	66
115	Mahda Dina Alam Rusbandi (Gadjah Mada University)*; Silmi Fauziati (Gadjah Mada University); Guntur Dharma Putra (Gadjah Mada University)	67
116	Indri S Rozas (UIN Sunan Ampel Surabaya)*; Aris Tjahyanto (Institut Teknologi Sepuluh Nopember Surabaya)	67
119	Laurentius Kuncoro Probo Saputra (Universitas Kristen Duta Wacana)*; Restyandito Restyandito (Universitas Kristen Duta Wacana); Willy Sudiarto Raharjo (Universitas Kristen Duta Wacana); Anthonius Adi Nugroho (Universitas Kristen Duta Wacana); Samuel Ricky Saputro (Universitas Kristen Duta Wacana); Bryan Rama Putra (Universitas Kristen Duta Wacana)	68
120	Nico Prasetyo (Universitas Ciputra); Kartika Gianina Tileng (Universitas Ciputra)*	68
121	Pravangasta Wahyudi (Universitas Ciputra Surabaya); Rinabi Tanamal (Universitas Ciputra Surabaya)*	69
122	Erwin Halim (Bina Nusantara University)*; Decwind Skylar Susanto (Bina Nusantara); Annisa Putrian Zahri (Bina Nusantara); Willy Candra (Bina Nusantara)	69
125	Erwin Halim (Bina Nusantara University)*; Michael Jonathan (Bina Nusantara University); archibald kribiantoro (Bina Nusantara University); christian johanes (Bina Nusantara University)	70
130	Gregorius Guntur Sunardi Putra (Institut Teknologi Sepuluh November)*; Adifa Widyadhani Chanda AW D'Layla (Sepuluh Nopember Institute Technology); Dimas Wahono (Institut Teknologi Sepuluh November); Riyanarto Sarno (Institut Teknologi Sepuluh Nopember); Agus Tri Haryono (Institut Teknologi Sepuluh Nopember)	70

Paper ID	Authors	Page No
133	Ayub Sugara (University Of Bengkulu); C Hanami (University Of Bengkulu); A H Lukman (University Of Bengkulu); Aninda Wisaksanti Rudiastuti (Badan Riset Dan Inovasi Nasional);*; Zamdial Zamdial (University Of Bengkulu); Bakhtiar Bakhtiar (University Of Bengkulu); Ari Anggoro (University Of Bengkulu); R Zuhendri (Lestari Alam Laut Untuk Negeri (LATUN)); R T Utami (Prof. Dr. Hazairin, SH University)	71
134	Hanif Akbar Ramadhan (Bina Nusantara University); Elfindah Princes (Bina Nusantara University); Desman Hidayat (Bina Nusantara University)*	71
137	Haitham A. Al Hasanat (Khawarizmi University Technical College: KUTC)*; Omar Alharasees (Budapest University Of Technology And Economics); Dania Alothman (Khawarizmi University Technical College: KUTC)	72
138	Omar Alharasees (Budapest University Of Technology And Economics);*; Haitham A. Al Hasanat (Khawarizmi University Technical College: KUTC); Dania Alothman (Khawarizmi University Technical College: KUTC)	72
142	Atikah Rahayu Mandasari (Universitas Sumatera Utara)*; Erna Budhiarti Nababan (Universitas Sumatera Utara); Herman Mawengkang (Universitas Sumatera Utara)	73
143	Fadilla Kardika Putri (Binus Online Learning); Mochammad Rizki Pratama (Binus Online Learning); Muhammad Raihan Rafi Al Azharr (Binus Online Learning); Yuniarty Yuniarty (Binus Online Learning)*; Ferry Hartono (E-Commerce Industry)	73
146	Brain Harlan (Universitas Pelita Harapan); Hendra Tjahyadi (Universitas Pelita Harapan)*	74
148	Ikrar Adinata Arin (Binus University)*; Bryan Bryan (Bina Nusantara); James Michael Wibawa (Bina Nusantara University)	74
149	Ikrar Adinata Arin (BINUS University)*; Arsyil Farkhan (BINUS University); Fahmi Muhamad (BINUS University); Fairuz Thahirah Anjani (BINUS University)	75
150	Samuel Lukas (Uph)*; Regina Maureen Suryaputri (Universitas Pelita Harapan); Petrus Widjaja (Universitas Pelita Harapan)	75
151	Christopher Nata (Universitas Pelita Harapan)*; Nathaniel Frederick (Universitas Pelita Harapan); Priskila C Rahayu (Uph)	76
158	Azka Dhafin Elhan (Bina Nusantara University)*; Deo Chuanito (Bina Nusantara University); Henry Lucky (Bina Nusantara University); Derwin Suhartono (Bina Nusantara University)	76
159	Rafael S. Wibowo (Bina Nusantara University)*; Alvino Vallian (Bina Nusantara University); Henry Lucky (Bina Nusantara University); Derwin Suhartono (Bina Nusantara University)	77
160	Ignatius Kennard (Bina Nusantara Universtiy)*; Hansel Hartono (Bina Nusnataru University); Henry Lucky (Bina Nusantara University); Derwin Suhartono (Bina Nusantara University)	77
162	Farabi Muhammad Alghifari (Bina Nusantara University)*; Rido Sarwono (Bina Nusantara)	78
165	Samuel Lukas (UPH)*; Aditya R Mitra (UPH)	78
169	Levana Dhia Prawati (Bina Nusantara University); Mahda Karina (Bina Nusantara University)*; Graciella Cherrysca Addy Putri (PT. BCA, Tbk.); Ismi Fathia Rachmi (Bina Nusantara University)	79

Paper ID	Authors	Page No
170	Michael Kristianto (Bina Nusantara University); Deastri Anggie Shanovera (Bina Nusantara University); Janette Trijono (Bina Nusantara University); Ivan Sebastian Edbert (Bina Nusantara University)*; Derwin Suhartono (Bina Nusantara University)	79
171	Torian Yaphet (Bina Nusantara University); Made Adhiaksena Wikrama Putra (Bina Nusantara University); Vicensia Charitas Avianny (Bina Nusantara University); Ivan Sebastian Edbert (Bina Nusantara University)*; Derwin Suhartono (Bina Nusantara University)	80
172	Danang Prihandoko (Bina Nusantara University)*; M Hamsal (Bina Nusantara University); Arta M Sundjaja (Bina Nusantara University); Willy Gunadi (Binus University)	80
173	Raden Mas Benediktus Suryo Wicaksono (Universitas Gadjah Mada)*; I Wayan Mustika (Universitas Gadjah Mada); Selo Sulistyio (Universitas Gadjah Mada)	81
178	Nopriadi Saputra (Bina Nusantara University)*; Thedy Karuna Ernesto (Bina Nusantara University); Salma Indah Pangesti Pangesti (Bina Nusantara University); Natalia Natalia (Bina Nusantara University); Faustina Nethania (Bina Nusantara University); Erika Indra (Bina Nusantara University)	81
179	Wahyu Setyobudi (Bina Nusantara University); Raja Natalius Dava (Bina Nusantara University)*	82
180	Wawan Gunawan (Universitas Kristen Satya Wacana)*; Hindriyanto D Purnomo (Satya Wacana Christian University); Christine Dewi (Satya Wacana Christian University); Ade Iriani (Satya Wacana Christian University); Irwan Sembiring (Satya Wacana Christian University)	82
181	Syarifah Chaira Zulfa (Universitas Sumatera Utara)*; Erna Budhiarti Nababan (Universitas Sumatera Utara); Mohammad Andri Budiman (Universitas Sumatera Utara)	83
182	Riza Nidhom Fahmi (Institut Teknologi Sepuluh Nopember (ITS))*; Ratih Nur Esti Anggraini (Institut Teknologi Sepuluh Nopember (ITS))	83
183	Shannen Surya Wibisono (Universitas Pelita Harapan); Karissa Leviana (Universitas Pelita Harapan); Timothy Sean Muliadiredja (Universitas Pelita Harapan); Helena Margaretha (Universitas Pelita Harapan); Ferry V Ferdinand (Universitas Pelita Harapan)*; Jennifer Utomo (Universitas Pelita Harapan)	84
184	Laurence Laurence (Universitas Pelita Harapan)*; Anthony Matthew (Universitas Pelita Harapan)	84
185	Laurence Laurence (Universitas Pelita Harapan)*; Agustina Christiani (Universitas Pelita Harapan); Christopher Alfredo (Universitas Pelita Harapan)	85
186	Sri sswn Suwarno (Duta Wacana Christian University)*; Lukas Chrisantyo (Duta Wacana Christian University)	85
187	Erwin Halim (Bina Nusantara University)*; Pandu Darmawan (BINUS University); Sudiana Sudiana (Bina Nusantara University); Yuliana Lisanti (Bina Nusantara University); Liana Sugandi (Bina Nusantara University); Placide Poba-Nzaou (University of Quebec in Montreal)	86
188	Erwin Halim (Bina Nusantara University)*; Decwind Skylar Susanto (Bina Nusantara); Sudiana Sudiana (Bina Nusantara University); Yuliana Lisanti (Bina Nusantara University); Jessicania Windari (Bina Nusantara University); Ai Ping Teoh (Universiti Sains Malaysia)	86

Paper ID	Authors	Page No
189	Frederik Gasa (BINUS University)*; Sidharta Sidharta (BINUS University); Bhekti Setyowibowo (BINUS University); Yongkie Angkawijaya (Binus University); Adellya Triagustin (BINUS University); Norfarizah Bakhir (Universiti Sains Malaysia)	87
190	Darren M Pangesa (Bina Nusantara University)*; Maria Seraphina Astriani (Bina Nusantara University); Ida BK Manuaba (Bina Nusantara University)	87
191	Indra Fata Raharja (BINUS University)*; Sarah Qonitah (BINUS University); dicky H syahchari (Bina Nusantara University)	88
193	David H Hareva (Universitas Pelita Harapan)*; Sherly Nathasya (Universitas Pelita Harapan)	88
199	Naufal Seira Muhammad Farras (Bina Nusantara University)*; Jason Loderick (Bina Nusantara University); Hanis Amalia Saputri (Bina Nusantara); Azani Cempaka AZ Sari (Binus University)	89
200	Felix Nathanael Tjahjono (Universitas Kristen Duta Wacana)*; Matahari Bhakti Nendya (Universitas Kristen Duta Wacana); I Kadek Dendy Senapartha (Universitas Kristen Duta Wacana); Tasya Setyo Harwati (Universitas Kristen Duta Wacana); Kenny Ivander Jovan (Universitas Kristen Duta Wacana)	89
202	Tasya Setyo Harwati (Universitas Kristen Duta Wacana)*; Matahari Bhakti Nendya (Universitas Kristen Duta Wacana); I Kadek Dendy Senapartha (Universitas Kristen Duta Wacana); Yuan Lukito (Universitas Kristen Duta Wacana); Felix Nathanael Tjahjono (Universitas Kristen Duta Wacana); Kenny Ivander Jovan (Universitas Kristen Duta Wacana)	90
203	St Tuhpatussania (Universitas Amikom Yogyakarta)*; Ema Utami (Universitas Amikom Yogyakarta); Kusri Kusri (STMIK AMIKOM Yogyakarta); Kumara Ari Yuana (Universitas Amikom Yogyakarta)	90
204	Wenti Ayu Wahyuni (Universitas Amikom Yogyakarta)*; Arief Setyanto (Universitas Amikom Yogyakarta); Ema Utami (Universitas Amikom Yogyakarta); Kusri Kusri (STMIK AMIKOM Yogyakarta)	91
205	Mangasa A. S. Manullang (Universitas Sumatera Utara)*; Poltak Sihombing (Universitas Sumatera Utara); Mahyuddin K. M. Nasution (Universitas Sumatera Utara)	91
206	Daffa Prakoso Hadi (Binus University)*; Rido Sarwono (Bina Nusantara)	92
207	Yuxin Fang (Chongqing University)*; Fan Yang (Chongqing University); Wei He (Chongqing University); Pengbo Wang (Chongqing University); Zhenyou Liu (Chongqing University); Wei Zhang (Chongqing University)	92
208	Agus Sundari (Universitas Sumatera Utara)*; Maya Silvi Lydia (Universitas Sumatera Utara); Muhammad Anggia Muchtar (Universitas Sumatera Utara)	93
209	Nicholaus Hendrik Jeremy (Bina Nusantara University)*; Matthew Alam (Bina Nusantara University); Justin Tristan Tirtawijaya (Bina Nusantara University); Jonathan Samuel Lumentut (Bina Nusantara University)	93
210	Jefri Junifer Pangaribuan (Universitas Pelita Harapan)*; Romindo Romindo (Universitas Pelita Harapan); Aditya R Mitra (UPH); Okky Putra Barus (Universitas Pelita Harapan); Sai Prashanth (Universitas Pelita Harapan)	94

Paper ID	Authors	Page No
211	Nicholaus Hendrik Jeremy (Bina Nusantara University)*; Nicole Minar Widjaja (Bina Nusantara University); Bryan Alvis Xavier Halim Chandra (Bina Nusantara University); Jonathan Samuel Lumentut (Bina Nusantara University)	94
212	Chelsea Venusha Laurent (Universitas Pelita Harapan); Helena Margaretha (Universitas Pelita Harapan); Ferry V. Ferdinand (Universitas Pelita Harapan)*	95
213	Maria Seraphina Astriani (Bina Nusantara University)*	95
215	Ranty Deviana Siahaan (Institut Teknologi Del)*; Arlinta Barus (Institut Teknologi Del); Paulina Panjaitan (Institut Teknologi Del); Vistar Rajagukguk (Institut Teknologi Del)	96
216	Arnold Aribowo (Universitas Pelita Harapan)*; I Made Murwantara (Universitas Pelita Harapan)	96
217	Mutiara Marpaung (Universitas Pelita Harapan)*; Pujiyanto Yugopuspito (Universitas Pelita Harapan)	97
218	Gwenda Tannia Suryasamudra (Bina Nusantara University); Nurul Farhanah Bt Mohd Idres (University Malaysia Pahang); Jolin Lee (Bina Nusantara University); Valentheresia Valentheresia (Bina Nusantara University); Gunawan Wang (Bina Nusantara University); Anderes Gui (Bina Nusantara University)*	97
222	Ferawaty Ferawaty (Universitas Pelita Harapan)*; Mangasa Manullang (Universitas Pelita Harapan); Richard Hanitio (Universitas Pelita Harapan); Mangasa A. S. Manullang (Universitas Sumatera Utara)	98
224	David H Hareva (Universitas Pelita Harapan)*; Vanessa Chriszella Rasubala (Universitas Pelita Harapan); Benny Hardjono (Universitas Pelita Harapan)	98
229	Mardi Turnip (Universitas Prima Indonesia)*; Imanuel Putra (Universitas Prima Indonesia); Desta Telaumbanua (Universitas Prima Indonesia); Albert Nicol (Universitas Prima Indonesia); Abdi Dharma (Universitas Prima Indonesia); Delima Sitanggang (Universitas Prima Indonesia)	99
231	Lily P Dewi (Petra Christian University)*	99
233	Nurima Nur Lumbantoruan (Universitas Prima Indonesia)*; Arico Sempana Ginting (Universitas Prima Indonesia); Ruth Marsaulina Simanjuntak (Universitas Prima Indonesia); Delima Sitanggang (Universitas Prima Indonesia); Yennimar Yennimar (Universitas Prima Indonesia); Dhanny Rukmana Manday (Universitas Prima Indonesia); Anita Christine Sembiring (Universitas Prima Indonesia)	100
237	Triandes Sinaga (Universitas Sumatera Utara)*; Ade Candra (Universitas Sumatera Utara); Bedy Purnama (Telkom University)	100
238	Okky Putra Barus (Universitas Pelita Harapan)*; Felix Billie (Universitas Pelita Harapan); Romindo Romindo (Universitas Pelita Harapan); Jefri Junifer Pangaribuan (Universitas Pelita Harapan); Ade Maulana (Universitas Pelita Harapan)	101
239	John Paul P. Miranda (Don Honorio Ventura State University)*; Joseph Alexander Bansil (Don Honorio Ventura State University); Emerson Fernando (Don Honorio Ventura State University); Almer Gamboa (Don Honorio Ventura State University); Hilene Hernandez (Don Honorio Ventura State University); Myka Cruz (Don Honorio Ventura State University); Roque Francis Dianelo (Don Honorio Ventura State University); Dina Gonzales (Don Honorio Ventura State University); Elmer Penecilla (Don Honorio Ventura State University)	101

Paper ID	Authors	Page No
242	Evander Banjarnahor (Universitas Pelita Harapan)*; Jefri Junifer Pangaribuan (Universitas Pelita Harapan); Okky Putra Barus (Universitas Pelita Harapan); Romindo Romindo (Universitas Pelita Harapan)	102
244	James Neil B Mendoza (Tobruk University)*; Dorothy Buhat-Mendoza (Tobruk University); Jocelyn Ampaguey (Tobruk University)	102
248	Ricky S Satria (Bina Nusantara University)*; Jonathan Timothy Christian (Bina Nusantara University); Kelven Jaya Kristanto (Bina Nusantara University); Tanty Oktavia (Bina Nusantara University)	103
249	Faros Zaim (Sepuluh Nopember Institute of Technology)*; Apol Subriadi (Sepuluh Nopember Institute of Technology)	103
254	Alexander Setiawan (Petra Christian University)*	104
255	Evta Indra (Universitas Prima Indonesia)*; Dheo Putranta Pandia (Universitas Prima Indonesia); Tengku Nabila (Universitas Prima Indonesia); Dennis Jusuf Ziegel (Universitas Prima Indonesia)	104
258	Lim Sanny (Bina Nusantara University)*	105
261	Baenil Huda (Universitas Kristen Satya Wacana)*; Baenil Huda (Buana Perjuangan University of Karawang); kristoko dwi hartomo (satya wacana christian university); Yessica Nataliani (Satya Wacana Christian University); Irwan Sembiring (Satya Wacana Christian University)	105
263	Sebastianus Radhya (Bina Nusantara University); Yeremia M Toemali (Universitas Bina Nusantara); Francesco Jovan (Universitas Bina Nusantara); Abram S Prabowo (BINUS University)*	106
264	Etik Zukhronah (Universitas Sebelas Maret)*; Winita Sulandari (Universitas Sebelas Maret); Sri Subanti (Universitas Sebelas Maret); Isnandar Slamet (Department Statistics, Universitas Sebelas Maret, Surakarta, Indonesia); Sugiyanto Sugiyanto (Universitas Sebelas Maret); Irwan Susanto (Department of Statistics, Universitas Sebelas Maret)	106
266	Karsten E Lie (Bina Nusantara University)*; Maria Seraphina Astriani (Bina Nusantara University); Ida BK Manuaba (Bina Nusantara University)	107
268	Audrienne Gunawan (Bina Bangsa School Semarang)*; Felix Nathanael Tjahjono (Universitas Kristen Duta Wacana); Danny Sebastian (Universitas Kristen Duta Wacana); Restyandito Restyandito (Universitas Kristen Duta Wacana)	107
272	Michael A Salim (Sekolah Pelita Harapan Lippo Village (SPHLV))*; Winly Williamdy (Emmerich Education Research Center); Eden Steven (Emmerich Research Center)	108
273	Vihaan Jain (Sekolah Pelita Harapan LV)*; Aria Amadeus Salim (Universitas Kristen Krida Wacana); Eden Steven (Emmerich Research Center)	108
276	Brandon Steven (Bina Nusantara University); Calista Vannia Nathalie (Bina Nusantara University); Christoper Gerry Johannes (Bina Nusantara University); Puti Andam Suri (Universitas Bina Nusantara)*	109
283	Humasak Tommy Argo Simanjuntak (Institut Teknologi Del)*; Esphi Hutabarat (Institut Teknologi Del); Sintia Silaen (Institut Teknologi Del); Agnes Marpaung (Institut Teknologi Del); Susi Purba (Institut Teknologi Del)	109

Paper ID	Authors	Page No
284	Susi Eva Maria Purba (Institut Teknologi Del)*; Sarah Rosdiana Tambunan (Institut Teknologi Del); Chandro Pardede (Institut Teknologi Del)	110
286	Chandro Pardede (Institut Teknologi Del); Parmonangan R. Togatorop (Institut Teknologi Del)*; Ary Aritonang (Institut Teknologi Del); Rosni Lumbantoruan (Institut Teknologi Del)	110
288	Indra Hartarto Tambunan (Institut Teknologi Del)*; Noel Riki Apryanto (Institut Teknologi Del)	111
291	Henry Novianus Palit (Petra Christian University)*; Andre Gunawan (Petra Christian University); Daniel Jeremia (Petra Christian University)	111
298	Rusdi Pratomo (University of Raharja); Marviola Hardini (University of Raharja); Dwi Julianingsih (University of Raharja)*; Dedeh Suprianti (University of Raharja); Qurotul Aini (University of Raharja)	112
301	Pita Silvia (University of Raharja); Qurotul Aini (University of Raharja); Efa Ayu Nabila (University of Raharja)*; Henderi Henderi (University of Raharja); Hardjanto Nusantoro (University of Raharja)	112
302	Ariya Jati Kusumo (University of Raharja); Qurotul Aini (Univesity of Raharja); Shofiyul Millah (Univesity of Raharja)*; Tuti Nurhaeni (University of Raharja); Lusyani Sunarya (Univesity of Raharja)	113
304	Yehezkeil Hasudungan (University of Raharja); Fitra Putri Oganda (University of Raharja); Maria Daeli (University of Raharja)*; Raihan Raihan (University of Raharja); Nesti Anggraini Santoso (University of Raharja)	113
307	Priandito Priandito (University of Raharja); Ninda Lutfiani (University of Raharja); Natasya Aprila Yusuf (University of Raharja)*; Thomas Sumarsan Goh (Universitas Methodist Indonesia); Muchlisina Madani (University of Raharja)	114
311	Tri Widiyatmoko (University of Raharja); Untung Rahardja (University of Raharja); Nanda Septiani (University of Raharja)*; Dewi Immaniar Desrianti (University of Raharja); Muhammad Faizal Fazri (University of Raharja)	114
317	Tubagus Wahyu Rafiuddin (University of Raharja); Ninda Lutfiani (University of Raharja); Agung Rizky (University of Raharja)*; Mulyati Mulyati (University of Raharja); Galih Putra Cesna (University of Raharja)	115
321	Novie Theresia Pasaribu (Universitas Kristen Maranatha)*	115

Paper ID 1

Authors:

Raka Putri Agfial (Maranatha Christian University)*;
Adiska Shabrina Sanfa (Maranatha Christian University);
Benny Budiawan Tjandrasa (Maranatha Christian University)

Title:

Econometric Insights through Eviews: Decoding the Macroeconomic Factors in Shaping Asean-6 Exchange Rate Using Software Technology Application

Abstract:

Exchange rates in ASEAN-6 play an impactful role in trade, investment, and regional economic growth. This study utilizes the EViews analysis tool to conduct an econometric analysis. The macroeconomic factors used include gross domestic product, inflation, interest rates, per capita income, and market returns. Test results with multivariable regression analysis show that gross domestic product, interest rates, and market returns have a negative and significant effect on exchange rates. Meanwhile, inflation and per capita income have a positive and significant effect on the exchange rate. The results of this study estimate that 91.51% of changes in exchange rates can be influenced by gross domestic product, inflation, interest rates, per capita income, and market returns. Meanwhile, 8.49% is influenced by other variables. The suggested implication is that ASEAN-6 countries should pay attention to macroeconomic factors that affect the exchange rate in the ASEAN-6 region.

Paper ID 3

Authors:

Aji Suraji (University of Widyagama Malang)*;
Syarifuddin Ishak (University of Tadulako);
Prabowo (Malang State University);
Muhammad Fatkhurrozi (Institut Teknologi Sumatera);
Gholiqul Amroth Alawy (Jember State University);
Rangga Pahlevi Putra (University of Widyagama Malang)

Title:

Trajectory Analysis of Inter-Island Logistics Transportation for Aggregate Material Using Web-Based Information

Abstract:

Transportation of material aggregates over long distances and between islands requires a long time by changing modes of transportation. Therefore, determining a material aggregate travel trajectory model using a web database is something that can help in logistics analysis. This study aims to create a web-based material aggregate transportation trajectory model. The data collection method involves extracting data with Google Maps which shows distance and time indications. Next, validation is carried out in the field with a direct survey at the location. The analytical method uses statistical methods to create modeling using a linear regression model approach and statistical tests using ANOVA. The results of the study show that the linear regression model is simple with an independent variable coefficient of 0.0306 and an R-square of 0.8649. Meanwhile, using the ANOVA test, it was stated that the modeling results were quite significant, and the model could be used to make predictions.

Paper ID 4

Authors:

Sunaryo Winardi (Universitas Mikroskil)*;
Gunawan - (Universitas Mikroskil);
Frans Mikael Sinaga (Universitas Mikroskil);
Farrell Rio Fa (Universitas Mikroskil);
Frederic Davidsen (Universitas Mikroskil)

Title:

A Review on Intelligent Character Recognition (ICR) Technology for the Learning Innovation

Abstract:

This research focuses on the importance of innovation in education, particularly in response to the significant changes brought about by technology in learning and teaching methodologies. The emergence of Information and Communication Technology (ICT) has revolutionized the educational landscape, offering opportunities for progress and transformation in the learning process. By integrating ICR, into educational contexts, we can enhance the quality of learning, improve educational accessibility, and boost efficiency. Literature review findings indicate that AI-driven ICR technology achieves over 80% accuracy, demonstrating its considerable potential for digitizing handwriting and streamlining administrative tasks in education.

Paper ID 5

Authors:

Oscar Karnalim (Maranatha Christian University)*;
Erico Darmawan Handoyo (Maranatha Christian University);
Meliana Christianti Johan (Maranatha Christian University);
Daniel Jahja Surjawan (Maranatha Christian University)

Title:

Plagiarism on Mobile Programming Assessments: Automated Detection

Abstract:

In programming education, programming ethics are maintained by educating students about the matter and penalize those who breach the regulations. There are a number of plagiarism detectors available for programming. However, none of them are focused on mobile programming assessments though mobile programming becomes more popular nowadays. This paper presents a plagiarism detector for such assessments, focusing on Dart and Flutter. The detector tokenize student submissions, generalize identifier names and constants, and compare the submissions in a pairwise manner with MinHash. Although our detector cannot deal with some plagiarism disguises (program statement replacement and logic change), it can result in no less than 85% top-K precision on most occasions. It is quite efficient since it can perform 2400 comparisons in three seconds. The processing time might be longer for more submissions with larger amount of code.

Paper ID 6

Authors:

Sulaeman Santoso (Maranatha Christian University)*;
Daniel Jahja Surjawan (Maranatha Christian University)

Title:

The Use of Markerless Augmented Reality Flash Card for English Vocabulary Building

Abstract:

As the world grows ever so small with the advancing technology, language mastery is one of the key factors for success in many fields. While learning language could occur in all stages of a human life, many studies show that learning language from a young age is faster and easier. The use of physical flashcards as tools for language learning has been common in many places. However, there are some limitations to physical flashcards as they can be damaged, lost, and have no inherent ability to record their usage so that it can be analyzed to enhance studies. This research proposed an augmented reality approach to flash card to learn basic English vocabulary in children. It is then shown that while the application did not speed up the learning process it does increase the interest of the children. This research then shows the limitation of using such an approach to learning language in children.

Paper ID 7

Authors:

Ihdi Syahputra Ritonga (Universitas Sumatera Utara)*;
Ade Candra (Universitas Sumatera Utara);
Mohammad Andri Budiman (Universitas Sumatera Utara)

Title:

Optimizing Library Services with User Segmentation: Impacts on Student Graduation Rates

Abstract:

This research aims to optimize library services by analyzing the correlation between user activities and student graduation levels using the K-Means clustering algorithm. By segmenting library users based on study duration, GPA, and loan levels, the study identifies patterns that link library engagement with academic success. The methodology includes data collection, preprocessing, and modeling, with datasets from the UIN Padangsidempuan Academic Information System (SIKAD). The analysis reveals three user clusters, each with distinct academic behaviors. These insights suggest that libraries can enhance student engagement and performance by tailoring services, such as developing specialized discussion services for research and optimizing digital library offerings.

Paper ID 10

Authors:

Yudo Devianto (Satya Wacana Christian University)*;
Adi Setiawan (Satya Wacana Christian University);
Christine Dewi (Satya Wacana Christian University);
Ade Iriani (Satya Wacana Christian University);
Hindriyanto D Purnomo (Satya Wacana Christian University);
Irwan Sembiring (Satya Wacana Christian University)

Title:

Systematic Literature Review: On Measuring the Level of Emotional Experience Based on EEG Signals

Abstract:

This research aims to produce a literature review using a structured approach, Systematic Literature Review (SLR), so that readers can easily understand the aim and objectives of this research article. It can also indicate research gaps that can be used to develop research questions. The article search and selection approach follows the PRISMA guidelines, considering established criteria. We can conduct further research by looking at the resulting mapping references; for this research, we opted to utilize the dataset SEED and GNN algorithm. The research we will carry out is to detect individual emotional and mental levels using the SEED dataset and using the Graph Neural Network (GNN) algorithm. Measuring the intensity of emotional experience is a popular research area; many have carried out such research with various algorithms and datasets generated from EEG signals.

Paper ID 11

Authors:

Bobby Garcia Tanura (Universitas Mikroskil)*;
Erwin Setiawan Panjaitan (Universitas Mikroskil)

Title:

Examining The Effect of Financial Literacy Variables in UTAUT2 Model on the Use of E-wallet

Abstract:

E-wallet is a technology designed for storing payment data, enabling users to conduct transactions conveniently through a smartphone. This ease of use can increase consumptive behavior, and one significant factor influencing consumptive behavior is financial literacy. Therefore, an examination is necessary to determine the acceptance of e-wallet in Medan. The objective of this research is to see if the financial literacy variable can be used to predict behavioral intentions related to adopting and using e-wallet technology. A survey was conducted involving 393 users, and processed using SEM through SmartPLS, this research introduces financial literacy variable into the UTAUT2 model, assessing its significance of the user's behavioral intentions to adopt e-wallet. The result shows that performance expectancy, habit, and financial literacy positively and significantly affect behavioral intentions, and both habit and behavioral intentions positively affect e-wallet use behavior in Medan.

Paper ID 12

Authors:

Jennifer Utomo (Universitas Pelita Harapan);
Angeline Putri Wijaya (Universitas Pelita Harapan);
Kenji Nicholas Adinata (Universitas Pelita Harapan);
Karin Natania Huang (Universitas Pelita Harapan);
Helena Margaretha (Universitas Pelita Harapan);
Ferry V. Ferdinand (Universitas Pelita Harapan)*

Title:

Analysis of Closing Stock Price Predictions Energy Sector in Indonesia Using Convolutional Neural Network

Abstract:

This study uses CNN with 20 and 100 window sizes to predict the closing price of Indonesia's five largest market capitalization energy sector stocks. It is chosen to investigate the effect of long and short-term window sizes on the model's accuracy. Furthermore, we apply different filters for three layers in CNN, such as 64, 128, 64 in the first model, 32, 64, 32 in the second model, and 8, 6, and 4 in the last model. This study aims to determine the impact of the number of filters on the model's accuracy and use the evaluation metrics to determine which model is better at predicting stock prices in Indonesia. The model's accuracy is analyzed using each stock's median, mean, and variance of the mean squared error. The results show an impact on the stock price prediction results with 20 and 100 window sizes, where 100 is better than 20.

Paper ID 13

Authors:

Theophilus Chidalu Onyejiaku (Federal University of Technology, Owerri, Nigeria);
Cosmas Ifeanyi Nwakanma (Kumoh National Institute of Technology, Gumi)*;
Bernard Chukwuemeka Ekeoma (The University of Alabama, Tuscaloosa)

Title:

Deep Learning-Based Web Application for Flower Recognition and Status Monitoring

Abstract:

This work presents a flower classification and status monitoring web application based on learning for diverse flower species. This classification holds immense importance for farmers as it provides valuable insights into plant species, facilitating informed decision-making for crop management, pollination strategies, and pest control, ultimately enhancing agricultural productivity and sustainability. The work adopted the DenseNet169-based Convolutional Neural Network model achieving an accuracy of 94% using the Adam optimizer. A custom data augmentation pipeline, incorporating various image transformations, is introduced to enhance the model's robustness. Furthermore, a key contribution of this research is the development of a user-friendly web application seamlessly integrating the trained model, allowing farmers to identify flower types within their fields and comprehend their agricultural significance.

Paper ID 14

Authors:

Takashi Mitsuishi (Nagano University)*

Title:

Comparison of Operations in Fuzzy Approximate Reasoning and Centroid of Membership Function

Abstract:

In this study, the considerations of defuzzified value of asymmetry triangular membership function using centroid method are described. The product operation, minimum operation and Lukasiewicz t-norm operation were compared in this paper. Several theorems about properties of the defuzzified values of asymmetry triangular membership function by centroid method are obtained.

Paper ID 15

Authors:

Sunaryo Winardi (Universitas Mikroskil)*;
Apriyanto Halim (Universitas Mikroskil);
Sunario Megawan (Universitas Mikroskil);
Poi Wong Ng (Universitas Mikroskil);
Arifin Arifin (Universitas Mikroskil)

Title:

Enhancing Warehouse Inventory Management through IoT Tools for Monitoring Stock Items

Abstract:

The increasing demand for personalized products and a global presence complicates inventory management, requiring accurate and timely stock information. To address this, businesses must leverage Internet of Things (IoT) solutions, which connect various electronic devices to the internet via advancements in cloud technology, sensor networks, and wireless communication. This research proposes a tailored IoT architecture for warehouse inventory checking processes, focusing on real-time tracking and visibility, cost reduction, enhanced security, improved inventory management, and increased supply chain speed. Implementing an IoT-based Warehouse Inventory Management system, designed with four layers (Physical, Gateway, Middleware, and Application), significantly improves operational efficiency and inventory tracking. While human involvement remains necessary, IoT solutions optimize inventory management and enhance overall efficiency.

Paper ID 16

Authors:

Poi Wong Ng (Universitas Mikroskil);
Carles Juliandy (Universitas Mikroskil)*;
Darwin Darwin (Universitas Mikroskil)

Title:

Modeling Plagiarism Prevention in Scientific Publication Using Enhanced Blockchain

Abstract:

The improvement in technology causes plagiarism to occur and causes losses for the original creator. Plagiarism easily occurs in many areas including research papers. From this problem, we proposed a model to not only detect but also prevent plagiarism by merging Blockchain technology, the Elliptic Curve Digital Signature Algorithm (ECDSA), and the Rabin-Karp algorithm. The proposed model was improved model by another researcher. Our model is separated into two parts, the front end will be used to detect similarity percentage and prevent plagiarism also the back end will be used to prevent plagiarism. The simulation result shows that the Rabin-Karp algorithm is robust enough to detect similarity percentages. The ECDSA algorithm ensures that the authorized can open the submission paper. Lastly, Blockchain technology prevents any change in the data that is stored inside the network. This research successfully introduced a more secure model in the research paper submissions.

Paper ID 17

Authors:

Murdiaty Murdiaty (Universitas Mikroskil);
Handoko Handoko (Universitas Mikroskil);
Joosten M Joosten (Universitas Mikroskil)*

Title:

Usability Evaluation of Microsoft Teams Applications for Higher Education

Abstract:

Interface design evaluation is part of human-computer interaction. The focus of this research is to carry out a heuristic evaluation on the interface design of an online learning application, namely Microsoft Teams, to determine the extent to which the application meets the usability concept of interface design. Microsoft Teams is an application that is the choice of many universities in Indonesia to provide online learning. Microsoft Teams can be accessed by students, course lecturers and Digital Learning Subdivision units (the team that manages e-learning). This research uses a heuristic evaluation method which includes several usability principles such as Jacob Nielsen's ten principles of usability. To facilitate evaluation of the user interface, this research combines heuristic checklists and severity ratings. Severity ratings are associated with problems that arise and have varying levels of seriousness.

Paper ID 18

Authors:

Joko Purwadi (Universitas Kristen Duta Wacana)*;
Rosa Delima (Universitas Kristen Duta Wacana)

Title:

GoEliTool Usability Level Evaluation

Abstract:

Requirements engineering (RE) involves systematically gathering stakeholder needs for a project or system. The Goal-oriented elicitation tool (GoEliTool), designed under the Automatic Requirements Engineering Model (AREM), facilitates software requirement elicitation in engineering. It supports data entry for goals, activities, processes, procedures, and resources. A usability assessment of GoEliTool involved 33 participants (system analysts, analyst assistants, and users). Results indicate high effectiveness (94% success rate) and efficiency (97%), affirming its utility in requirements gathering within AREM.

Paper ID 20

Authors:

Louis Khrisna Putera Suryapranata (Universitas Pelita Harapan)*;
Giovanni Ivander Gozali (Universitas Pelita Harapan)

Title:

Enhancement of Indonesian Language Learning Motivation Using Trivia Game

Abstract:

Good proficiency in Indonesian is crucial because it can influence success in other subjects. However, as time passes, the proper Indonesian language has started to be replaced by slang, which is often encountered in students' assignments, exam answer sheets, and so on. Fixing this issue isn't easy because the textbooks usually used by students mostly consist of extensive texts, making students easily bored and losing their intention to study. Gamification can enhance students' motivation to learn the Indonesian language. The gamification would involve a trivia game with three quiz modes to learn about standard words through a dictionary feature. Testing is conducted using the IMMS questionnaire based on the ARCS learning model in the pre-test and post-test with in-between time for one week to play the game. Statistical analysis was performed to conclude that the implementation of gamification in Indonesian language learning can enhance students' learning motivation.

Paper ID 22

Authors:

Andre Pratama (Universitas Mikroskil)*

Title:

Bitcoin Cryptocurrency Price Prediction Using IFA-BiLSTM

Abstract:

Bitcoin stands out as the most valuable asset in the cryptocurrency market, characterized by its highly fluctuating and unpredictable price. Investments relying on price fluctuations entail high levels of risk, thus requiring accurate methods to predict Bitcoin price estimates. This research aims to devise a solution for predicting the price value of Bitcoin with fluctuating price characteristics using a combination of the Improved Firefly Algorithm (IFA) and Bidirectional Long Short Term Memory (BiLSTM) methods. The predicted data is preprocessed through min-max normalization before being split into training and testing sets, maintaining an 80:20 ratio. Then, the IFA method will search for the best hyperparameter values for BiLSTM. By using the right hyperparameter values that are appropriate for the data, the model can generate good prediction accuracy. The IFA-BiLSTM model outperforms previous models with an RMSE of 2051.55, MAPE of 3.48%, and accuracy of 96.52%.

Paper ID 23

Authors:

Wulan Sri Lestari (Universitas Mikroskil)*;

Caroline Caroline (Universitas Mikroskil);

Yuni Marlina Saragih (Universitas Mikroskil)

Title:

Deep Learning Approach for Stunting Classification in Toddlers

Abstract:

Stunting in toddlers is a pressing global health issue that demands careful consideration. Stunting refers to a child's height falling significantly below the expected standard for their age, which can hinder physical and cognitive development and increase the risk of chronic diseases later in life. Early detection of stunting is crucial for timely intervention and minimizing long-term consequences. While previous studies have used machine learning to classify stunting in toddlers, their accuracy has been lacking. This research aims to improve classification accuracy using deep learning techniques. The study involves data collection, preprocessing data, and building a stunting classification model with Deep Neural Network. Results show a 3.42% improvement in training accuracy and 2.32% in testing accuracy compared to prior research. The developed model addresses overfitting/underfitting concerns, paving the way for tailored stunting classification tools for toddlers.

Paper ID 25

Authors:

Loso Judijanto (Indonesia Palm Oil Strategic Studies (IPOSS));
Dwi Liestyowati (Fyra Institute);
Andiyan Andiyan (Fyra Institute)*;
Iin Arianti (Politeknik Negeri Pontianak);
Galih Ariprawira (Fyra Institute);
Mohamad Aghust Kurniawan (Fyra Institute)

Title:

On Block Lattice Architecture Platform: An Extraordinary of Lattice Cryptography

Abstract:

Lattices produce or verify cryptographic primitives. Lattice-based cryptography is needed post-quantum. Shor's method can solve RSA, Diffie-Hellman, and elliptic curves on quantum computers; however, specific lattice-based structures are immune. Certain lattice-based systems are secure because numerous well-researched computational lattice problems are challenging to address. Post-quantum lattice-based encryption may be studied. The innovative Boolean Lattice Approach is given in this study. Our approach employs Boolean lattices, not integers. Binary vector lattices work well and represent well. Lattice-based cryptography research uses math, theory, and practice to build safe, efficient cryptographic structures. Block Lattice-based encryption may be post-quantum due to its security and efficiency. The lattice issue may defend security systems against quantum and traditional computer assaults.

Paper ID 26

Authors:

Agus Tri Haryono (Institut Teknologi Sepuluh Nopember)*;
Riyanarto Sarno (Institut Teknologi Sepuluh Nopember);
Ratih Anggraini (Institut Teknologi Sepuluh Nopember);
Kelly Rossa Sungkono (Institut Teknologi Sepuluh Nopember)

Title:

Imputation Missing Stock Prices Using Generative Adversarial Networks and Attention Mechanism

Abstract:

Missing value in time series data can disrupt the analysis of historical data, especially stock market data, which requires the sequence of data points. This research proposes a method for imputation of missing stock prices in multivariate time series. The Generative Adversarial Networks (GAN) method, such as Generative Adversarial Imputation Networks (GAIN), and attention mechanism fill the missing value. The simulated missing pattern as dataset training is produced using the missing completely at random (MCAR) method. The GAN method learns the missing value pattern using generator and discriminator parts and attention mechanism, which are self attention and multi-head attention. The proposed method was tested using various lookbacks, missing rates, hint rates, and evaluation methods on 100 stock issuers. The GAIN multi-head attention significantly outperforms baseline GAIN and GAIN self attention methods.

Paper ID 27

Authors:

Yohanssen Pratama (Institut Teknologi Del);
Tegar Arifin Prasetyo (Institut Teknologi Del)*

Title:

Unlocking Nutritional Insights: Exploring Meal Analysis for Enhanced Dietary Choices with Multinomial Logistic Regression

Abstract:

This study explores the application of Multinomial Logistic Regression (MLR) in analyzing meal compositions to facilitate improved dietary choices. With the escalating prevalence of diet-related health issues, understanding the intricate relationships between meal components and their impact on health outcomes is imperative. The research employs MLR as a powerful statistical tool to model the complex interplay of various food constituents and their influence on dietary patterns. By leveraging a dataset comprising diverse meal compositions and corresponding health indicators, the study aims to elucidate the associations between specific dietary factors and health outcomes. The findings of this study hold considerable implications for public health interventions, dietary recommendations, and personalized nutrition strategies aimed at promoting healthier dietary habits and mitigating the risk of chronic diseases.

Paper ID 29

Authors:

Fajar Akhmad (Institut Teknologi Telkom Purwokerto);
Sudianto Sudianto (Institut Teknologi Telkom Purwokerto)*;
Dasril Aldo (Institut Teknologi Telkom Purwokerto)

Title:

Deep Learning for Predicting Food Commodity Prices in Traditional Markets

Abstract:

Banyumas is one region with a history of fluctuating food prices, especially the price of shallots and chicken meat. Several factors affect fluctuating food prices, such as harvests, seasons, market demand, and so on. Farmers or ranchers often experience losses in selling crops and livestock products. This phenomenon occurs due to intermediaries monopolizing prices, and farmers need more knowledge about market prices, so traditional transactions are detrimental. Price forecasting can be one of the practical solutions to help farmers and ranchers understand the prices of their crops and livestock yields. Therefore, Deep Learning is applied to the experience of food commodities with LSTM and GRU. In this study, the LSTM model achieved the highest performance by producing an MSE value of 0.00035, while the GRU model produced an MSE value of 0.00036. LSTM models perform better with layer LSTM, epoch 100, batch size 64, optimization Adam, and neuron 128.

Paper ID 30

Authors:

Felix Felix (Universitas Mikroskil)*

Title:

User Experience Design of Mobile Application for Tuberculosis Care and Prevention in Indonesia

Abstract:

User experience (UX) is a major concern in m-health (mobile health) application design. In the global attempt to eliminate Covid-19, m-health apps play a remarkable role. With the same spirit, tuberculosis (TB) as the world's top infectious killer after Covid-19 can be suppressed. Unlike Covid-19 where the patient can be either cured or killed in less than a month, TB need at least 6 months to be cured for the first stage of treatment. TB are highly contagious and easily spread in the poor hygiene condition. The purpose of this research is to design a user-oriented UX design. The design then can ease programmers working with Health Ministry or healthcare units to develop a fully functioning m-health app. In order to produce a user-oriented UX design, the research uses design thinking methodology.

Paper ID 31

Authors:

Saruni Dwiasnati (Satya Wacana Christian University, Salatiga)*;

Teguh Wahyono (Satya Wacana Christian University, Salatiga);

Budhi Kristianto (Satya Wacana Christian University, Salatiga);

Wahyu Hari Kristiyanto (Satya Wacana Christian University, Salatiga)

Title:

Systematic Literature Review: Utilizing Machine Learning for Agricultural Purposes through a Case Study on Chili Pest Type Identification

Abstract:

Machine Learning has seen remarkable growth in recent years and has been implemented across various sectors including education, agriculture, and government, fueled by the vast amounts of data available in these areas. This literature review focuses on the application of machine learning in agriculture, specifically for identifying pest types affecting chili plants. The objective is to gather and evaluate different methods and models that have been utilized for detecting and classifying pest types on chili plants. Information for this Systematic Literature Review (SLR) is collected from sources such as Scopus Elsevier, Google Scholar, Sprott, ACM Digital Library, Proquest, and IEEE Explore. The findings of this study are intended to offer valuable insights to researchers and practitioners on the most effective models that could enhance the quality and productivity of chili cultivation and mitigate the impacts of pest invasions.

Paper ID 32

Authors:

Enjelin Enjelin (Universitas Mikroskil)*;
Ronsen Purba (Universitas Mikroskil);
Muhammad Fermi Pasha (Universitas Mikroskil)

Title:

Business Closure Prediction Based on Users Rating and Review Using H2O

Abstract:

Predicting business closure refers to the process of analyzing various factors and making predictions about the likelihood that a business will close. Closing a business does not only affect business owner, but it also has an impact on employees. There have been many studies conducted on predicting business closures based on managerial or economic factors, but research discussing predicting business closures based on customer reviews or ratings is still limited. Prediction of business closures is made to assist business owner in reducing the risk of loss and business closure. In this research, business closure predictions are made based on the combination between customer ratings and review data. Merging these two data is done to see whether it can increase the level of accuracy of the predicted results of business closures compared to rating or review data alone. Predictions are made using a deep learning framework, H2O, which can prevent the model from experiencing overfitting.

Paper ID 33

Authors:

Khadija Meghraoui (Iav Hassan II)*;
Imane Sebari (Iav Hassan II);
Saloua Bensiali (Iav Hassan II);
Kenza Ait El Kadi (Iav Hassan II)

Title:

Can Pixel-based Approach Achieve Similar Performance to Area-based Approach in Crop Yield Forecasting using Sentinel-2 Imagery and Deep Neural Networks? A Probabilistic Analysis

Abstract:

Accurately forecasting crop yields is crucial for addressing food security challenges. Satellite imagery and historical remote sensing data are vital for this purpose, especially at the scale of individual fields. Selecting between pixel-based and area-based approaches is critical for small fields, particularly with deep learning models. We introduce two frameworks for forecasting corn yield, utilizing Sentinel-2 imagery and deep neural networks. We compare the two methods using statistical metrics and probabilistic techniques, including error histograms and cumulative distribution function (CDF) plots. Our findings reveal nuanced distinctions in predictive capabilities, with the area-based model showing greater accuracy, while the pixel-based approach offers comparable performance despite slightly larger discrepancies.

Paper ID 37

Authors:

Timothy Kristanto (Universitas Ciputra Surabaya);
Evan Tanuwijaya (Universitas Ciputra Surabaya)*

Title:

Dangerous Objects Detection and Segmentation in X-ray Images of Passenger Goods Using YOLOV8

Abstract:

Security check using X-ray machine is often found at public places, especially airports, to mitigate criminal activities or even unwanted accidents. However, there exists the possibility of overlooked dangerous objects, especially during busy hours. Moreover, obscured dangerous objects becomes another challenge for the security personnels. This study used yolov8s-seg model to detect and segment dangerous objects in X-ray images using the PIDray dataset. All failures to detect and segment dangerous objects are caused by two main factors, including small-sized and obscured dangerous objects. Through detailed evaluations, yolov8s-seg model with 50 epochs and 16 batch size is considered to be the most optimal version as it has the fastest training time yet able to provide competitive results with other models.

Paper ID 40

Authors:

Iwan Santosa (Universitas Kristen Maranatha)*;
Panji Yudasetya Wiwaha (Universitas Kristen Maranatha);
Hapnes Toba (Universitas Kristen Maranatha);
Andreas Widjaja (Universitas Kristen Maranatha);
Giezka Veby Agustin (Universitas Kristen Maranatha);
Katrine Katrine (Universitas Kristen Maranatha)

Title:

System Design for Therapist Retention Analysis in an Online Mental Healthcare Application Based on MapReduce

Abstract:

Companies can measure potential gains and losses based on insights about user retention rates. Based on these insights, companies can further analyze the factors that affect user retention, so that they can take further action to minimize users who have the potential to stop using their services. Companies, such as in the field of mental healthcare, can also develop better business strategies by considering the insights gained from the analysis. This research aims to design an information system to extract information from unidentified application usage data, to generate calculations about user retention rates based on the metrics required by the company providing the application. The information system design is based on microservices architecture using MapReduce algorithm. The use of big data approach aims to facilitate the company's future needs as user data will grow continuously. The design-to-testing phase is carried out by implementing an agile project management approach.

Paper ID 44

Authors:

Lukman Arif Sanjani (Institut Teknologi Sepuluh Nopember)*;
Ulma Shabrina (Institut Teknologi Sepuluh Nopember);
William Phedra (Institut Teknologi Sepuluh Nopember);
Riyanarto Sarno (Institut Teknologi Sepuluh Nopember);
Kelly Rossa Sungkono (Institut Teknologi Sepuluh Nopember)

Title:

A Novel Activity Recommendation System of Financial Balance Scorecard for COBIT 2019 Based on Company Strategy

Abstract:

This research introduces a novel Activity Recommendation System built on the COBIT 2019 framework tailored for Financial Balance Scorecard. The motivation stems from the challenges faced by auditors when identifying essential activities aligned with a company's strategy, often hindered by manual COBIT 2019 guideline navigation. To address this, a system was developed, where inputting the company strategy, triggers the display of recommended activities automatically. The methodology involved creating interconnected nodes from COBIT 2019 Element in Neo4J. The process starts with user input of the company strategy, followed by preprocessing step, then compared it to Enterprise Goals using TF-IDF and cosine similarity. Goals with high similarity scores trigger a graph query to reveal connected activities. The implementation was successful, simplifying the audit process by providing a list of recommended activities based on the company strategy.

Paper ID 45

Authors:

Natalia Maria Noya (Universitas Kristen Maranatha)*;
Marcellia Susan (Universitas Kristen Maranatha)

Title:

Transformative Human Resources: Mapping Future Directions for Innovation in Information Technology and Multidisciplinary Applications

Abstract:

With an emphasis on the use of Information Technology (IT) in higher education, this study attempts to comprehend the transformative role that Human Resources (HR) plays in determining the course of future innovation in IT and its multidisciplinary application. The purpose of the case study was to acquire a comprehensive grasp of how HR may act as a change agent in the face of swift advances in information technology within the context of higher education. This kind of study employs qualitative research methodologies and data collection strategies that involve communication with HR department, finance department, IT department and executives in allied fields of higher education. The research results show that transformative HR needs to have strong technical skills, critical thinking skills and the ability to adapt to change. Multi-disciplinary integration is also needed to encourage sustainable innovation.

Paper ID 47

Authors:

I Nyoman Gde Artadana Mahaputra Wardhiana (Institut Teknologi Sepuluh Nopember)*;
Muhammad Ghufron (Institut Teknologi Sepuluh Nopember);
Riyanarto Sarno (Institut Teknologi Sepuluh Nopember);
Agus Tri Haryono (Institut Teknologi Sepuluh Nopember);
Shoffi Izza Sabilla (Institut Teknologi Sepuluh Nopember);
Fadilatul Taufany (Institut Teknologi Sepuluh Nopember);
Sholiq (Institut Teknologi Sepuluh Nopember);
Kelly Rossa Sungkono (Institut Teknologi Sepuluh Nopember)

Title:

Comparative Study of Statistical, Machine Learning, and Deep Learning for Rice Retail Price Forecasting in West Java

Abstract:

This research investigates the effectiveness of machine learning (ML), deep learning (DL), and statistical algorithms for forecasting rice retail prices in West Java, Indonesia. Employing data from 2021 to 2023, this study evaluates Random Forest, LightGBM, XGBoost, LSTM, and SARIMAX models. ML algorithms displayed high error rates with RMSE values exceeding 1100, indicating challenges with complex datasets. In contrast, LSTM models demonstrated robust performance with a substantially lower RMSE of 129.67, but LSTM model's low error rates was achieved by not involving other exogenous variables, focusing solely on historical price data. The SARIMAX model, while less effective in direct forecasting with an RMSE of 799.82, effectively utilized exogenous variables to encapsulate seasonal trends, offering valuable insights into supply chain dynamics affecting rice prices.

Paper ID 49

Authors:

Evelyn Sierra (Institut Teknologi Sepuluh Nopember)*;
Erick Delenia (Institute Teknologi Sepuluh Nopember);
Eric Lays (Institut Teknologi Sepuluh Nopember);
Riyanarto Sarno (Institut Teknologi Sepuluh Nopember);
Agus Tri Haryono (Institut Teknologi Sepuluh Nopember)

Title:

A Comparative Analysis of Macroeconomic Indicators in Optimising Credit Risk Prediction

Abstract:

Credit risk modelling plays a role in financial institutions' evaluation of the creditworthiness of borrowers and in managing lending risks effectively. Feature selection is critical in developing robust and interpretable credit risk models. This paper presents a comparative analysis of various macroeconomic indicators applied to linear regression analysis for credit risk modelling. Specifically, this study compares three feature selection techniques: clustering feature, feature combination and correlation. This study employs a real-world dataset comprising various macroeconomic indicators in Indonesia and a financial institute's default scores to train and evaluate the linear regression models. Experimental results demonstrate that the combinations feature outperforms clustering in optimizing credit risk modelling by achieving higher predictive accuracy.

Paper ID 51

Authors:

Arinal Haq (Institut Teknologi Sepuluh Nopember)*;
Eko Sugeng Cahyadi (Institut Teknologi Sepuluh Nopember);
Muhammad Shafhi Kasyfillah (Institut Teknologi Sepuluh Nopember);
Riyanarto Sarno (Institut Teknologi Sepuluh Nopember);
Agus Tri Haryono (Institut Teknologi Sepuluh Nopember)

Title:

Multi-class Oil Palm Trees Condition Detection from UAV Images Using Faster R-CNN with EfficientNetV2

Abstract:

In regions like Indonesia, known for extensive Oil Palm tree production, tree counting and tree condition detection accuracy are pivotal in assessing and forecasting the country's oil palm tree production. Faster R-CNN emerges as a deep learning method suitable for tree condition detection to increase detection precision. This paper proposes modifications to the backbone of Faster R-CNN to enhance tree condition detection performance, particularly when applied to UAV images for assessing tree conditions. In this study, the EfficientNetV2, especially the EfficientNetV2-S backbone, has stood out in performance for evaluation results and has become the utmost model in this study. The F1 Score from this model reached 80% and 73% for IoU@50 and IoU@75, respectively. This result is preferable to the other models used in this study.

Paper ID 53

Authors:

Muhammad Yusuf (Institut Teknologi Sepuluh Nopember)*;
Arinal Haq (Institut Teknologi Sepuluh Nopember);
I Nyoman Gde Artadana Mahaputra Wardhiana (Institut Teknologi Sepuluh Nopember);
Riyanarto Sarno (Institut Teknologi Sepuluh Nopember);
Kelly Rossa Sungkono (Institut Teknologi Sepuluh Nopember)

Title:

Process Mining For Evaluating Hospital Billing System Based On DSS01 Domain COBIT 2019 Framework

Abstract:

An information system streamlines operations and provides valuable data, but insufficient control can lead to inefficiencies in the process. The audit using the COBIT 2019 framework has provided optimal results in managing and controlling information technology. However, the assessment process, which is still conducted manually, has the potential to introduce bias in the evaluation results. This study proposed process mining method for evaluating processes based on DSS01 COBIT 2019. The proposed method will be evaluated to a hospital billing system to demonstrate how process mining can identify bottlenecks in processes in the system for providing insight for process improvement. Our findings highlight significant bottlenecks within five key connection processes and identify specific activities that impede the optimal flow of operations. These discoveries are aligned with the DSS01 objective of COBIT 2019, which aims to enhance the management of IT delivery and support services.

Paper ID 55

Authors:

Wowon Priatna (Universitas Kristen Satya Wacana)*;
Hindriyanto D Purnomo (Universitas Kristen Satya Wacana);
Irwan Sembiring (Universitas Kristen Satya Wacana);
Theophilus Wellem (Universitas Kristen Satya Wacana)

Title:

Integrating Class Imbalance Solutions into Fraud Detection Systems: A Systematic Literature Review

Abstract:

The review identifies three methods to manage class imbalance: data-level techniques, algorithmic approaches, and hybrid methods. Data-level methods adjust data pre-modeling to balance datasets, while algorithmic strategies modify learning to lessen majority class bias. Hybrid techniques use advanced machine learning, including deep learning, to handle skewed data effectively. It explores solutions like Dynamic Weighted Entropy and SMOTified-GAN for realistic data generation, focusing on evaluation metrics like the F1 Score, AUC, and ROC Curve. Despite progress, integrating these into fraud detection remains challenging. The study underscores the need for further research to enhance the robustness and accuracy of these systems, critical for evolving digital fraud management standards and ensuring operational sustainability.

Paper ID 57

Authors:

Rizqy Ahsana A Putri (Institut Teknologi Sepuluh Nopember)*;
Lauretha Devi Fajar Vantie (Institut Teknologi Sepuluh Nopember);
Kelly Rossa Sungkono (Institut Teknologi Sepuluh Nopember);
Riyanarto Sarno (Institut Teknologi Sepuluh Nopember)

Title:

Identifying Non-Conforming Process in Automobile Insurance Claims Using Process Mining and COBIT 2019

Abstract:

The background of this research is facing challenges in identifying process paths that are not in accordance with standard operating procedures (SOPs). The purpose of this research is to identify motor vehicle insurance claim process paths that are not in accordance with the SOP using process mining techniques and the COBIT 2019 framework. The research method used involves analyzing insurance claim log data using the DISCO application to map the sequence of activities. The COBIT 2019 framework was used to assess the governance and control of business processes. The results showed that out of 30,000 case IDs, the majority activity sequence pattern that conformed to the SOP was found in 97.55% of cases. However, there were variations in the activity sequence that indicated the presence of process paths that did not comply with the SOP in 2.45% of the cases.

Paper ID 58

Authors:

I Gusti Lanang Agung Oka Cahyadi Pradipta (Institut Teknologi Sepuluh Nopember)*;
Rizky Damara Ardy (Institut Teknologi Sepuluh Nopember);
Riyanarto Sarno (Institut Teknologi Sepuluh Nopember);
Kelly Rossa Sungkono (Institut Teknologi Sepuluh Nopember)

Title:

A Recommendation System for Internal Business Processes of COBIT 2019 Using Graph Algorithm and Similarity Methods

Abstract:

In today's dynamic digital landscape, effective IT management is crucial for organizational success and risk mitigation. This study proposes a novel recommendation system for internal business processes based on the COBIT 2019 framework. Leveraging graph algorithms, semantic similarity measurements, LSTM, and TF-IDF methods, the system maps enterprise goals to management objectives and provides activity recommendations aligned with company goals. Experimental results demonstrate the system's effectiveness in optimizing IT management practices, enhancing operational efficiency, and ensuring regulatory compliance. Additionally, a user-friendly graphical representation of internal business processes using Neo4j allows stakeholders to visualize complex relationships within the COBIT framework and make informed decision. This research contributes to advancing IT governance practices, offering organizations a valuable tool to improve IT strategies and achieve business objectives effectively.

Paper ID 59

Authors:

Rizqy Ahsana A Putri (Institut Teknologi Sepuluh Nopember)*;
Muhammad Nevin (Institut Teknologi Sepuluh Nopember);
Dwinanda Bagoes Ansori (Institut Teknologi Sepuluh Nopember);
Abdullah Faqih Septiyanto (Institut Teknologi Sepuluh Nopember);
Riyanarto Sarno (Institut Teknologi Sepuluh Nopember)

Title:

Automated Extraction of Microservice Architecture Using a Rule-Based Approach

Abstract:

Microservices offer a modular approach to software architecture, enhancing flexibility and scalability. This paper introduces an automated extraction method for evaluating the cohesion, complexity, and granularity of microservices themselves. Leveraging a rule-based approach, the system identifies methods within a microservice architecture. Metrics such as Average Lack of Cohesion Metric (ALCOM), Number of Operations (NOO), and Average Service Granularity Metric (ASGM) are calculated to assess the extracted microservices. A case study in Account Payable Microservice of ERP System illustrates the effectiveness of this method in identifying microservice variables and evaluating architecture quality. This research found that the value of ALCOM is -0.93, NOO is 3.63, and ASGM is 0.50.

Paper ID 60

Authors:

Budi Susanto (Universitas Kristen Duta Wacana)*;
Michael Himawan Handoko (Universitas Kristen Duta Wacana);
Gloria Virginia (Universitas Kristen Duta Wacana)

Title:

Modeling Indonesian Thesaurus on Simple Knowledge Organization System

Abstract:

This paper details the transformation of the Indonesian thesaurus Tesamoko into a SKOS ontology. The process involves scanning the Tesamoko book, performing OCR, and extracting lemmas, absorption words, word classes, and language varieties mapped into SKOS. We introduce new ontology vocabularies to enhance the SKOS Indonesian thesaurus model. The evaluation of SKOS focuses on its ontology aspects and its implementation in information retrieval (IR). Results indicate that the SKOS thesaurus model needs improvement, as it only meets the conciseness criterion. Four experimental setups were used to assess the thesaurus's effectiveness in IR, involving the thesaurus for query and corpus expansion. The F1 measure shows that thesaurus utilization does not enhance IR performance; without thesaurus expansion, the F1 score is 0.218, while with thesaurus expansion, it drops below 0.15. However, corpus expansion performs slightly better than query or combined query and corpus expansion.

Paper ID 61

Authors:

Muhammad Nevin (Institut Teknologi Sepuluh Nopember)*;
I Kadek Agus Ariesta Putra (Institut Teknologi Sepuluh Nopember);
Dwinanda Bagoes Ansori (Institut Teknologi Sepuluh Nopember);
Riyanarto Sarno (Institut Teknologi Sepuluh Nopember);
Agus Tri Haryono (Institut Teknologi Sepuluh Nopember)

Title:

A Deep Learning Approach for Word Segmentation in Javanese Letter Manuscript Transliteration

Abstract:

Traditionally written using the Javanese Letter or "Aksara Jawa" script, the Javanese language encompasses a rich corpus of manuscripts that record diverse subjects such as history, culture, and traditional practices. With over 121,668 Javanese manuscript titles identified, only a fraction has been transliterated into alphabetical writing, underscoring the urgent need for efficient language preservation methods. This study evaluates deep learning models for word segmentation in Javanese manuscript transliteration. Results from experiments conducted on an unseen dataset reveal that the Bidirectional Long Short-Term Memory (BiLSTM) model outperforms other architectures consistently across all metrics. With an accuracy of 0.9862 and superior scores in f1-score, precision, and recall, the BiLSTM model demonstrates robustness in capturing the intricate linguistic patterns and textual structures inherent in Javanese manuscripts.

Paper ID 62

Authors:

Yustus Eko Oktian (Universitas Ciputra Surabaya)*;
Kei Patrick Hilton (Universitas Ciputra Surabaya);
Christian Christian (Universitas Ciputra Surabaya)

Title:

Transforming Digital Identity through Smart Contract as Identity

Abstract:

Password-based authentication remains vulnerable due to the centralized storage of passwords on servers. Even with strong user passwords, breaches can compromise identities. To address this, we outline a smart-contract-as-identity approach, where users are identified by the smart contract address instead of their public keys. If private keys are compromised, users can change their keys directly in the smart contract without needing to change their identity, demonstrating the resilience of our proposal. We also offer both single-key and multi-key signature options, showing flexibility in tuning the security/performance trade-off. Additionally, we create an easy-to-use cryptocurrency wallet-like user interface to enhance usability. Our early analysis shows that this smart contract design is fully deployable in the blockchain network and generates low processing delays.

Paper ID 65

Authors:

Albert Sagala (Institut Teknologi Del)*;
Petrus Domisis R. Sinaga (Institut Teknologi Del);
Irfan Surya Dharma Manik (Institut Teknologi Del);
Sandro Maruli Tua Siagian (Institut Teknologi Del)

Title:

Enhancing Agricultural Pesticide Application through a Custom-Built Hexacopter Equipped with Advanced Control and Navigation Systems

Abstract:

Nowadays, technology has been developed to assist farmers in spraying pesticides. This research aims to design a low-cost drone that can spray pesticides on plants. The drone implemented is a type of hexacopter made of aluminum material with dimensions of 1130 mm and is controlled by Pixhawk. The drone moves using six propellers with a size of 15x5.5 inches, which are mounted on the Sunnysky X4112S 485 KV brushless motor. The drone can be flown manually and autonomously with several motion modes such as hover, roll, pitch, and yaw. For drone stability, a PID controller was applied. Additionally, the Hexacopter is equipped with an ultrasonic sensor to maintain a position of 1-2 meters above the tree. The drone has been tested and can fly for 7 minutes and 2 seconds without a load and for a maximum of 3 minutes and 48 seconds with a full tank of water, using a 6S 6200 mAh LiPo battery.

Paper ID 67

Authors:

Yurri Wagiu (Universitas Atma Jaya Yogyakarta);
Andi W. R. Emanuel (Universitas Atma Jaya Yogyakarta)*;
Pranowo Pranowo (Universitas Atma Jaya Yogyakarta)

Title:

Gamification Design for Temple Tourism Application

Abstract:

Tourism plays a significant role in promoting the heritage in Indonesia, including the temple. There are many temples located on Java Island, especially in the Province of Central Java and the Special Region of Yogyakarta. Many aspects can be observed by temple tourists other than observing the artifacts, such as their historical backgrounds. This research proposed a mobile temple tourism application design, especially for Prambanan Temple Compound dan Ratu Boko Site Temples, to enrich the experience of visitors by utilizing gamification. There are five gamification elements used in this design which are points, levels, challenges, rewards, and feedback. By demonstrating the design, it can be shown that the average score of the design by the respondents is 84.8% in the category of agree and strongly agree. Based on this result, it can be concluded that the design meets the expectations of helping temple tourists in enriching their visits.

Paper ID 69

Authors:

Rini Handayani (Telkom University)*;
Riyanarto Sarno (Institut Teknologi Sepuluh Nopember);
Dedy Rahman Wijaya (Telkom University);
Kelly Rossa Sungkono (Institut Teknologi Sepuluh Nopember);
Daniel Yeri Kristiyanto (Institut Teknologi Sepuluh Nopember)

Title:

Utilization of GC-MS in Determination of Electronic Nose Sensor Array for Classification of Gambung Green Tea Quality

Abstract:

Green tea is recognized for its numerous advantages. Several studies have been conducted employing diverse approaches to categorize the quality of green tea, one of which involves the development of an electronic nose system (e-nose). The selection of the gas sensor array is a critical factor in the construction of an effective e-nose system. Thus, in the present study, the identification of gas sensors array was executed based on the result of gas chromatography-mass spectrometry (GC-MS) on two specimens, categorized as good and quality defects. The sensory outputs from each sensor are gathered into a dataset, and subsequently analyzed for predictive classification. The dataset generated by the deployment of sensors, namely MQ3, TGS822, TGS2602, MQ5, MQ138, and TGS2620, exhibits optimal performance, specifically 0.989 in random forest modeling. In summary, it is proven that employing a combination of these six sensors and random forest modeling yields a performance above 98%.

Paper ID 70

Authors:

Riswan E. Tarigan (Universitas Pelita Harapan)*;
Calandra Haryani (Universitas Pelita Harapan);
Andree E. Widjaja (Universitas Pelita Harapan)

Title:

Enhancing Organizational Performance through Strategic Knowledge Sharing: Insights and Models

Abstract:

The implementation of knowledge management practices, particularly knowledge sharing, plays a pivotal role in shaping organizational behavior. Effective knowledge management is crucial for organizational success as it facilitates enhanced learning and productivity among individuals. Knowledge within an organization improves performance and drives innovation. Knowledge sharing involves both tacit and explicit knowledge, enabling organizations to address challenges more effectively, make informed decisions, and enhance overall performance. This paper highlights the positive impact of knowledge sharing on organizational behavior, exploring its influence within organizations and identifying barriers encountered in the process. The results of the study present a model for implementing knowledge sharing dimensions within organizations, demonstrating how such practices can significantly improve organizational effectiveness and efficiency.

Paper ID 71

Authors:

I Made Murwantara (Universitas Pelita Harapan)*;
Kristina Wulandari (Universitas Pelita Harapan)

Title:

A Multi-Perspective Process Explorer Method to Identify Anomaly of an Education ERP

Abstract:

Enterprise Resource Planning (ERP) system has commonly used in the education sector. However, implementing an ERP system is a complex process that may involves some alignment of the needs and objectives of various stakeholders, which can lead to discrepancies and system inefficiencies. This work aims to propose an anomaly detection technique of processes within an ERP using Multi-Perspective process mining. Our result shows that ERP in the education sector must considers the perspectives of all processes. This approach has identified important aspects that affect the success of ERP system processes, such as stakeholder engagement. This study using Data Discovery Mode process has resulted of 466 transitions and 95 tokens, and Performance Mode is 8 process tokens, Fitness Mode with an average of 48% and Precision Mode with a value of 56.6% can guide higher education institutions in the implementation of their ERP systems, leading to more efficient and effective systems.

Paper ID 74

Authors:

Andrian R. Crispin (Universitas Sumatera Utara)*;
Muhammad Atqa Adzkiya Zaldi (Universitas Sumatera Utara);
Victor Hulu (Universitas Prima Indonesia);
Abdi Dharma (Universitas Prima Indonesia)

Title:

Data-Driven Exploration: Analyzing Triage Data's Role in Predicting Intensive Care Unit Transfers within 24 Hours

Abstract:

In healthcare analytics, data quality and comprehensiveness are crucial. This research focuses on an exploratory data analysis (EDA) of triage data to support the development of an automated model aimed at reducing the high false positive rate of existing early warning systems. We analyzed triage data of Emergency Department patients needing ICU transfers within 24 hours, revealing patterns like normal temperature ranges (95-102°F), heart rates (50-125 bpm), and declining oxygen saturation (100%-90%). These findings helped manage outliers and encode features properly. Our feedforward neural network classifier reduced false positives while maintaining moderate accuracy. Despite improvements, further enhancement is needed. Our future work will validate findings using real-time data, focusing on minimizing false positives and maximizing impact on patient care.

Paper ID 75

Authors:

Matahari Bhakti Nendya (Universitas Kristen Duta Wacana)*;
Lailatul Husniah (Universitas Muhammadiyah Malang);
Hardianto Wibowo (Universitas Muhammadiyah Malang);
Syahri Mu'min (Universitas Nahdlatul Ulama Sidoarjo);
I Kadek Dendy Senapartha (Universitas Kristen Duta Wacana)

Title:

Enhancing Endless Runner Gameplay: Integrating Brainwave-Based Natural Interaction with Rule-Based Management System

Abstract:

Within gaming technology, progress now encompasses novel player engagement methods beyond traditional gameplay mechanics. Historically devices like joysticks and motion cameras were crucial. Recently, brainwave technology, which uses EEG signals to control game characters, has emerged. This study explores EEG signals potential to enable natural interaction, offering a unique experience. Using Bluetooth to capture and transmit brainwave signals, players can control characters by thinking. Our study explores gender disparities in game attention signals. We chose an endless runner since it takes constant focus. . Male attention signals peaked at 96 Hz, compared to 78 Hz for females. Female attention signals averaged 43.1 Hz, while males averaged 38.3 Hz. Males have slightly less tension than females. These findings on cognitive processes during gameplay will inform brainwave-enabled gaming technology development.

Paper ID 77

Authors:

Visca Sylvia (Universitas Sumatera Utara)*;
Maya Silvi Lydia (Universitas Sumatera Utara);
Benny Benyamin Nasution (Politeknik Negeri Medan)

Title:

Improving SVM Performance in Determining Cost and Kernel Parameter Values through Grid Search

Abstract:

The purpose of this study is to improve the performance of Support Vector Machine (SVM) algorithm in sentiment analysis of trainee reviews through parameter optimization using Grid Search. Trainee reviews were taken from the Vocational and Productivity Training Center (BBPVP) Medan, which is the context of this study. The method used includes collection and preprocessing of review data, followed by the application of SVM for sentiment analysis. Grid Search is used to optimize the cost and kernel parameters of SVM. The results show that after optimization, the resulting SVM model shows significant performance improvement compared to the model before optimization. Accuracy increased from 68.75% to 71.96%, with improvements in other metrics such as precision, recall, and F1 score. These findings suggest that Grid Search is an effective method to optimize SVM parameters in sentiment analysis, providing a more accurate evaluation of the effectiveness of training programs at BBPVP Medan.

Paper ID 78

Authors:

Alfi Rahman (Universitas Sumatera Utara);
Elviawaty M. Zamzami (Universitas Sumatera Utara)*;
Sawaluddin Sawaluddin (Universitas Sumatera Utara)

Title:

Performance Improvement of Support Vector Machine with Firefly Algorithm for Public Complaints Classification

Abstract:

Public complaint services require quick responses from the relevant department. Therefore, text classification system with high accuracy is required. One of the methods used is the Support Vector Machine (SVM). SVM is method with better performance than other machine learning methods, but it is influenced by parameter selection. The hyperparameter C controls the optimization between margin and classification errors. One approach to optimizing parameter selection is using the Firefly Algorithm (FFA). The data samples taken from the service were 1,209 data with 4 category classes, and the dataset was split into 50% training data, 20% validating data, and 30% testing data. We obtained the SVM-FFA test results at $C = 0.269$, which had the highest accuracy rate of 97.52%, with an average value in 10 trials of 96.01%. The SVM test results showed the highest accuracy level of 95.87%, with an average value of 95.24%. It shows that optimizing C parameters using FFA can improve the SVM accuracy.

Paper ID 79

Authors:

Akshay Karthik (Hamilton High School)*;
Michael J Donovan (Arizona State University)

Title:

A Novel Deep Learning-Based Multi-Model Ensemble Approach for the Prediction of Non-Small Cell Lung Cancer (NSCLC) Metastasis via Integration of Multi-omics Data

Abstract:

Lung cancer is the second most prevalent cancer globally, with 2.2 million new cases and 1.8 million associated deaths annually. This research focuses on Non-Small Cell Lung Cancer (NSCLC), which is around 80-85% of all Lung cancer cases. While early detection of metastasis is crucial, current methods such as imaging face limitations as they lack a comprehensive understanding of the molecular causes of metastasis, causing 90% of all cancer-related deaths. This research aims to predict NSCLC metastasis by integrating high-throughput multi-omics data. A denoising autoencoder was used, while the class imbalance was addressed via the Synthetic Minority Over-sampling Technique. Least Absolute Shrinkage and Selection Operator reduced features to the top 100 components for dimensionality reduction. Utilizing a modified Multi-Model Ensemble Learning approach with a Stacking Classifier, this study achieved a 94.32% accuracy, surpassing models proposed in previous studies at 85%.

Paper ID 80

Authors:

Baskoro Adi Wicaksono (Universitas Gadjah Mada)*;
Bimo Sunarfri Hantono (Universitas Gadjah Mada);
Teguh Bharata Adji (Universitas Gadjah Mada)

Title:

Word Segmentation Task for Southeast Asian Abugida Scripts: A Systematic Literature Review

Abstract:

Word segmentation is part of natural language processing and computational linguistics for finding word boundaries in a text. Many Southeast Asian Abugida scripts, including Khmer, Lao, Thai, Burmese, Javanese, and Sundanese, commonly employ scriptio continua, a writing style in which no spaces or other markings are used between words or sentences. The scriptio continua writing style presents a distinct ambiguity problem for the word segmentation process. This review was conducted to provide a thorough overview of the word segmentation task for Southeast Asian Abugida scripts that use scriptio continua writing style. This review found that three unique scripts—Thai, Burmese, and Khmer—had been thoroughly researched for the past five years. Combining different approaches has been done to maximize the accuracy of word segmentation tasks for these scripts. The most common data sources processed for these tasks originate from existing corpora.

Paper ID 81

Authors:

Andy Mohammad Teguh (Institut Teknologi Sepuluh Nopember)*;
Joko Slamet (Institut Teknologi Sepuluh Nopember);
Hartono Saputro (Institut Teknologi Sepuluh Nopember);
Kelly Rossa Sungkono (Institut Teknologi Sepuluh Nopember);
Riyanarto Sarno (Institut Teknologi Sepuluh Nopember)

Title:

Optimizing IT Governance and Project Management in Software Development through AI Integration and COBIT 2019 Framework

Abstract:

In the modern business environment, efficient time management and robust IT governance are crucial due to rapid technological advancements. Effective governance and resource management are imperative for organizations aiming to optimize performance. This research uses AI techniques and the COBIT 2019 framework to optimize IT governance in software development projects. Quantitative methods are employed to analyze factors causing scheduling delays in projects using machine learning algorithms. Data from a previous study on software cost estimation involves 120 projects from 42 organizations. We evaluate various machine learning models, and we find that CatBoost provides reliable project duration predictions. Model performance was evaluated using MAE, RMSE, R2, and MAPE. Integrating AI with COBIT 2019 enhances project duration estimation accuracy and strengthens IT governance. This combined approach improves project efficiency and aligns IT initiatives with organizational goals.

Paper ID 84

Authors:

Ainun ARF Rizkyani Fadillah (Universitas Pembangunan Nasional Veteran Jawa Timur)*

Title:

Clustering Analysis of Popular Webtoons in Indonesia Using K-Means Method

Abstract:

Many things have changed as a result of technological advancement. A field can be transformed by technology into an easier and more useful digital form. Technology has altered the webcomic service Webtoon. Webtoon has a variety of comics from different nations that offer the storylines we seek. In the realm of comics, many genres and lengths have developed into their own competitive field. Of course, the authors don't want their comics to have a low rating. So the authors must carefully choose the genre and determine the right duration/length of their comics in order to appeal to a wide audience if they don't want it to receive poor reviews. To categorize genres and duration ranges with low, medium, and high ratings, clustering analysis utilizing K-Means is used. The findings of this research show that the romance genre and episode length of 100 to 400 episodes are the genre and duration with the highest ratings.

Paper ID 88

Authors:

Muhammad Atqa Adzkie Zaldi (Universitas Sumatera Utara)*;
Opim Salim Sitompul (Universitas Sumatera Utara);
Erna Budhiarti Nababan (Universitas Sumatera Utara);
Andrian Reinaldo Crispin (Universitas Sumatera Utara)

Title:

Twitter Data Extraction for Food and Beverage Business Analytics

Abstract:

This research explores the extraction and analysis of Twitter data to support the food and beverage industry, focusing on the Indonesian language. The study utilizes the Twitter API and Pentaho Data Integration (PDI) to extract three categories of datasets: tweet data, profile data, and place data. Through the analysis of tweet creation patterns, hashtag usage, and food and beverage-specific keywords via a dynamic dashboard built with Streamlit and DuckDB, this research provides actionable insights into consumer trends and preferences within the Indonesian digital society. The findings demonstrate the potential of social media data as a valuable resource for businesses to inform strategic decision-making, develop marketing strategies, and optimize product development. Additionally, this study proposes future research directions, including refining keyword selection, integrating AI-based analysis, and analyzing high-engagement accounts to maximize social media impact.

Paper ID 89

Authors:

Andrian Reinaldo Crispin (Universitas Sumatera Utara);
Ade Candra (Universitas Sumatera Utara)*;
Opim Salim Sitompul (Universitas Sumatera Utara)

Title:

Data Preprocessing on Triage Data for Predicting ICU Transfer within 24 Hours

Abstract:

This study evaluates data preprocessing effectiveness on triage data for predicting ICU transfers within 24 hours, comparing the TREWS scoring system with a Random Forest model. TREWS accuracy varied with the partial scoring threshold at 54.23%, scores >4 at 50.13%, and scores >7 at 55.77%. The Random Forest model outperformed TREWS, starting at 54% accuracy with TREWS parameters and improving to 63% with additional parameters like "ed_los_hours," "o2sat," and "gender." These results indicate that integrating machine learning with expanded parameters and effective data preprocessing significantly enhances prediction accuracy over traditional scoring systems. Recommendations include optimizing traditional systems with additional parameters, implementing machine learning for better predictions, using broader datasets, and training medical teams on these models' effective use and interpretation.

Paper ID 90

Authors:

Vivi Fitriani (Telkom University);
Z. K. A. Baizal (Telkom University)*

Title:

Tourist Route Recommender System Using Whale Optimization Algorithm (A Case Study of Yogyakarta)

Abstract:

Yogyakarta in Indonesia is a top tourist destination known for its diverse and renowned attractions. Many tourists plan multi-day trips to explore the area. Tourists usually depend on travel agents, but many travel route recommender systems only focus on planning one-day trips and need to consider factors like cost, duration, and destination rating. Therefore, this paper presents a multi-day travel route recommender system that considers user preferences such as cost, time duration, and destination ratings. We solve the route optimization problem analogous to finding a solution to the Traveling Salesman Problem (TSP). We use the Whale Optimization Algorithm (WOA) and Multi-Attribute Utility Theory (MAUT) to recommend the best route based on user preferences. Test results show that the WOA algorithm performs better than Simulated Annealing (SA) regarding the maximum number of days for each POI (Point of Interest) visited, fitness value, and execution time.

Paper ID 92

Authors:

Cristanto Sidharta (Bina Nusantara University)*;
Nathaniel Ezra Ardyana Putra (Binus University);
Jonathan F Chandra (Bina Nusantara University);
Marisa Karsen (Bina Nusantara University)

Title:

Analysis of AI's Impact on Purchase Intention on Social Media Platforms

Abstract:

Customer purchase intention is a critical metric in the social media. This research explores the factors influencing purchase decisions on social media platforms, particularly through the lens of Artificial Intelligence (AI) technologies. Utilizing the Stimulus-Organism-Response (SOR) Model, the study investigates how user behavior is impacted by AI technology to purchase intention. There are 5 critical variables are central to this research: AI Network Recommendations, AI Personalized Feed, AI Quality, Consumer Engagement, and Purchase Intention. The SOR model is employed to assess the validity of the hypothesized relationships. Data collected from 409 participants between April - May 2024 was analyzed using SmartPLS 4.0. This study's findings demonstrate that AI features used on social media positively influence purchase intention

Paper ID 94

Authors:

I Made Murwantara (Universitas Pelita Harapan)*;
Pricilia Fiesta Grieco Prasethio (Universitas Pelita Harapan)

Title:

Identifying Suspicious Financial Transaction Using Machine Learning and Phytagorean Tree

Abstract:

Suspicious Financial Transaction Detection (SFTD) is a vital process in recognizing threats and fraudulent transactions. SFTD involves tracking historical and real-time transaction data, posing challenges in identifying true suspicious transactions. Although a rule-based system is used at the Regional Development Bank in Indonesia, its effectiveness remains limited due to the growing customer transactions. This study aims to address this issue using machine learning to reduce false positives while maintaining a manageable false-negative rate. Money laundering stages—placement, layering, integration—are explored, emphasizing the need to integrate illicit funds into legitimate financial systems. This study aims to employ a machine learning model on customer transaction data to enhance detection and prediction of suspicious transaction such as money laundering.

Paper ID 101

Authors:

Justin Yap (Universitas Ciputra)*;
Trianggoro Wiradinata (Universitas Ciputra)

Title:

Safety Helmet Detection Based on YOLOv7 With Super-Resolution Reconstruction

Abstract:

In the construction industry, safety helmets have been extensively utilized to minimize head injuries caused by accidents in the workplace. However, some construction workers continue to work without wearing safety helmets. Conventional surveillance methods such as using video surveillance systems with manual inspections have limitations such as high costs and missed detections. Therefore, target detection methods based on deep learning can be applied to enhance the effectiveness and efficiency of the supervision of safety helmet usage. In this study, a combination of YOLOv7 and SR reconstruction using the ESRGAN architecture is employed to identify the use of safety helmets. The training process from the combination of ESRGAN and YOLOv7 models resulted in precision, recall, F1-Score, and mAP@0.5 of 0.8664, 0.8362, 0.851, and 0.8826 respectively. The proposed method achieves promising performance for automatically overseeing the use of safety helmets in construction areas.

Paper ID 102

Authors:

Naomi Natania Magdalena (Bina Nusantara University);

Elfindah Princes (Bina Nusantara University);

Desman Hidayat (Bina Nusantara University)*

Title:

Unlocking Customer Loyalty: A Study of User Experience in Tokopedia

Abstract:

As competition in the e-commerce market continues to heat up, companies are turning their attention to the key factors that influence customer loyalty. One of these factors is the quality of an app's user interface (UI), which can greatly impact the user experience and ultimately, customer loyalty. In this study, we sought to investigate the relationship between UI and customer loyalty in the context of the Tokopedia application. The quantitative method is used in this study and the respondents are the Tokopedia users. There are a total of 117 respondents in this study. The data are analyzed using SEM-PLS. Our results showed that perceived usefulness, UI/UX, and transaction security have a significant and positive effect on customer satisfaction and customer satisfaction itself affects customer loyalty. Our findings contribute to the existing literature on UI and customer loyalty in the e-commerce industry.

Paper ID 103

Authors:

Jefri Abdurrozak Ismail (PT. Data Sinergitama Jaya Tbk)*

Title:

Architecting Multisite Database Proxy using ProxySQL

Abstract:

This research investigates the implementation of a multisite database architecture utilizing ProxySQL to enhance database availability and resilience. The study focuses on designing and deploying a database system spanning on-premise and cloud environments, with ProxySQL acting as a component for load balancing, failover, and query optimization. The research methodology involves a systematic approach, encompassing literature review, system design, implementation, testing, and analysis. Key findings demonstrate the result of the proposed architecture in achieving high availability, better performance, and enhanced disaster recovery capabilities. The results highlight the potential of ProxySQL as a valuable tool for mitigating database downtime and ensuring business continuity.

Paper ID 104

Authors:

Hery FIK (Universitas Pelita Harapan)*;
Andree E. Widjaja (Universitas Pelita Harapan);
Calandra Haryani (Universitas Pelita Harapan);
Riswan E. Tarigan (Universitas Pelita Harapan)

Title:

A Study of The Implementation of Paylater Feature for Customer Satisfaction Using the Servqual Method in Marketplace Applications in Indonesia

Abstract:

This study investigates how the PayLater feature affects customer satisfaction with their perception of service quality. This research aims to measure the service quality of the PayLater feature to enhance customer satisfaction within marketplace applications in Indonesia. The ServQual method is employed to evaluate service quality in this context. In the research context, customer satisfaction is used as the dependent variable. The study's population consists of all users of marketplace applications in Indonesia who use the PayLater feature. Data collection was conducted using questionnaires, and a sample of 312 respondents was obtained. The results of this study conclude that hypotheses H1, H2, H3, H4, and H6 are accepted, while hypothesis H5 is rejected. The results of this study provide valuable insights for marketplace providers and policymakers to enhance their services and improve the customer experience.

Paper ID 106

Authors:

Ahmad R. Maulana (Universitas Sumatera Utara)*;
Ade Candra (Universitas Sumatera Utara);
Amalia Amalia (Universitas Sumatera Utara)

Title:

The Role of Data Visualization in Improving the Sustainability of Smallholdings

Abstract:

Indonesia is the largest palm oil producer in the world, with smallholder oil palm plantations being a significant contributor. However, information regarding smallholder oil palm plantations is very limited. This research aims to provide an alternative solution by designing a dataset that can be used as a basis for decision-making. This research analyzed data from 2818 smallholders in 64 sub-districts in Sumatra. The level of sustainability was visualized and analyzed using QGIS based on three factors, namely plant age, group status, and certification status. The results show that the districts of Nassau, Sungai Apit, Kerumutan, Batang Asam, and Batang Toru have the highest level, while Batang Lubu Sutam, Salopian, Torgamba, Pematang Bandar, and Bilah Hulu subdistricts have the lowest level of sustainability. The sustainability levels per sub-district were visualized to cluster the level of sustainability per region for large-scale smallholding programs.

Paper ID 107

Authors:

Theresia Ratih Dewi Saputri (Universitas Ciputra Surabaya)*;
Edwin Kurniawan (Universitas Ciputra Surabaya)

Title:

Machine Learning-based Application for Predicting Hearth Disease Risk using CreateML

Abstract:

Heart disease is the leading cause of death in Indonesia. Although predominantly affecting the elderly, it also significantly impacts young and productive individuals. The lack of knowledge about the risks and causes of heart disease contributes to this issue. Furthermore, the high cost of health tests to detect the risk of heart disease increases the problem. Affordable and effective technology is needed to detect heart disease early. This research aims to develop artificial intelligence-based software for detecting heart disease in productive age groups. The method utilizes machine learning algorithms, particularly for classification problems using CreateML. This work can predict heart disease risk using data from more than 300.000 samples from the Centers for Disease Control and Prevention. Using a random forest algorithm, this research achieved 98.2% training and 83% testing accuracy. The generated model was deployed as a mobile application to ensure its usability.

Paper ID 109

Authors:

Roger Amendi (Bina Nusantara University)*;
Erwin Halim (Bina Nusantara University);
Hendry Hartono (Bina Nusantara University)

Title:

Exploring Ethical Implications: Unraveling Factors Influencing Data Governance Awareness Behavior in Generative AI Chatbot

Abstract:

Generative AI chatbots can encourage productivity and optimize work processes with the specific insights provided. The problem is the ethical implications for the privacy and confidentiality of company data that employees carelessly enter into a generative AI chatbot platform. This research aims to study how employees behave when entering company data using a generative AI chatbot based on behavioral intentions on data governance awareness. This research uses quantitative methods like the Partial Least Squares Structural Equation Modeling (PLS-SEM) statistical method. Purposive sampling determines the number of samples, with data collection from February to April 2024. Based on the data collection results, 402 employees in Indonesia who used generative AI chatbots became valid respondents who answered the online questionnaire using Google Forms. The test used nine hypotheses, where the results found that six hypotheses had a significant effect and three hypotheses were not significant.

Paper ID 110

Authors:

Djoni Haryadi Setiabudi (Petra Christian University)*;
Gregorius Budhi (Petra Christian University);
Alfons Sampurno (Petra Christian University)

Title:

Chatbot for Complex Questions in University Admission using Bidirectional Long-Short Term Memory and Convolutional Neural Network

Abstract:

Petra Christian University already has services to answer questions about new student admissions through WhatsApp, email, and Instagram. However, given the many inquiries, not all can be answered quickly, especially the complex and lengthy questions. There has been much research on chatbots for new student admissions, but the chatbots developed have not yet examined how well they can answer complex and lengthy questions. Therefore, this research will contribute by investigating how accurately the chatbot can answer short, medium, and long questions using Bidirectional Long-Short Term Memory and Convolutional Neural Network methods. The results show that the chatbot can answer short questions with the highest accuracy of 93%, but its accuracy drops below 80% when given medium and complex questions.

Paper ID 111

Authors:

Michael Chandra (Universitas Ciputra Surabaya);
Stephanus Eko Wahyudi (Universitas Ciputra Surabaya)*

Title:

Enhancing High School Students Admission Process Through Web-Based Information System

Abstract:

Managing high school students' admission involves some considerably challenging processes to ensure seamless and user-friendly execution of the registration procedures. Thus, using technology in high school students' admission processes has become increasingly pivotal. However, many educational institutions still have yet to use digital technologies and still rely on traditional methods, resulting in slow and inefficient processes and prone to human errors. This research attempted to develop an information system to enhance the process. The Iterative Waterfall model was used to develop the system. Based on the Blackbox Testing, we concluded that the system can facilitate online new student admission, offering a convenient solution for remote registration and addressing issues of disorganized file management at the school.

Paper ID 112

Authors:

Elizabeth Nathania Witanto (Universitas Ciputra Surabaya)*

Title:

Secured e-Voting System Leveraging Blockchain Technology

Abstract:

The traditional voting system is vulnerable to challenges such as vote tampering, voter identity fraud, inability to obtain real-time voting results, and the substantial funds required. Various electronic voting (e-voting) systems developed aim to enhance security and minimize costs. Blockchain technology, with its decentralized and immutable data storage system, has the potential to address the challenges in both traditional and e-voting systems. This paper proposes a framework for developing a secured e-voting system by leveraging blockchain technology. The proposed system aims to achieve four key properties: transparency, system reliability, user authentication, and non-repudiation. By incorporating these features, the framework can overcome challenges such as voter identity fraud and double voting, thereby enhancing the overall integrity and trustworthiness of the voting process.

Paper ID 113

Authors:

Aditya Bimo Pitandoyo (Gadjah Mada University)*;

Lukito Edi Nugroho (Gadjah Mada University);

Bimo Sunarfri Hantono (Gadjah Mada University)

Title:

GIS-based Disaster Preparedness and Mitigation Applications: A Systematic Review on Methods, Features, and Visualization

Abstract:

Natural disasters have been a common concern in many parts of the world. Among various existing solutions to tackle this issue, many researchers opt to develop information systems that could be beneficial for societies to be aware of any disaster and its effects on their surroundings. As many research studies have been done regarding methods, added features, and visualization aspects of disaster applications, a systematic literature review (SLR) can be conducted. The SLR aims to analyze and apprise those aspects to provide knowledge, understanding, and even recommendations for the development and utilization of disaster applications. Among many disaster applications, some employ the Geographic Information System (GIS) as the application framework to present disaster-related information more easily. The result of this review can be useful for people to find and consider the best option for the three aspects of GIS-based disaster application development to improve people's preparedness.

Paper ID 115

Authors:

Mahda Dina Alam Rusbandi (Gadjah Mada University)*;
Silmi Fauziati (Gadjah Mada University);
Guntur Dharma Putra (Gadjah Mada University)

Title:

Techniques for Handling Missing Values in Electricity Data: A Systematic Literature Review

Abstract:

The lack of complete data is a widespread challenge when analyzing authentic, real-world datasets. In fact, the missing values can substantially degrade the precision and dependability of statistical examinations, which are foundational in modeling approaches. Effective imputation methods are essential, particularly for time series data, to maintain data integrity. In this paper, various imputation techniques tailored for electricity data are explored, which examines various methods ranging from traditional statistical approaches to advanced deep learning models. The review highlights the advantages and disadvantages of various methods, with particular emphasis on the effectiveness of techniques like Makima Interpolation and LSTM-BIT in handling missing electricity data with a high number of missing values. The study also discusses the common types of missing data and the relevant evaluation measures used to assess imputation performance.

Paper ID 116

Authors:

Indri S. Rozas (UIN Sunan Ampel Surabaya)*;
Aris Tjahyanto (Institut Teknologi Sepuluh Nopember Surabaya)

Title:

UX Law Implementation at Sevima edLink from Design Science Research Perspective

Abstract:

Usability is a measure of the quality of the user experience when interacting with a product or system. The usability of an LMS is an essential requirement because it significantly influences whether or not student learning is effective. Moodle, one of the most widely used LMS platforms in academic institutions and universities, has been criticized for its low usability. Amidst various challenges for Educational Technology (EdTech) applications in this country, Sevima edLink has managed to thrive over the last five years with a total of 1.6 million registered users and 35,000 active users per day. Over the last five years, as many as 105 publications in Indonesia have discussed the benefits of Sevima edLink in the learning process at their respective institutions. For this reason, it is deemed necessary to research how Sevima edLink developers design interfaces based on appropriate user experience (UX) principles to ensure their acceptance by the Indonesian market.

Paper ID 119

Authors:

Laurentius Kuncoro Probo Saputra (Universitas Kristen Duta Wacana)*;
Restyandito (Universitas Kristen Duta Wacana);
Willy Sudiarto Raharjo (Universitas Kristen Duta Wacana);
Anthonius Adi Nugroho (Universitas Kristen Duta Wacana);
Samuel Ricky Saputro (Universitas Kristen Duta Wacana);
Bryan Rama Putra (Universitas Kristen Duta Wacana)

Title:

IoT Gateway Design for Real Time QR-Code Display Device in Security Monitoring System

Abstract:

Gateway serves as a protocol for the integration and data transmission. Wi-Fi networks are not accessible in all places, so gateways are added to ensure adequate coverage and expand IoT networks. This paper presents the development of an IoT gateway to support a security monitoring system. An evaluation was conducted to determine the optimum gateway locations in the campus area of Universitas Kristen Duta Wacana. The evaluation focused on two wireless modules, namely LoRa SX1278 and nRF24L01. The physical location of node devices are determined based on the location of the guard stations. The locations are chosen to observe the communication performance between gateway devices and nodes. The performance of data transmission is determined by two factors: the time it takes for the transmission to occur and the rate at which the transmission is successfully finished. Based on the findings, we concluded that LoRa SX1278 outperforms the nRF24L01 with an average delivery time of 1.4 seconds.

Paper ID 120

Authors:

Nico Prasetyo (Universitas Ciputra);
Kartika Gianina Tileng (Universitas Ciputra)*

Title:

Design and Development of a Guitar Learning Mobile Web for the Music Department of Rose of Sharon Church

Abstract:

The Rose of Sharon Church in West Surabaya faces challenges such as high demand and limited participant quotas in the guitar teaching classes held at the church. To address these issues, this research aims to develop a mobile web that provides efficient, effective, and easily accessible guitar lessons for church congregants without being limited by the number of teachers and participant quotas. This study uses the Laravel PHP framework for mobile web development, TensorFlow for the guitar chord recognition machine learning model, and MySQL to manage chord and song lyric storage. Featuring simple guitar learning modules, a song library, and recognition of chords played by users, the UMUX questionnaire was also utilized after users tested the mobile web to assess its usefulness. The score obtained was 91.66, indicating that the web-based guitar learning mobile web can effectively address the challenges faced.

Paper ID 121

Authors:

Pravangasta Wahyudi (Universitas Ciputra Surabaya);
Rinabi Tanamal (Universitas Ciputra Surabaya)*

Title:

Design and Development a Web-Based System for Recording Transactions of Contracted Service for Industrial Machine Repair at CV. Elmectro Mandiri

Abstract:

The rapid growth of technology has made the use of information systems a necessity for service companies like CV. Elmectro Mandiri, which specializes in industrial machine repair. The application design is built on a web-based platform using PHP, with the Laravel framework and MySQL database used to facilitate development. This research involves the owner of CV. Elmectro Mandiri using interview techniques and several components and statements from the UMUX item, aiming to design and build a web-based system that can help CV. Elmectro Mandiri record transactions, manage invoices, and document delivery notes. The research results showed a UMUX score of 87.5, meaning the system received an A grade along with satisfactory interview results. These findings indicate that the design and development of the web-based transaction management system successfully managed transactions and delivery notes, and capable of recording transactions at CV. Elmectro Mandiri.

Paper ID 122

Authors:

Erwin Halim (Bina Nusantara University)*;
Decwind Skylar Susanto (Bina Nusantara University);
Annisa Putrian Zahri (Bina Nusantara University);
Willy Candra (Bina Nusantara University)

Title:

Analyzing The Effect of Ease of Use Towards Continuous Use Intention and Satisfaction on E-Government Services in Indonesia

Abstract:

Indonesia, as a growing nation, had shown growth in the usage of digital technology. The problem we found is the challenge of using such a system arose when citizens persisted in expressing skepticism regarding the security and usefulness of online government service applications, leading numerous people to continue using offline government services. This study aims to determine the impact of security and the benefits of online Government on the satisfaction provided to the citizens. Purposive sampling is utilized with Smart-PLS to collect and analyze data for this study. From March to April 2024, a total of 401 valid respondents are collected through Google form, focusing on the Jabodetabek area. SEM analysis performed resulted in eight significant hypotheses, while one is insignificant. The research concluded that the online government application is safe and beneficial, but also shows that the system is hard to use and citizens preferred using it for health related services.

Paper ID 125

Authors:

Erwin Halim (Bina Nusantara University)*;
Michael Jonathan (Bina Nusantara University);
Archibald Kribiantoro (Bina Nusantara University);
Christian Johanes (Bina Nusantara University)

Title:

Analysis of Customer Satisfaction of Using Kios-K Machine in Fast Food Services: Case of Indonesian

Abstract:

Kiosk machines are interactive tablets or touchscreen computers that allow customers to access information and services without direct interaction. The problem in this research is whether the self-service machine Kiosk in fast food service is effective or not and whether it makes all the customers that use it satisfied with the existence of this technology. Some of the users can do it fast, some are not. The data was collected using Google Forms using Purposive Sampling. It was conducted from February until March 2024. The data were collected from 443 respondents, only 369 whom had used the Kios-K Machine. About 439 people around. The research methodology employs Partial Least Squares Structural Equation Modeling (PLS-SEM) through SMART-PLS 4 Software. There are Five variables: Self-efficacy, Ease of use, Usefulness, Perceived Enjoyment, and Satisfaction. The results found that all hypotheses have a significant impact.

Paper ID 130

Authors:

Gregorius Guntur Sunardi Putra (Institut Teknologi Sepuluh Nopember)*;
Adifa Widyadhani Chanda A.W. D'Layla (Institut Teknologi Sepuluh Nopember);
Dimas Wahono (Institut Teknologi Sepuluh Nopember);
Riyanarto Sarno (Institut Teknologi Sepuluh Nopember);
Agus Tri Haryono (Institut Teknologi Sepuluh Nopember)

Title:

American Sign Language to Text Translation using Transformer and Seq2Seq with LSTM

Abstract:

Sign language translation is one of the important issues in communication between deaf and hearing people, as it expresses words through hand, body, and mouth movements. American Sign Language is one of the sign languages used, one of which is the alphabetic sign. The development of neural machine translation technology is moving towards sign language translation. Transformer became the state-of-the-art in natural language processing. This study compares the Transformer with the Sequence-to-Sequence (Seq2Seq) model in translating sign language to text. In addition, an experiment was conducted by adding ResidualLSTM in the Transformer. The addition of ResidualLSTM to the Transformer reduces the performance of the Transformer model by 23.37% based on the BLEU Score value. In comparison, the Transformer itself increases the BLEU Score value by 28.14 compared to the Seq2Seq model.

Paper ID 133

Authors:

Ayub Sugara (University of Bengkulu);
C. Hanami (University of Bengkulu);
A. H. Lukman (University of Bengkulu);
Aninda Wisaksanti Rudiastuti (Badan Riset dan Inovasi Nasional)*;
Zamdial Zamdial (University of Bengkulu);
Bakhtiar Bakhtiar (University of Bengkulu);
Ari Anggoro (University of Bengkulu);
R. Zuhendri (Lestari Alam Laut Untuk Negeri (LATUN));
R. T. Utami (Prof. Dr. Hazairin, SH University)

Title:

Evaluating the Efficacy of Sentinel-2B and Landsat 8 OLI Satellite Imagery for Accurate Mangrove Mapping in Bengkulu City, Indonesia

Abstract:

Remote sensing has been extensively used to map mangrove forests. This study evaluates the accuracy of mangrove classification using Sentinel-2B and Landsat 8 OLI imagery in Bengkulu City, Indonesia. Using vegetation indices and maximum likelihood algorithms, the range of Normalized Difference Vegetation Index (NDVI) values are from 0.1181 to 0.6716 for Sentinel-2B and 0.0003 to 0.5142 for Landsat 8 OLI. Sentinel-2B yielded more precise classification result on mangrove, with an overall accuracy of 84.76%, in contrast to Landsat 8 OLI's accuracy of 65.71%. These results demonstrate the superior performance of Sentinel-2B in mangrove mapping due to its higher spatial resolution.

Paper ID 134

Authors:

Hanif Akbar Ramadhan (Bina Nusantara University);
Elfindah Princes (Bina Nusantara University);
Desman Hidayat (Bina Nusantara University)*

Title:

Consumer Trust and Brand Reputation: Driving Mechanical Keyboard Purchase Intention on Instagram

Abstract:

Mechanical keyboard industry has been growing rapidly as the product changes from only a functional device to a hobby in the community. This study aims to reveal which factors influence purchase intention for mechanical keyboard business based on the use of Instagram social media. This study used a quantitative method by distributing questionnaire to 103 respondents who are following Harakeebs Instagram account as one of the sellers of mechanical keyboards. The data was analyzed using SEM approach with SmartPLS application. The results showed that several variables studied affect the purchase intention and that availability of information does not have a significant impact on brand reputation and brand trust. The results are crucial to help the company to develop its business and raise the purchase intention of the customers.

Paper ID 137

Authors:

Haitham A. Al Hasanat (Khawarizmi University Technical College: KUTC)*;
Omar Alharasees (Budapest University of Technology and Economics);
Dania Alothman (Khawarizmi University Technical College: KUTC)

Title:

Connected Automated Vehicles Entry Capacity on Roundabouts- Case Study Hungary

Abstract:

This study delves into roundabout entry capacity in Hungary, introducing a new model emphasizing the impact of circulating flow and geometric variables. The relationship between estimated entry capacity and various circulating flows and geometric factors is expressed multiplicatively. Central island diameter and splitter island width are identified as key factors, surpassing others. Comparisons with European models validate the new model's reliability, especially at low circulating traffic levels. Additionally, the study explores Connected and Autonomous Vehicles (CAVs) effects on single-lane roundabout capacity. Using adjustment factors from the 2022 Highway Capacity Manual (HCM), the study estimates entry capacity for varying CAV penetration levels, revealing significant increases as CAV levels rise. Central island diameter and splitter island width notably contribute to these increases.

Paper ID 138

Authors:

Omar Alharasees (Budapest University of Technology and Economics)*;
Haitham A. Al Hasanat (Khawarizmi University Technical College: KUTC);
Dania Alothman (Khawarizmi University Technical College: KUTC)

Title:

Public Perception of Autonomous and Shared Autonomous Vehicles: Case Study of Amman

Abstract:

This study evaluates the public perception and adoption potential of autonomous vehicles (AVs) and shared autonomous vehicles (SAVs) in Amman, Jordan. Key factors influencing public perception and adoption include safety concerns, infrastructure readiness, and regulatory frameworks. The research highlights the necessity of governmental support and well-structured regulations. Despite recent advancements in Amman's transportation sector, challenges such as congestion, inadequate public transport, and infrastructure maintenance persist. Significant steps, including enhancing community preparedness and addressing public concerns, are crucial for successful AV and SAV integration. The study offers insights and recommendations to guide policymakers and stakeholders in fostering Amman's sustainable urban mobility ecosystem. Collaborative efforts, pilot programs, and targeted outreach are essential for advancing AV and SAV adoption.

Paper ID 142

Authors:

Atikah Rahayu Mandasari (Universitas Sumatera Utara)*;
Erna Budhiarti Nababan (Universitas Sumatera Utara);
Herman Mawengkang (Universitas Sumatera Utara)

Title:

Long Short-Term Memory (LSTM) Improvement Accuracy Using FastText and Glove for Language Translation Batak – Indonesian

Abstract:

This research discusses the improvement of Long Short-Term Memory (LSTM) model accuracy in translating Batak to Indonesian by utilizing FastText and GloVe embeddings. Traditional LSTM models often struggle with the complexity and richness of underrepresented languages like Batak. By integrating FastText and GloVe, which provide word vectors with deeper semantic meanings, the translation quality can be significantly enhanced. Experimental results show that this approach offers a substantial performance improvement compared to conventional LSTM models, producing more accurate and contextual translations. These findings have the potential to be applied in broader multilingual translation systems and support the preservation and digital accessibility of minority languages.

Paper ID 143

Authors:

Fadilla Kardika Putri (BINUS Online Learning);
Mochammad Rizki Pratama (BINUS Online Learning);
Muhammad Raihan Rafi Al Azharr (BINUS Online Learning);
Yuniarty Yuniarty (BINUS Online Learning)*;
Ferry Hartono (E-Commerce Industry)

Title:

The Influence of Sales Promotion, Attractiveness of Internet Advertising, and App Quality Features on Impulse Buying Decisions for Batik Fashion Products at Tiktok Shop

Abstract:

This study examined generative AI usage among Philippine college students particularly on frequency, devices, reasons, knowledge, trust, perceptions, and challenges. Most students used free AI tools on smartphones due to financial constraints. They used it primarily for homework, idea generation, and research. Less than half felt confident with AI and expressed mixed feelings about its accuracy. Barriers included limited access, lack of teacher support, difficulty understanding outputs, and financial constraints. The study highlighted the need for better access, support, training, and ethical guidelines. Broader concerns included impacts on learning, academic standards, job loss, and privacy. Students viewed AI positively due to peer support. Recommendations are discussed

Paper ID 146

Authors:

Brain Harlan (Universitas Pelita Harapan);
Hendra Tjahyadi (Universitas Pelita Harapan)*

Title:

Minimally Invasive Motor Function Rehabilitation through Digital Twin Technology: A Review

Abstract:

The ongoing quest for better rehabilitation methods for the physically impaired is being advanced by technological improvements in engineering. A recent focus is on Digital Twin (DT) technology, which aims to create precise digital replicas of physical environments. This technology holds promise for connecting the brain with synthetic limbs or supports. Studies indicate that brain signal decoding of motor functions via EEG could lead to non-invasive rehabilitation. With the aid of Artificial Intelligence (AI), DT could predict movements from EEG patterns and apply them to synthetic limbs. This review explores DT's potential for exoskeletons and prostheses, analyzing current technologies relevant to decoding motor function signals. Utilizing DT could significantly enhance the quality of life for individuals by surpassing the capabilities of conventional synthetic limbs.

Paper ID 148

Authors:

Ikrar Adinata Arin (Bina Nusantara University)*;
Bryan Bryan (Bina Nusantara University);
James Michael Wibawa (Bina Nusantara University)

Title:

Analysis of Public Views of The Motor Vehicle Financing Services Information System

Abstract:

This study aims to analyze public perception towards the information system of motor vehicle financing services in the capital of a developing country. The background of this study is the increasing need for motor vehicles among urban communities and the importance of an efficient information system to support financing services. The research method used is quantitative with a sample of people who have used motor vehicle financing services. Data was collected through distributed questionnaires and analyzed. The results show that the majority of respondents have a positive perception of the information system of motor vehicle financing services. Factors such as ease of access, process speed, and system reliability are considered very important and contribute significantly to user satisfaction. However, this study also identifies several obstacles, such as the lack of data security features and limited adequate customer support.

Paper ID 149

Authors:

Ikrar Adinata Arin (Bina Nusantara University)*;
Arsyil Farkhan (Bina Nusantara University);
Fahmi Muhamad (Bina Nusantara University);
Fairuz Thahirah Anjani (Bina Nusantara University)

Title:

Analysis of the Impact of ChatGPT Utilization on the Levels of Laziness and Productivity

Abstract:

This study aims to analyze the effect of using ChatGPT on student laziness and productivity levels. The research focuses on how students utilize ChatGPT for various academic tasks such as research, writing, and problem-solving. Laziness is measured through self-reported procrastination and task avoidance behaviors. Using the Unified Theory of Acceptance and Use of Technology 2 (UTAUT2) model, we examined factors influencing ChatGPT adoption and its impact on academic behaviors. The research method used is quantitative, with data collected through distributed questionnaires to students who actively use ChatGPT. The results show that Habit and Price Value have a significant positive effect on Behavioral Intention, and Behavioral Intention has a significant positive effect on Student Productivity. However, Effort Expectancy, Facilitating Conditions, Hedonic Motivation, Performance Expectancy, and Social Influence have an insignificant negative effect on Behavioral Intention.

Paper ID 150

Authors:

Samuel Lukas (Universitas Pelita Harapan)*;
Regina Maureen Suryaputri (Universitas Pelita Harapan);
Petrus Widjaja (Universitas Pelita Harapan)

Title:

Comparison of Clustering Results using K-Means, Gaussian Mixture Models, Based on Seven Sectors of Country Electricity and Correlation with Gross National Income

Abstract:

Choosing the optimal method for clustering is important. In this research, clustering was carried out against 117 countries based on seven electricity sector indices, using data on 3 time periods 2010, 2012 and 2014. This study compares performance of two clustering methods, namely K-Means and Gaussian Mixture Models (GMM) and verified with clustered by World Bank based on Gross National Income (GNI). The clustering accuracy results using GMM is better than that of K-Means. It is about 66.7 % whereas K-Means 45.3 %. The result is not quite good. Further analysis proves that out of 7 electricity sectors only three of them have a correlation with GNI. They are Electricity Access, Electricity Power Consumption, and Electricity Power Transmission Distribution Losses.

Paper ID 151

Authors:

Christopher Nata (Universitas Pelita Harapan)*;
Nathaniel Frederick (Universitas Pelita Harapan);
Priskila Christine Rahayu (Universitas Pelita Harapan)

Title:

Assembly Line Balancing Optimization using Genetic Algorithm Method Compared to Heuristic Method

Abstract:

This study uses Genetic Algorithm and heuristic method to balance the task of a simple assembly. Nowadays, Industry 4.0 highlights features like the Internet of Things, Services, and Cyber-Physical Systems (CPS). In this context, assembly line balancing is crucial to enhance efficiency. A study was conducted using Genetic Algorithms and heuristics method such as Shortest Processing Time, Largest Candidate Rule, and Ranked Positional Weight. The results showed that the Genetic Algorithm method outperformed the heuristics in production simulation and smoothness. Despite its effectiveness, the Genetic Algorithm method showed minor drawbacks in line efficiency and idle time. Parameters like iteration numbers, mutation rates, and population size influenced the solutions generated. However, the Genetic Algorithm offered multiple optimal solutions and can be considered for improving line performance.

Paper ID 158

Authors:

Azka Dhafin Elhan (Bina Nusantara University)*;
Deo Chuanito (Bina Nusantara University);
Henry Lucky (Bina Nusantara University);
Derwin Suhartono (Bina Nusantara University)

Title:

Detection of Cyberbullying Incidents on the X Social Network

Abstract:

Social media has transformed communication but also enabled cyberbullying, posing significant psychological risks. This study uses Natural Language Processing (NLP) and Bidirectional Encoder Representations from Transformers (BERT) to detect cyberbullying on the X social network. We analyzed a Kaggle dataset of 46,017 labeled tweets through data collection, preprocessing, modeling, and evaluation. Preprocessing involved noise removal, tokenization, padding, and numerical conversion. The BERT model, fine-tuned for binary text classification, captured contextual nuances to identify cyberbullying patterns. Evaluation metrics—accuracy, precision, recall, and F1-score—consistently exceeded 85%. Despite hardware limitations, the fine-tuned model showed slight improvements over preset hyperparameters. Future research should leverage more robust resources to enhance accuracy and reliability. This study promotes proactive strategies for safer online interactions.

Paper ID 159

Authors:

Rafael S. Wibowo (Bina Nusantara University)*;

Alvino Vallian (Bina Nusantara University);

Henry Lucky (Bina Nusantara University);

Derwin Suhartono (Bina Nusantara University)

Title:

Application of Used Car Price Predictor in Indonesia along with Machine Learning Model Comparison and SMOTE

Abstract:

In current times, transportation is crucial. Transportation assists us in our activities. Hence, the people are interested at alternatives such as used cars. In a transaction, product knowledge is important, yet used one for cars is uncommon. After the lift of distancing rule, interest in transport rose. Our purpose is to find how useful a predictor will be in Indonesia for providing the public of knowledge in secondhand car prices. The algorithm aims to help users to market used cars at the right price, preventing fraud. During the study, SMOTE is used to cover for the lack of sample of the dataset. The methods, Linear Regression, Random Forest, and Support Vector Machine to predict the price of used cars and compare its results based on the RMSE, MSE, MAE, R^2 Score. To add, we have chosen an ensemble learning method, XGBoost. With the usage of the above methods, results in the price of the cars not being a simple outcome with set variables being applied with each transaction.

Paper ID 160

Authors:

Ignatius Kennard (Bina Nusantara University)*;

Hansel Hartono (Bina Nusnatara University);

Henry Lucky (Bina Nusantara University);

Derwin Suhartono (Bina Nusantara University)

Title:

Performance Analysis of Regression Models on Predicting Movie Ratings

Abstract:

This research explores the application and performance comparison of various machine learning for movie ratings. This study aims to make a comprehensive comparison in performance between various machine learning models such as XGBoost, Random Forest Regressor, K Nearest Neighbor Regression, Support Vector Regressor and Linear Regression. The dataset used is MovieLens 20M which includes a rating dataset and a movie dataset. We employ a content-based recommendation system in conjunction to applying machine learning models to predict movie ratings based on user meta data. Our methodology involves splitting the data into 70:30 train-test data and evaluating them using Mean Absolute Error (MAE), Mean Square Error (MSE), and Root Mean Squared Error (RMSE). The findings of our research conclude that XGBoost is the superior model which is shown from the RMSE of XGBoost being the lowest (0.8727).

Paper ID 162

Authors:

Farabi Muhammad Alghifari (Bina Nusantara University)*;
Rido Sarwono (Bina Nusantara University)

Title:

The Influence of Automotive Brand Awareness on Purchase Interest through Social Media Usage of TikTok Case Analytics

Abstract:

This study examines the impact of TikTok usage on brand awareness and purchase interest in the automotive industry. Using a sample of 165 active TikTok users, the research finds a strong positive correlation between TikTok engagement and brand awareness ($R^2 = 0.443$) and a significant impact on purchase interest ($R^2 = 0.614$), with brand awareness acting as a mediator. These findings suggest TikTok is an effective marketing tool for increasing brand recognition and consumer interest. The study highlights the importance of incorporating TikTok into digital marketing strategies and encourages further research into long-term brand loyalty effects and optimal content strategies.

Paper ID 165

Authors:

Samuel Lukas (Universitas Pelita Harapan)*;
Aditya R. Mitra (Universitas Pelita Harapan)

Title:

Brute Force Algorithm for Job Shop Scheduling Problem

Abstract:

This paper discusses how to optimize the scheduling of production processes which involve a number of jobs, processes and machines. It is carried out by finding the minimum value of all possible solutions produced to carry out many jobs determined by many processes and followed by many machines. This aims to improve the quality of a company's performance in producing more goods in a faster time. The method approach used is the Brute Force algorithm, where the algorithm was developed to calculate the make-span of all Job Shop Scheduling (JSS) problems provided using 'n' x 'r' x 'q' data. The resulting data is generated in CSV format in simple text form. The algorithms was built using the Python programming language and run on an open source web tool. The results show that there is optimization of the relationship between scheduling time and the number of jobs, processes and machines, and the complexity of program execution, presented in the form of graphs.

Paper ID 169

Authors:

Levana Dhia Prawati (Bina Nusantara University);
Mahda Karina (Bina Nusantara University)*;
Graciella Cherrysca Addy Putri (PT. BCA, Tbk);
Ismi Fathia Rachmi (Bina Nusantara University)

Title:

Reveal the Power of E-Filing and Transform Tax Reporting in Indonesia: using UMEGA analysis

Abstract:

E-filing is a type of tax technology from e-government service in Indonesia that is used for the SPT annual report. The goal of this study is to gain a thorough understanding of the factors that influence individual taxpayers' interest and acceptance of e-filing in five major cities in Indonesia using the Unified Model of Electronic Government Adoption (UMEGA). The method used is quantitative method and the data obtained by using a questionnaire with the number of the respondent as individual Taxpayers in Jakarta, Bogor, Depok, Tangerang, Bekasi. Furthermore, the data was analyzed using SmartPLS and the Structural Equation Model - Partial Least Squares (SEM-PLS) method. This research shows that performance expectancy, effort expectancy, and social influence affect attitude; meanwhile, the perceived risk does not affect attitude, attitude affects behavioral intention, and facilitating conditions affect effort expectancy but does not affect behavioral intention.

Paper ID 170

Authors:

Michael Kristianto (Bina Nusantara University);
Deastri Anggie Shanovera (Bina Nusantara University);
Janette Trijono (Bina Nusantara University);
Ivan Sebastian Edbert (Bina Nusantara University)*;
Derwin Suhartono (Bina Nusantara University)

Title:

Movie Success Prediction Using Machine Learning Models

Abstract:

Every year, a massive number of films are released. Because of the vast investments made in the film industry, anticipating a film's success and minimizing uncertainty early in the film-making process will have a significant influence. Thus, the movie business suffers greatly when a film flops at the box office. Our approach will attempt to forecast a movie's success rate by performing predictive analysis on numerous movie features. This research aims to compare multiple machine-learning techniques for estimating a movie's rating grade among the many movies that exist. Our dataset is extracted from Kaggle which contains data of 7668 movies taken from IMDb (Internet Movie Database) in the form of names of actors and directors, genre, IMDb rating, budget, and others. The implementation results show that the Random Forest and XGBoost (Extreme Gradient Boosting) algorithms are effective.

Paper ID 171

Authors:

Torian Yaphet (Bina Nusantara University);
Made Adhiaksena Wikrama Putra (Bina Nusantara University);
Vicensia Charitas Avianny (Bina Nusantara University);
Ivan Sebastian Edbert (Bina Nusantara University)*;
Derwin Suhartono (Bina Nusantara University)

Title:

Fake Job Vacancy Detection Using Ensemble Voting Classifier

Abstract:

The increase in fake job vacancy information has become a concern for people looking for jobs in the current digitalization era. Survey shows that 79% of job seekers search for job vacancies on the internet. The high demand is being exploited by malicious people, resulting in identity leaks and material losses for job seekers. Author used several machine learning approaches such as Random Forest (RF), Support Vector Machine (SVM), Extreme Gradient Boosting (XGBoost), Extra Trees (XT), and also voting classifier to perform classification on fake job vacancies. In addition, author also use Natural Language Processing (NLP) to perform data cleaning, Term Frequency-Inverse Document Frequency (TF-IDF) for feature extraction, and Synthetic. The designed voting classifier model using XT, SVM, and XGB as base estimators can produce an accuracy of 98.21% and F1 of 77.7%.

Paper ID 172

Authors:

Danang Prihandoko (Bina Nusantara University)*;
M Hamsal (Bina Nusantara University);
Arta M Sundjaja (Bina Nusantara University);
Willy Gunadi (Bina Nusantara University)

Title:

The Mediating Effect of Digital Payment Tools in the Relationship Between Digitalization and Use of Technology to Increase Sales on MSMEs

Abstract:

This research aims to analyze and find out the effect of digitalization and the use of technology with the Quick Response Code Indonesia Standard (QRIS) digital payment system on increasing MSME sales. Data collection was carried out using a questionnaire to 430 MSMEs in South Jakarta. The analytical method used in this research was SEM-PLS with data processing using the smartPLS 4 application. The results showed that the increase in sales was mediated by digital payments with the exogenous variable use of technology significant positive effect but not significant on digitalization. It is hoped that this research will become the basis for further research to be able to examine variables related to the effect of increasing sales on MSMEs. This research is also expected to be a source of information for MSME players so they can adapt to the use of other digital payment systems to increase sales in accordance with current consumer behavior.

Paper ID 173

Authors:

Raden Mas Benediktus Suryo Wicaksono (Universitas Gadjah Mada)*;
I Wayan Mustika (Universitas Gadjah Mada);
Selo Sulistyو (Universitas Gadjah Mada)

Title:

Region-Based People Counting with Embedded System in Smart Building Environment

Abstract:

Smart building applications are growing that there are many kinds of implementations throughout the scope. This kind of application has a purpose to make convenience to humans without interrupting their activities. However, some research only focuses on improving object detection without considering the object's position. In this paper, the authors implement a program to count people based on designated regions in the camera's point of view of the building room. The architecture used in the paper uses RTSP-based IP cameras in each room connected to an embedded system. The embedded system uses the YOLOv4-tiny object detection model combined with KLT tracking. This algorithm is accelerated with Nvidia Deepstream, then outputs another RTSP link from the Deepstream. As a result, a single input can produce 23.2 frames per second (FPS), whereas two inputs can produce 9.3–10.7 FPS with FP16 precision. Two inputs can produce latency at 1-2 seconds with 10 FPS input framerate.

Paper ID 178

Authors:

Nopriadi Saputra (Bina Nusantara University)*;
Thedy Karuna Ernesto (Bina Nusantara University);
Salma Indah Pangesti Pangesti (Bina Nusantara University);
Natalia Natalia (Bina Nusantara University);
Faustina Nethania (Bina Nusantara University);
Elrika Indra (Bina Nusantara University)

Title:

Comparing AI and Expert Opinion for Detecting Technological Trends in Indonesia's Transportation and Storage Industry

Abstract:

The purpose of this study is to determine the impact of ten technological trends on the transportation and storage sector. This study uses a qualitative approach with desk research techniques and interviews to identify the impact of ten technological trends on the transportation and storage industry based on AI and expert opinion analysis. The results of this study show that the transportation and storage industry in Indonesia has adopted various technologies to improve efficiency, with the internet of things, datafication, and artificial intelligence being the most used. Although AI and expert opinion have identified similar trends, there are differences in the level of usage. Experts recommend that transportation companies and storage are more focused on the widespread adoption of AI to improve productivity and continue to explore the potential of ubiquitous computing to drive innovation and competitive advantage in the industry.

Paper ID 179

Authors:

Wahyu Setyobudi (Bina Nusantara University);
Raja Natalius Dava (Bina Nusantara University)*

Title:

The Road to Digitalization : Exploring the Impact of Using Digital Payments and Marketing on Business Sustainability in MSMEs

Abstract:

This study investigates the influence of perceived ease of use (PEU), perceived risk (PR), and perceived benefits (PU) on the intention to use (IU) digital payment and marketing systems in MSMEs in Jakarta. Using bootstrap hypothesis testing with data collected from 239 respondents, the analysis shows that perceived risk has a significant effect on the intention to use digital systems, while perceived ease of use approaches statistical significance, and perceived benefits have no significant effect on user intention. These findings suggest that although users are concerned about the risks associated with digital technologies, perceived ease of use does influence user intention, and perceived benefits are not the primary driver of technology adoption. This study highlights the importance of developers focusing on minimizing perceived risks to increase acceptance and use of digital technologies.

Paper ID 180

Authors:

Wawan Gunawan (Satya Wacana Christian University)*;
Hindriyanto D Purnomo (Satya Wacana Christian University);
Christine Dewi (Satya Wacana Christian University);
Ade Iriani (Satya Wacana Christian University);
Irwan Sembiring (Satya Wacana Christian University);
Erico Darmawan Handoyo (Maranatha Christian University);
Meliana Christianti Johan (Maranatha Christian University);
Daniel Jahja Surjawan (Maranatha Christian University)

Title:

Systematic Literature Review: Disease Classification Modeling Using Deep Learning Algorithms

Abstract:

This research focuses on models and algorithms used in studies of diseases such as HIV/AIDS, tuberculosis, malaria, COVID-19, diabetes, hypertension, heart disease, and cancer. It also looks at long-term management, therapy, and prevention of chronic disease complications. The objective is to achieve a thorough understanding of the algorithms employed for various diseases, aiding in the development of more effective treatment strategies. Various algorithms, such as decision trees, SVM, Random Forest, Naïve Bayes, and neural networks like RNN, LSTM, and CNN, are analyzed. The study finds that deep learning algorithms, when combined with data reduction techniques such as PCA and LDA, show significant results in disease modeling. These techniques enhance efficiency and accuracy in diagnosis, treatment, and prevention. The SLR consolidates findings from multiple studies, offering a comprehensive analysis of data science algorithms related to diseases.

Paper ID 181

Authors:

Syarifah Chaira Zulfa (Universitas Sumatera Utara)*;
Erna Budhiarti Nababan (Universitas Sumatera Utara);
Mohammad Andri Budiman (Universitas Sumatera Utara)

Title:

Customer Segmentation Using Generated Coffee Export Transaction Data

Abstract:

This study uses synthetically generated coffee export transaction data to explore customer segmentation, identifying distinct segments based on purchasing behavior to enhance coffee cooperatives' marketing strategies and efficiency. Real transaction data served as the foundation for generating synthetic data, which was analyzed. The K-means clustering method segmented customers based on Recency, Frequency, and Monetary (RFM) metrics, resulting in distinct groups. The analysis revealed high-value and low-value segments. These insights are crucial for coffee companies to develop effective marketing strategies and personalize services for different segments. Companies can optimize marketing by focusing on high-value customers through personalized services and loyalty programs and targeting low-value customers with tailored promotions and incentives. This study shows that analyzing transaction data helps understand market behavior and enhances business performance in the coffee industry.

Paper ID 182

Authors:

Riza Nidhom Fahmi (Institut Teknologi Sepuluh Nopember (ITS))*;
Ratih Nur Esti Anggraini (Institut Teknologi Sepuluh Nopember (ITS))

Title:

Stock Price Prediction in Panel Data Using Machine Learning, Deep Learning, and Statistics Based on News Sentiment and Technical Indicators (Case Study: IDX)

Abstract:

In the investment journey of a stock investor, stock selection is the most critical issue, which will impact the growth of an investor's assets and portfolio mistakes in choosing shares when investing can cause enormous losses for investors. Stock Price Prediction Research Using statistical methods, Machine Learning, and deep learning in panel data based on News Sentiment and Technical Indicators aims to help investors choose stocks based on the best-predicted results to reduce the risk of mistakes. The data used in this research are stock transaction data, technical indicator data, and stock news data. This research uses the BERT model to process news data into sentiment values. It applies statistical methods with Random Effects, machine learning XGBoost, LightGBM, CatBoost, and deep learning with LSTM models to predict the best stock prices. Based on the results of this research, the Random Effects model performs better in predicting future stock prices.

Paper ID 183

Authors:

Shannen Surya Wibisono (Universitas Pelita Harapan);
Karissa Leviana (Universitas Pelita Harapan);
Timothy Sean Muliadiredja (Universitas Pelita Harapan);
Helena Margaretha (Universitas Pelita Harapan);
Ferry V. Ferdinand (Universitas Pelita Harapan)*;
Jennifer Utomo (Universitas Pelita Harapan)

Title:

Stock Price Prediction on LQ45's Banking Sector Using Long-Short-Term Memory and Convolutional Neural Network

Abstract:

The stock market plays a crucial role in helping countries determine prices and ensuring liquidity. This study aims to develop a more effective method for predicting stock prices, focusing on the banking sector of the LQ45 (BBCA, BBRI, BBNI, BMRI, BBTN, and BRIS) due to its significant influence on the Indonesian market, with a market capitalization of 26.39%. By using Convolutional Neural Network (CNN) and Long Short-Term Memory (LSTM) methods, this research compares their effectiveness in predicting stock prices using data from March 11, 2019, to March 11, 2024. The size of the data window is crucial in forecasting, and for this study, window sizes of 20 and 100 are used for analysis. The results indicate that LSTM shows superior performance. These findings highlight the potential of LSTM in capturing short-term trends for more accurate predictions in the banking sector, assisting investors and analysts in making well-informed investment decisions.

Paper ID 184

Authors:

Laurence Laurence (Universitas Pelita Harapan)*;
Anthony Matthew (Universitas Pelita Harapan)

Title:

Streamlining Meatball Manufacturing: Lean Principles and Efficiency Improvements

Abstract:

Initial observations of a meatball manufacturing company revealed inefficiencies, including defective meatballs and work-in-process accumulation. Research aimed to identify and analyze these inefficiencies, design a future state map, and test improvements using Flexsim software. Focusing on type X meatballs, which constitute 39.63% of sales, calculations showed a total cycle time of 4951.27 seconds and a lead time of 5507.50 seconds, with a takt time of 960 seconds per batch. The drying process was identified as the bottleneck, with the current process cycle efficiency (PCE) at 88.46%, surpassing the 30% threshold for a lean process. Waste was noted in defects, inventory, and motion. The proposed improvement added one operator to the packing workstation, increasing the number to four. This adjustment reduced the average waiting time on the packing rack by 87.62% and increased the total output of finished goods by 19.15%.

Paper ID 185

Authors:

Laurence Laurence (Universitas Pelita Harapan)*;
Agustina Christiani (Universitas Pelita Harapan);
Christopher Alfredo (Universitas Pelita Harapan)

Title:

Innovative Climate Solutions: Simulating the Future with En-ROADS

Abstract:

This study analyzes the climate change system using the En-ROADS tool to prioritize key variables and assess global policy effectiveness. Employing multiple linear regression, LASSO, Ridge, and Random Forest regression methods, the analysis found Random Forest to be the most reliable based on RMSE. The most impactful variables identified were Carbon Pricing, Methane and Other Gases, and Afforestation. Current policy analysis indicates a global focus on transitioning to renewable energy and fostering international cooperation. Despite the potential benefits, carbon pricing is not prioritized due to its economic implications, indicating that global climate change mitigation efforts are still in the early stages.

Paper ID 186

Authors:

Sri Suwarno (Duta Wacana Christian University)*;
Lukas Chrisantyo (Duta Wacana Christian University)

Title:

Gender Classification Based on Fingerprint Using Sobel Filter and Artificial Neural Network

Abstract:

Determining gender based on fingerprints is essential in many critical circumstances. However, a complex procedure is needed to choose reliable features and appropriate methods to get high-accuracy results. This study aims to estimate gender based on fingerprints using simple features to reduce the need for lengthy computation in subsequent processes. We select a small region of interest (ROI) of the fingerprint to create features. The ROI size is 80% of the image size at the center. We base our features on Sobel filters and arrange them into histograms. Furthermore, we classify the resulting histogram using a single-layer artificial neural network (ANN). We tested the model with the Sokoto Coventry Fingerprint Dataset (SOCOFing) datasets. Despite its simplicity, our model has demonstrated a validation accuracy of up to 68.2% on the dataset, which is lower than the results of more complex CNN models. The model accurately predicted males at 71.5% and females at 65.2%.

Paper ID 187

Authors:

Erwin Halim (Bina Nusantara University)*;
Pandu Darmawan (Bina Nusantara University);
Sudiana Sudiana (Bina Nusantara University);
Yuliana Lisanti (Bina Nusantara University);
Liana Sugandi (Bina Nusantara University);
Placide Poba-Nzaou (University of Quebec in Montreal)

Title:

Exploring The Impact of Social Media Adoption to Small Medium Enterprises (SMEs) Performance

Abstract:

An evaluation of the role of social media today reveals that it plays a vital role in current society; by January 2023, active users were at 167 million or 60. This is equivalent to four percent of the population of total Indonesia. This research invites SMEs to engage in the efficient use of social media in the management of challenges. To gather data, this research employs Google Forms to survey 130 actively involved social media users in the Jabodetabek region of Indonesia in May of 2024 with the help of the Purposive sampling technique. Using the research method employing method application software namely SMART-PLS 4 and under employing PLS-SEM, it is established that out of the five variables investigated in this study. Four out of the five hypotheses that were postulated for a corresponding test on the use of social media and as perceived for the ability of its utility, ease of use, technological impact, and compatibility yielded statistically significant outcomes.

Paper ID 188

Authors:

Erwin Halim (Bina Nusantara University)*;
Decwind Skylar Susanto (Bina Nusantara University);
Sudiana Sudiana (Bina Nusantara University);
Yuliana Lisanti (Bina Nusantara University);
Jessicania Windari (Bina Nusantara University);
Ai Ping Teoh (Universiti Sains Malaysia)

Title:

Exploring the Nexus of Website Security and Design for Superior Service Quality, Customer Satisfaction, and Loyalty

Abstract:

The number of internet consumers in Indonesia has increased significantly over the past year. As a result, the prevalence of website-based applications utilized by SMEs continues to rise. Nevertheless, a challenge arose when customers persisted in expressing skepticism regarding the efficacy of online sales via websites, which led to decreased revenue for smaller, developing SME enterprises. This study aims to investigate the impact of front-end website security and design on consumer loyalty and satisfaction. To collect and analyze data for this study, purposive sampling was utilized in conjunction with Smart-PLS. The data collection platform employs a Google form in June 2024, focusing on the Jabodetabek area (Cities in Indonesia), SEM analysis is performed using SMART PLS. There are a total of eight variables in the research model. Five of the seven hypotheses are significant, while the remaining two are insignificant.

Paper ID 189

Authors:

Frederik Gasa (Bina Nusantara University)*;
Sidharta Sidharta (Bina Nusantara University);
Bhekti Setyowibowo (Bina Nusantara University);
Yongkie Angkawijaya (Bina Nusantara University);
Adellya Triagustin (Bina Nusantara University);
Norfarizah Bakhir (Universiti Sains Malaysia)

Title:

Actor and Network Analysis: The Existence of Virtual Public Sphere on YouTube

Abstract:

The 2024 Presidential and Vice Presidential election is a momentum that the public has been waiting for because it will determine the journey of the Indonesian nation for the next five years. Polarization occurs in society because each has a superior candidate. Discussion and debates between fellow supporters cannot be avoided in virtual spaces on social media. This is one of the benchmarks for political participation in society. This participation can also be seen from the public's interest in watching the third Presidential debate which was broadcast on the Metro TV YouTube channel on 7 January 2024. As of 12 February 2024, there were 8.5 thousand likes and 3721 comments on the channel. Researchers used Netlytic.org to find network patterns to find out the visualization and relationships between existing actors. The result was that in the network formed it was found that there was no dominant actor, there were no conversations between them and there were no coherent groups.

Paper ID 190

Authors:

Darren M. Pangesa (Bina Nusantara University)*;
Maria Seraphina Astriani (Bina Nusantara University);
Ida B.K. Manuaba (Bina Nusantara University)

Title:

Study on Object-Relational Mapping (ORM) Data Model Performance Effects in the Oil and Gas Industry

Abstract:

This paper discusses the performance of Object Relational Model data models in managing data for the oil and gas industry within Indonesia. The paper derives from a regulation made by the Indonesian government to standardize the format for data that falls under the category of upstream oil and gas affecting a total of 45 different data types. The paper aims to simulate ORM data models to identify their performance in managing rapidly growing data. The comparisons conducted within the paper are file space, data redundancy, and average operation time. The comparisons will be between normalized and non-normalized data models that are tested over 1000, 10,000, and 100,000 iterations of CRUD operations. A two-way ANOVA will analyze the mean differences between ORM models and database operations (Create, Read, Update, Delete) concerning average operation time. Results indicate that normalized data models perform better in average operation time compared to non-normalized models

.

Paper ID 191

Authors:

Indra Fata Raharja (Bina Nusantara University)*;
Sarah Qonitah (Bina Nusantara University);
Dicky H Syahchari (Bina Nusantara University)

Title:

The Relationship between Social Media Marketing, Product Innovation, and Brand Equity with Mediated Customer Engagement in the Indonesian Packaged Tea Industry

Abstract:

This study examines how social media marketing, product innovation, and customer engagement impact brand equity in Indonesia's packaged tea industry. Using a quantitative survey with 250 respondents, the Structural Equation Model-Partial Least Square (SEM-PLS) method was applied to test validity, reliability, and variable relationships. Findings reveal that social media marketing significantly enhances brand equity, and customer engagement also positively affects brand equity. However, customer engagement does not mediate the relationship between social media marketing and brand equity. Additionally, product innovation has no effect on customer engagement or brand equity. Limited to social media users, this research may not represent all packaged tea consumers in Indonesia. The study underscores the value of digital marketing and product innovation in boosting brand equity, highlighting specific challenges and opportunities in Indonesia's social media marketing landscape.

Paper ID 193

Authors:

David Habsara Hareva (Universitas Pelita Harapan)*;
Sherly Nathasya (Universitas Pelita Harapan)

Title:

Comprehensive Monitoring of Asthma: Evaluating Vital Signs, Sleep Quality, Air Quality, and Psychological Factors

Abstract:

This paper proposes a comprehensive approach to asthma monitoring integrating vital signs, sleep quality, air quality, and psychological well-being. Vital signs assessment, focusing on respiratory rate and oxygen saturation, offers critical insights into disease severity and potential exacerbations. Monitoring sleep patterns is crucial, as disrupted sleep significantly affects asthma control. Air quality monitoring supports proactive management of environmental triggers like allergens and pollutants. Additionally, the study highlights the role of psychological factors such as stress and anxiety in exacerbating asthma symptoms, corroborated by recent research. The study tracked asthma experiences in six subjects over four days using an innovative data collection system. This system included a dedicated mobile application for self-reported psychological assessments, Samsung smartwatches for continuous vital sign monitoring, and Internet of Things (IoT) technology for environmental analysis. By integrating data from these sources, distinct patterns of symptom occurrence and severity were identified for each subject. Findings reveal varied triggers among participants, with psychological factors identified as primary for four individuals and vital sign fluctuations for two. Indoor air quality emerged as a secondary trigger for many. The analysis uncovers a complex interplay of psychological, physical, and environmental factors influencing individual asthma severity. Integrating data from vital sign monitors, sleep trackers, air quality monitors, and mental health assessments empowers patients and healthcare providers to proactively manage asthma. This holistic approach enhances understanding of individual triggers and supports the development of personalized management strategies.

Paper ID 199

Authors:

Naufal Seira Muhammad Farras (Bina Nusantara University)*;
Jason Loderick (Bina Nusantara University);
Hanis Amalia Saputri (Bina Nusantara University);
Azani Cempaka AZ Sari (Bina Nusantara University)

Title:

Exploring Penetration Testing: A Comparative Analysis of Brute Force Directory Tools in Vulnerability Analysis Phase

Abstract:

The rising frequency of cyber threats necessitates advanced security measures. Penetration testing, such as vulnerability analysis, is vital for evaluating and enhancing system security. Brute-force directory tools, such as Dirbuster, FFUF, and Dirsearch, are utilized to discover hidden directories or files on web servers, which may serve as entry points for attacks. Despite advancements, there is a lack of in-depth comparison between these tools. This study evaluates the request speed, execution time, CPU utilization, memory footprint, and detection capabilities. Results show that Dirsearch excels with fastest execution time (1024.87 s), highest request rate (8607 req/s), lowest CPU utilization (101%), and moderate memory footprint (267341 kB), making it the most resource-efficient tool. While all tools identified 16 vulnerabilities, Dirsearch emerges as the optimal choice because of its superior performance and efficiency, particularly in resource-constrained scenarios.

Paper ID 200

Authors:

Felix Nathanael Tjahjono (Universitas Kristen Duta Wacana)*;
Matahari Bhakti Nendya (Universitas Kristen Duta Wacana);
I Kadek Dendy Senapartha (Universitas Kristen Duta Wacana);
Tasya Setyo Harwati (Universitas Kristen Duta Wacana);
Kenny Ivander Jovan (Universitas Kristen Duta Wacana)

Title:

Node-Based Mapping for Augmented Reality Indoor Navigation

Abstract:

Developing an indoor navigation system is crucial because it can help users find their way in an unfamiliar environment. The development of indoor navigation currently leads to the creation of node-based mapping. However, the creation of environmental mapping for Augmented Reality (AR) Indoor Navigation systems still has to be done inside the development environment, and it is limited to dynamically changing another environment in runtime. Therefore, this research will improve AR Indoor Navigation by adding node mapping. The test method used is the AR Checklist. The system testing results using the AR checklist show an effectiveness score of 45%, user satisfaction of 36%, and efficiency of 43%.

Paper ID 202

Authors:

Tasya Setyo Harwati (Universitas Kristen Duta Wacana)*;
Matahari Bhakti Nendya (Universitas Kristen Duta Wacana);
I Kadek Dendy Senapartha (Universitas Kristen Duta Wacana);
Yuan Lukito (Universitas Kristen Duta Wacana);
Felix Nathanael Tjahjono (Universitas Kristen Duta Wacana);
Kenny Ivander Jovan (Universitas Kristen Duta Wacana)

Title:

Usability Evaluation Of Augmented Reality Indoor Navigation : A System Usability Scale Approach

Abstract:

Indoor navigation is increasingly important as most people spend time inside buildings. Augmented reality (AR) technology has changed the way people navigate indoors. Now they can see digital elements such as building floor plans in real-time, which makes the indoor navigation experience interactive and informative. This research uses the System Usability Scale (SUS) method to assess the usability of the application. based on the results obtained, the average sus value is 66,7. This can be interpreted that the application needs to be improved to improve user experience.

Paper ID 203

Authors:

St. Tuhpatussania (Universitas Amikom Yogyakarta)*;
Ema Utami (Universitas Amikom Yogyakarta);
Kusrini Kusrini (STMIK AMIKOM Yogyakarta);
Kumara Ari Yuana (Universitas Amikom Yogyakarta)

Title:

Automatic Question-Answer Generation for Education on Indonesian Texts : A Review of Methodologies, Dataset and Evaluation Metrics

Abstract:

The advancement of research in the Automatic Questions and Answers Generation (AQAG) is notable, with significant strides being made. Diverse methodologies have been employed across different languages, each showcasing distinct traits that necessitate methodological adjustments for effective question answering. The systematic literature review (SLR) that has been developed may serve as a valuable asset for informing future research endeavors focused on formulating inquiries within Indonesian textual contexts. The literature search process, conducted through platforms such as IEEE Xplore, Springer Link, and Science Direct, yielded 63 relevant studies using keywords like Indonesian text question generation, and question and/or answer generation. The inclusion criteria applied a search from the years 2022 to 2024, while the exclusion criteria filtered out AQAG-related articles using text datasets and reputable journals, as well as studies in languages other than Indonesian.

Paper ID 204

Authors:

Wenti Ayu Wahyuni (Universitas Amikom Yogyakarta)*;
Arief Setyanto (Universitas Amikom Yogyakarta);
Ema Utami (Universitas Amikom Yogyakarta);
Kusrini Kusrini (STMIK AMIKOM Yogyakarta)

Title:

Feature Extraction Techniques for Patterned Images: A Systematic Literature Review

Abstract:

This research aims to conduct a systematic review of feature extraction techniques in patterned images. For instance, statistical techniques are used for their simplicity and effectiveness. Additionally, deep learning techniques have succeeded in automatically analyzing image types from various fields based on neural network architectures, particularly CNN. Recent trends also show that combining traditional methods with deep learning, such as GLCM + Autoencoder and Haralick + Autoencoder, achieves the highest results, with a performance of 99.89%. This research states that although each technique has its pros and cons, deep learning techniques tend to be the primary choice for complex and high-precision feature extraction. The integration of classical methods with deep learning technology offers significant potential for further advancements in feature extraction for patterned images.

Paper ID 205

Authors:

Mangasa A. S. Manullang (Universitas Sumatera Utara)*;
Poltak Sihombing (Universitas Sumatera Utara);
Mahyuddin K. M. Nasution (Universitas Sumatera Utara)

Title:

Enhancing Heart Rate Detection Accuracy Through the Kalman Filter Algorithm

Abstract:

Precise heart rate detection is vital for early diagnosis of heart conditions, influenced by unhealthy lifestyles, stress, pollution, and nutritional imbalances. This study advocates using the Kalman Filter Algorithm to improve heart rate monitoring accuracy, addressing instability and inaccuracies. Comparative analysis shows error rate reduction from 8.95% to 2.69% with the Kalman Filter. It also highlights faster execution times in heart rate calculations, regardless of physical activity levels, demonstrating the algorithm's robustness. The research recommends further enhancements, such as integrating sensors for systole and diastole detection and exploring alternative algorithms. These findings highlight the methodology's potential to advance health monitoring technologies, enabling more reliable and efficient management of heart diseases. This research contributes to better overall health and quality of life for at-risk individuals, promoting a healthier society.

Paper ID 206

Authors:

Daffa Prakoso Hadi (Bina Nusantara University)*;
Rido Sarwono (Bina Nusantara University)

Title:

Digital Marketing Benchmark Between Cafes in Asean: A Systematic Literature Review

Abstract:

The coffee industry in Asia is experiencing rapid growth, driven by evolving consumer preferences and the widespread adoption of digital technologies. This systematic literature review focuses on Indonesia (with a special emphasis on Brownfield Coffee), Singapore, the Philippines, and Vietnam in order to assess digital marketing methods among cafés in these Asian nations. The review looks at the SOPs and service protocols of coffee shops, evaluates the effect of digital marketing on the development of brands and the growth of the sector, and looks at creative business plans used by coffee shops in various nations. This study offers significant insights into the unique digital marketing landscape of Asian cafés by synthesizing previous literature. It also provides a thorough baseline for industry stakeholders and lays the groundwork for future research.

Paper ID 207

Authors:

Yuxin Fang (Chongqing University)*;
Fan Yang (Chongqing University);
Wei He (Chongqing University);
Pengbo Wang (Chongqing University);
Zhenyou Liu (Chongqing University);
Wei Zhang (Chongqing University)

Title:

An Adaptive Electric Field Stereotaxis Method for Brain Surgical Navigation

Abstract:

Intracranial invasive surgeries cannot rely on simple endoscopic navigation, and existing intraoperative navigation methods do not satisfy the requirements for real-time performance and high precision. In this study, we propose an adaptive method for real-time, high-precision navigation of the brain that is adaptable to various head characteristics. This study investigates the effects of different skull and brain conductivities on navigation accuracy. The electric field stereotaxis (EFS) method is a technique that uses a simple electric field to position and navigate invasive surgical instruments. A multilayer simulation experiment and navigation tests on various head models with different conductivities were conducted to validate the proposed method. Results indicated that when the conductivity of the skull was doubled, the positioning accuracy improved by 31.3% using adaptive method. The proposed approach significantly improves the applicability and accuracy in diverse scenarios.

Paper ID 208

Authors:

Agus Sundari (Universitas Sumatera Utara)*;
Maya Silvi Lydia (Universitas Sumatera Utara);
Muhammad Anggia Muchtar (Univeristas Sumatera Utara)

Title:

Customer Segmentation Based on Recency, Frequency, Monetary, Variety and Duration (RFMVD)

Abstract:

In banking, maintaining customer retention and satisfaction is crucial. Effective customer segmentation is a strategic tool to enhance loyalty and business performance. This research helps banks develop strategies to retain customers and improve services based on bill payment transactions. The data used is from 2023, involving bill payments like electricity, water, telephone, and internet bills, totaling 702,174 rows. K-Means clustering groups customers by recency (last transaction), frequency (number of transactions), monetary (amount spent), variety (types of bills), and duration (average time between transactions) (RFMVD). The segmentation results in three groups: passive, loyal, and VIP customers. The silhouette score for this segmentation using K-Means clustering is 0.7303, indicating a good grouping with the correct number of clusters.

Paper ID 209

Authors:

Nicholaus Hendrik Jeremy (Bina Nusantara University)*;
Matthew Alam (Bina Nusantara University);
Justin Tristan Tirtawijaya (Bina Nusantara University);
Jonathan Samuel Lumentut (Bina Nusantara University)

Title:

Optimizing Sarcasm Detection through Various Input Methods in Text Data

Abstract:

This paper explores the intricacies of sarcasm detection using a BERT-based model, focusing on how different input methods impact detection accuracy. Despite limitations posed by a small-sized dataset, the study fine-tunes BERT to reveal valuable insights into its performance and adaptability in sarcasm detection tasks. By experimenting with various data input formats and configurations, the research highlights the strengths and weaknesses of each method, contributing to the development of more robust and accurate sarcasm detection systems in natural language processing. The findings serve as a groundwork for future research, emphasizing the importance of input methods in optimizing BERT for sarcasm detection.

Paper ID 210

Authors:

Jefri Junifer Pangaribuan (Universitas Pelita Harapan)*;
Romindo Romindo (Universitas Pelita Harapan);
Aditya R Mitra (Universitas Pelita Harapan);
Okky Putra Barus (Universitas Pelita Harapan);
Sai Prashanth (Universitas Pelita Harapan)

Title:

American Sign Language Alphabet Recognition Using Convolutional Neural Network

Abstract:

Non-verbal communication involves transmitting information through body language, facial expressions, and gestures. Smiling when meeting someone can indicate friendliness, acceptance, and openness. Unlike verbal communication, which uses language to convey information through text, speech, or sign language, nonverbal communication relies on physical expressions and gestures. American Sign Language (ASL) is widely used in the United States, second to English and Spanish. Technological advancements have enabled the recognition of sign language through machine learning. Machine learning, a method in information technology, allows computers to study data patterns to produce models for classification tasks like recognizing text, sound, and images. Using Convolutional Neural Networks (CNN), researchers achieved a training accuracy of 93.67% and a validation accuracy of 96.85% for a model trained for 100 epochs with TensorFlow.

Paper ID 211

Authors:

Nicholaus Hendrik Jeremy (Bina Nusantara University)*;
Nicole Minar Widjaja (Bina Nusantara University);
Bryan Alvis Xavier Halim Chandra (Bina Nusantara University);
Jonathan Samuel Lumentut (Bina Nusantara University)

Title:

Rice Disease Detection and Classification Using Mask R-CNN and DenseNet

Abstract:

Rice is an essential crop in the world food supply. As the consumption of rice grows, its production has fallen due to diseases. These diseases are able to spread quickly, leading to outbreaks that cause major yield loss. It is important to identify the disease quickly before it spreads out. However, most rice disease classification model is that the training uses datasets containing images with a single leaves. This is unrealistic as it is cumbersome to take a picture of each leaves one by one. This paper proposes the use of segmentation using Mask R-CNN, this will allowed the model to focus on identifying key features of the rice disease. Then, the resulting segmented datasets will be compared with the original datasets using the classification model Densenet. The result shows an increased in F1 score by 8,22%, from 77,91% to 86,13% . This proves the idea of image segmentation using Mask-RCNN is able to improve the accuracy and performance of image classification models.

Paper ID 212

Authors:

Chelsea Venusha Laurent (Universitas Pelita Harapan);
Helena Margaretha (Universitas Pelita Harapan);
Ferry V. Ferdinand (Universitas Pelita Harapan)*

Title:

Analyzing The Influence of Weather and SocioEconomic Factors on The Spread of Dengue Fever in Countries in The Americas

Abstract:

Dengue fever, affecting nearly four billion people globally, has been a major concern since the 1960s. This study applies the Generalized Linear Model (GLM) with Poisson distribution to analyze the impact of weather and socioeconomic factors on dengue cases in Brazil, Mexico, and Saint Kitts and Nevis, chosen via K-Means clustering. Using annual data from 1980 to 2022, the GLM models dengue cases against weather and socioeconomic factors, reduced using Principal Component Analysis (PCA). The results show the GLM effectively tracks actual data trends and highlights the significant impacts of weather and socioeconomic factors on dengue cases. Four components affect Brazil and Mexico, while five affect Saint Kitts and Nevis. Identifying these variables aids each country in addressing factors influencing dengue fever.

Paper ID 213

Authors:

Maria Seraphina Astriani (Bina Nusantara University)*

Title:

The Prospect of Combining NFC Technology with Hologram Projection for Early Childhood Education

Abstract:

Near Field Communication or NFC is a subset of Radio Frequency Identification which enables information storage and retrieval. Its application in education remains limited. Researcher aims to combine NFC technology with hologram projection to enhance engagement and interactivity in learning. Since children often struggle to remain still during conventional learning process, there is a hope that holograms will make the learning process more interesting. The researcher uses the toy as a medium because the target is for children in early childhood education. Students can interact with smart toys while viewing educational material through hologram projection. This research contributes to Information and Communication Technology by integrating NFC to create interactive smart toys and holograms projection. Tests have demonstrated the feasibility of combining NFC technology with hologram projection by using NFC tag, reader, smartphone, and box with transparent panel

Paper ID 215

Authors:

Ranty Deviana Siahaan (Institut Teknologi Del)*;
Arlinta Barus (Institut Teknologi Del);
Paulina Panjaitan (Institut Teknologi Del);
Vistar Rajagukguk (Institut Teknologi Del)

Title:

Optimizing User Experience: Evaluation of Usability and Cognitive Walkthrough on Web DECART

Abstract:

The DECART website is a publication forum for the results of collaborative discussions between the Institut Teknologi Del and several international partners. This website requires good usability design to ensure information is delivered according to user needs. Therefore, it is necessary to redesign the website using a user-centred design approach and evaluation that focuses on website usability using NAU and CW so that the usability aspect can be improved. Research evaluation was carried out by inspection by three experts in the UI/UX field, and an online questionnaire with 5 Nielsen categories was distributed to 20 representative respondents to measure the website's usability score. Based on the evaluation, it was found that there was an increase in the usability score after improvements were made based on expert inspection. Decart website usability after being redesigned and evaluated based on 5 Nielsen categories, including Good to Very Good usability levels.

Paper ID 216

Authors:

Arnold Aribowo (Universitas Pelita Harapan)*;
I Made Murwantara (Universitas Pelita Harapan)

Title:

Deciphering Key Features in Online Buying Session Prediction Using Logistic Regression and Naive Bayes

Abstract:

This paper explores the key factors influencing online buying session prediction using nomogram analysis with Logistic Regression and Naive Bayes models. We analyzed a dataset containing various attributes of online shoppers. Our results underscore that the Logistic Regression has superior capability for both True and False targets in terms of accuracy (0.883) and AUC (0.897). While Naive Bayes performs better for the True target with an F1 Score of 0.555, Logistic Regression demonstrates superior performance for the False target with an F1 Score of 0.934. Nomogram analysis revealed that for Naive Bayes, page values, exit rates, and bounce rates are the most significant factors, while for Logistic Regression, page values and product-related features (ProductRelated and ProductRelated_Duration) are the most significant. Visualizing these key factors through nomograms helps interpret their relative importance to support the accuracy and interpretability of machine learning predictions.

Paper ID 217

Authors:

Mutiara Marpaung (Universitas Pelita Harapan)*;
Pujianto Yugopuspito (Universitas Pelita Harapan)

Title:

Blockchain-based Coal Mining Concession Production Monitoring System

Abstract:

This research investigates the application of blockchain technology in coal supply chain production and selling, with a specific focus on overcoming supervisory challenges in Indonesia's coal industry. The research involved developing a prototype blockchain-based monitoring system and conducting a comparative security analysis between systems with and without blockchain integration. Results demonstrated a complete elimination of the blockchain-based system's critical, high, low, and informational vulnerabilities, highlighting its superior security capabilities. This study underscores the transformative potential of blockchain technology in enhancing the security, transparency, and efficiency of coal supply chain management, advocating for its broader adoption in the industry to foster accountability and sustainable development.

Paper ID 218

Authors:

Gwenda Tannia Suryasamudra (Bina Nusantara University);
Nurul Farhanah Bt Mohd Idres (University Malaysia Pahang);
Jolin Lee (Bina Nusantara University);
Valentheresia Valentheresia (Bina Nusantara University);
Gunawan Wang (Bina Nusantara University);
Anderes Gui (Bina Nusantara University)*

Title:

Utilizing Augmented Reality to Improve Customers' Purchase Intention in Retail Furniture Applications in Indonesia

Abstract:

The objective of this study is to examine the factors that impact the purchasing of furniture products in Indonesian retail settings through the use of Augmented Reality. The authors constructed a theoretical framework by synthesizing information from multiple journals and books on augmented reality, business, and information systems. In order to evaluate the suggested hypotheses. The data was presented descriptively using SPSS. SmartPLS 4 used to perform hypothesis testing. This research journal is a unique project that utilizes multiple studies to create a comprehensive model for comprehending the elements that affect the purchasing of furniture products in retail settings through the application of Augmented Reality. This study found that product perception, entertainment and utilitarian experience are factors influencing purchase intention.

Paper ID 222

Authors:

Ferawaty Ferawaty (Universitas Pelita Harapan)*;
Mangasa Manullang (Universitas Pelita Harapan);
Richard Hanitio (Universitas Pelita Harapan);
Mangasa A. S. Manullang (Universitas Sumatera Utara)

Title:

Fake News Classification Using SVM And Logistic Regression Methods

Abstract:

Digital media has become a platform for people to obtain information quickly in this digital age. Through digital media, fake news can be quickly and easily spread to the public, causing anxiety, conflict and harm to the public. Therefore, there is a need to detect and classify hoax news accurately. This research aims to create a classification model using SVM and Logistic Regression methods. The dataset used in this research consists of 5882 news, with 2893 fake news and 3039 real news. The dataset goes through preprocessing, TF-IDF transformation, training the Logistic Regression model to find the initial classification probability, and training the linear kernel SVM model to find the final classification. The model was then tested on the tested data. The results showed that the model has an accuracy of 96.4%, a precision of 96.7%, a sensitivity of 95.7%, and an F1-score range of 96.2%. These results show that the SVM and Logistic Regression methods are effective in classifying fake news

Paper ID 224

Authors:

David H Hareva (Universitas Pelita Harapan)*;
Vanessa Chriszella Rasubala (Universitas Pelita Harapan);
Benny Hardjono (Universitas Pelita Harapan)

Title:

Diabetes Management through Mobile Applications: A Comprehensive Approach to Health Management

Abstract:

Diabetbuddy, a mobile app for diabetes management, helps users track blood sugar, analyze trends, and receive personalized recommendations based on their data. This guidance empowers users to understand what impacts their sugar levels and make informed choices for better health. Usability testing and real-world trials confirm the app's effectiveness in supporting diabetes self-management.

Paper ID 229

Authors:

Mardi Turnip (Universitas Prima Indonesia)*;
Immanuel Putra (Universitas Prima Indonesia);
Desta Telaumbanua (Universitas Prima Indonesia);
Albert Nicol (Universitas Prima Indonesia);
Abdi Dharma (Universitas Prima Indonesia);
Delima Sitanggang (Universitas Prima Indonesia)

Title:

Early Identification of Potential Heart Abnormalities with Decision Tree Method

Abstract:

Heart abnormalities are serious health problems that require proper diagnosis and treatment. This study aims to identify potential heart abnormalities using the Decision Tree method with clinical data of user electrocardiograms used as input in model formation. In this study, 30 subjects using a portable ECG system were involved. The test results showed that the Decision Tree model was able to identify potential heart abnormalities with a high accuracy rate of 97%. This will help various parties in early detection of heart problems in each user, so that treatment or intervention can be done faster.

Paper ID 231

Authors:

Lily P. Dewi (Petra Christian University)*

Title:

CoRun: Application for Coaching in Indorunners Community

Abstract:

The Indorunners is an open community in which running coaches and trainees can discuss various training programs in running exercises. As the number of members increases, coaches find difficulty in monitoring training progress and providing training portions to each member. Likewise, trainees need to manually submit training progress reports every day and remember their own training schedules. This research proposes a system where coaches and runners can connect, namely CoRun. Coaches can create customize running exercise for trainees, and running performances can be recorded. The technologies used in this research are SwiftUI, HealthKit framework and node.js. Based on post-testing survey, 66.6% respondents strongly agreed that this CoRun was able to improve coaching efficiency, 26.6% users agreed, and 6,6% respondent felt neutral.

Paper ID 233

Authors:

Nurima Nur Lumbantoruan (Universitas Prima Indonesia)*;
Arico Sempana Ginting (Universitas Prima Indonesia);
Ruth Marsaulina Simanjuntak (Universitas Prima Indonesia);
Delima Sitanggang (Universitas Prima Indonesia);
Yennimar Yennimar (Universitas Prima Indonesia);
Dhanny Rukmana Manday (Universitas Prima Indonesia);
Anita Christine Sembiring (Universitas Prima Indonesia)

Title:

Application of Decision Tree Algorithm in Classifying the Level of Impulsivity in EEG Signals

Abstract:

Impulsivity is the tendency to act spontaneously without proper planning. Everyone has different levels of impulsivity, influenced by factors such as genetics, environment, and psychological state. Measuring and detecting impulsivity is crucial due to its substantial impact on various aspects of an individual's life. The factors that influence impulsivity levels include the social environment, stress levels, mental health, and genetic factors. People with high levels of impulsivity tend to make quick decisions without considering risks, have difficulty restraining themselves, act on impulse, have difficulty maintaining focus for long periods, and often take unnecessary risks. The level of impulsivity reflects how often a person acts without thinking about the impact of their actions.

Paper ID 237

Authors:

Triandes Sinaga (Universitas Sumatera Utara)*;
Ade Candra (Universitas Sumatera Utara);
Bedy Purnama (Telkom University)

Title:

Utilizing Fine-Tuning ResNet-18 For Acute Leukemia Diagnosis From Blood Smear Images

Abstract:

This study explores fine-tuning ResNet-18 to enhance the accuracy of acute leukemia diagnosis from blood smear images. Early detection is crucial for patient outcomes, but the application of ResNet-18 in this context has been underutilized. We propose fine-tuning ResNet-18 to increase diagnostic precision using datasets from RSUP Haji Adam Malik Medan and Università degli Studi di Milano Statale. The model achieved 99.12% accuracy on validation and test datasets, with excellent precision, recall, F1-score, and AUC-ROC. Comparative analysis with non-fine-tuned ResNet-18, VGG-16, and MobileNetV2 demonstrated the superiority and stability of fine-tuning, highlighting its importance in improving diagnostic model reliability.

Paper ID 238

Authors:

Okky Putra Barus (Universitas Pelita Harapan)*;
Felix Billie (Universitas Pelita Harapan);
Romindo Romindo (Universitas Pelita Harapan);
Jefri Junifer Pangaribuan (Universitas Pelita Harapan);
Ade Maulana (Universitas Pelita Harapan)

Title:

Obesity Prediction: K-Nearest Neighbor vs. Support Vector Machine

Abstract:

Obesity, a significant driver of non-communicable diseases and mortality, presents a growing health concern, with Indonesia witnessing a concerning rise in prevalence. This study compares the efficacy of K-Nearest Neighbor and Support Vector Machine algorithms in predicting obesity, aiming to identify the superior approach. Utilizing a dataset of 1822 patient records with 17 attributes, a 70/30 train-test split was employed within the Orange Data Mining framework. Our findings demonstrate that KNN achieved a higher accuracy level of 98.2% compared to SVM's 94.3%. Furthermore, KNN exhibited a lower error rate in the confusion matrix analysis, indicating its superior performance in accurately classifying obesity cases. This suggests that KNN holds promise as a more reliable method for obesity prediction, potentially aiding early detection and intervention strategies.

Paper ID 239

Authors:

John Paul P. Miranda (Don Honorio Ventura State University)*;
Joseph Alexander Bansil (Don Honorio Ventura State University);
Emerson Fernando (Don Honorio Ventura State University);
Almer Gamboa (Don Honorio Ventura State University);
Hilene Hernandez (Don Honorio Ventura State University);
Myka Cruz (Don Honorio Ventura State University);
Roque Francis Dianelo (Don Honorio Ventura State University);
Dina Gonzales (Don Honorio Ventura State University);
Elmer Penecilla (Don Honorio Ventura State University)

Title:

Prevalence, Devices Used, Reasons for Use, Trust, Barriers, and Challenges in Utilizing Generative AI among Tertiary Students

Abstract:

This study examined generative AI usage among Philippine college students particularly on frequency, devices, reasons, knowledge, trust, perceptions, and challenges. Most students used free AI tools on smartphones due to financial constraints. They used it primarily for homework, idea generation, and research. Less than half felt confident with AI and expressed mixed feelings about its accuracy. Barriers included limited access, lack of teacher support, difficulty understanding outputs, and financial constraints. The study highlighted the need for better access, support, training, and ethical guidelines. Broader concerns included impacts on learning, academic standards, job loss, and privacy. Students viewed AI positively due to peer support. Recommendations are discussed.

Paper ID 242

Authors:

Evander Banjarnahor (Universitas Pelita Harapan)*;
Jefri Junifer Pangaribuan (Universitas Pelita Harapan);
Okky Putra Barus (Universitas Pelita Harapan);
Romindo Romindo (Universitas Pelita Harapan)

Title:

Deep Learning in Image Classification Using Modified ResNet50 and Texture Features for Lung Cancer Detection

Abstract:

According to WHO data, in 2020 there were 30,843 deaths from lung cancer in Indonesia. Some of the factors that lead to lung cancer are smoking, air pollution, and an unhealthy diet. Early detection with a lung CT scan is critical in finding treatment alternatives and increasing the patient's life expectancy. Screening and diagnosis by Pulmonologist takes a long time, but can be accelerated with computational techniques and reduce the cost. This study proposes a deep learning-based lung cancer detection method. Researchers compared the performance of ResNet50, ResNet50V2, and a modified model that combines ResNet50V2 with GLCM texture features. The models were simulated to classify lung CT scan images into normal, benign, or malignant. From the simulation results, it was found that the ResNet50V2 with GLCM achieved the highest accuracy at 82%, 82% sensitivity, and 90% specificity with processing each step for 71.32 seconds on 15% testing data.

Paper ID 244

Authors:

James Neil B Mendoza (Tobruk University)*;
Dorothy Buhat-Mendoza (Tobruk University);
Jocelyn Ampaguey (Tobruk University)

Title:

Development of RLE Scorer Web App for College of Nursing at Tobruk University

Abstract:

The primary purpose of this study is to design and develop an RLE Scorer web application system. The application's main goal is to make electronic recording and computation easier while promoting technological adaptation. The app will be used for 1st school year of 1st and 2nd-semester Related Learning Experience (RLE) procedures of College of Nursing students at Tobruk University. The methodology used systems analysis and design procedures basing the system development on a context diagram while facilitating an agile model with focus on rapid application development (RAD) for faster creation of the system. The system was created using the XAMPP framework, with PHP as the backend programming language, while HTML 5 and Bootstrap 5 were used for frontend design, the database used was MySQL.

Paper ID 248

Authors:

Ricky S. Satria (Bina Nusantara University)*;
Jonathan Timothy Christian (Bina Nusantara University);
Kelven Jaya Kristanto (Bina Nusantara University);
Tanty Oktavia (Bina Nusantara University)

Title:

The Effect of Mobile Service Quality Dimensions in Food and Beverage Mobile Applications on Customer e-Satisfaction in Indonesia

Abstract:

This research examines the impact of mobile service quality on customer e-satisfaction in Indonesia's food and beverage mobile application sector. Using a quantitative methodology, data were collected via questionnaires from 400 active users through purposive sampling. The study found that application design, ease of use, privacy, and contact significantly enhance mobile service quality. Improved service quality positively correlates with higher customer e-satisfaction. The research encourages stakeholders in Indonesia's food and beverage industry to focus on these quality dimensions to boost customer e-satisfaction.

Paper ID 249

Authors:

Faros Zaim (Sepuluh Nopember Institute of Technology)*;
Apol Subriadi (Sepuluh Nopember Institute of Technology)

Title:

Information Technology, Organizational Culture, and Portfolio Management: A Measurement Model

Abstract:

The COVID-19 pandemic accelerated the adoption of Information Technology (IT) solutions in manufacturing organizations. This study examines the impact of IT investment on organizational culture and company performance through an IT portfolio management approach. A measurement model was developed and validated using a case study in a manufacturing company. Results indicate that IT enhances productivity, collaboration, innovation, and security, thereby strengthening organizational culture. Furthermore, IT facilitates data-driven decision-making, fosters innovation, and improves collaboration, positively impacting company performance. This study highlights the dual role of IT as a driver of operational efficiency and a catalyst for cultural change, ultimately contributing to long-term company growth and success.

Paper ID 254

Authors:

Alexander Setiawan (Petra Christian University)*

Title:

Gold Price Administration and Prediction Application Using Moving Average Method

Abstract:

This research focuses on creating an administration and gold price prediction application using the Moving Average method for The Gold Shop Company. This application is designed to assist the store in managing store administration data, managing gold stocks, and predicting future gold prices by implementing the Simple Moving Average (SMA) method based on historical gold price data. Application testing is carried out using the User Experience Questionnaire (UEQ) method for the mobile version of the application. The implementation of the simple moving average method in predicting gold prices is also measured for accuracy by calculating the error on each price prediction data using the Mean Absolute Percentage Error (MAPE) method approach and the result is that the MAPE value is not more than 10%. This indicates that the simple moving average method has a very high level of accuracy in predicting gold prices.

Paper ID 255

Authors:

Evta Indra (Universitas Prima Indonesia)*;
Dheo Putranta Pandia (Universitas Prima Indonesia);
Tengku Nabila (Universitas Prima Indonesia);
Dennis Jusuf Ziegel (Universitas Prima Indonesia)

Title:

Prediction of Land Use and Land Cover (LULC) Changes for 2030 Using Time Series Data and Random Forest Algorithm

Abstract:

This study predicts land use and land cover (LULC) changes in Karo District in 2030 using Sentinel-2 data and the Random Forest algorithm. LULC data from 2017 to 2023 was used to train the model. Results show a significant decrease in forest area from 127,903 ha in 2017 to 85,291 ha in 2030 and a sharp increase in urban area from 2,287 ha to 51,158 ha. The water area is predicted to increase from 3,714 ha in 2017 to 29,479 ha in 2030. Bareland is expected to decrease from 8,784 ha in 2017 to 2,961 ha in 2030, while cropland will decrease from 74,369 ha in 2017 to 48,169 ha in 2030. Although the model showed high accuracy, manual observations revealed errors, such as misclassifying blue-roofed residential areas as water and predicting water areas in cloud-covered forests. This research highlights the importance of remote sensing and machine learning in monitoring and predicting LULC changes, providing a solid basis for improved land management and regional planning.

Paper ID 258

Authors:

Lim Sanny (Bina Nusantara University)*

Title:

Effects of Social Media Marketing Towards Online Purchase of Local Perfumes in Indonesia

Abstract:

This research aims to study the influence of Entertainment, interaction, trendiness, customization, E-WOM, value co-creation, consumer brand engagement on local online perfume brand awareness in the late millennial generation. Data is collected through online surveys where respondents are selected by judgement sampling techniques. Data from 156 local online followers on social media, especially Instagram, was analyzed using AMOS. The findings of this study suggest that Entertainment and E-WOM have no influence on Value Co-creation. Meanwhile, Interaction, Trendiness and Customization have an influence on Value Co-Creation and Value Co-Creation has an influence on Consumer Brand Engagement and Consumer Brand Engagement has an influence on Brand Awareness. The significance of each variable on each component is different. In addition, this study has also found that Value Co-Creation has the highest influence on Consumer Brand Engagement compared to other hypotheses.

Paper ID 261

Authors:

Baenil Huda (Universitas Kristen Satya Wacana)*;
Baenil Huda (Buana Perjuangan University of Karawang);
Kristoko Dwi Hartomo (Satya Wacana Christian University);
Yessica Nataliani (Satya Wacana Christian University);
Irwan Sembiring (Satya Wacana Christian University)

Title:

HCI Approach to Increasing E-Learning Using a Combination of Cognitive Walkthrough and User Centered Design

Abstract:

This research aims to produce an e-learning system that better suits the needs of end users and supports various learning modes more effectively and efficiently and increases the effectiveness and efficiency of e-learning systems by identifying and overcoming usability problems faced by users. Data was collected through in-depth interviews, surveys, and direct observation of students and lecturers to understand needs, limitations, and context of use. Data processing involved in-depth analysis of user feedback to inform the initial design of the prototype, which was then evaluated through the Cognitive Walkthrough (CW) method. The updated prototype iterated based on User Centered Design (UCD) principles, which emphasize user participation in every stage of design to ensure an intuitive and responsive solution. The expected result is the creation of an HCI model for e-learning applications that is more responsive and intuitive, and capable of increasing the use of e-learning.

Paper ID 263

Authors:

Sebastianus Radhya (Bina Nusantara University);
Yeremia M Toemali (Bina Nusantara University);
Francesco Jovan (Bina Nusantara University);
Abram S Prabowo (Bina Nusantara University)*

Title:

Improving Credit Score Classification Using Long Short-Term Memory and Support Vector Machines Tuned with Whale Optimization Algorithm

Abstract:

Credit scoring is important in the financial industry. While traditional credit scoring has been shown to be useful, machine learning is being explored as an alternative by their ability to find complex patterns that traditional models might miss. This study aims to use the Whale Optimization Algorithm (WOA) for hyperparameter tuning to improve the performance of the Long Short-Term Memory (LSTM) and Support Vector Machine (SVM) model in credit score classification, precisely on the Kaggle Credit Score Classification dataset. Hyperparameter tuning is crucial but can be time-consuming and lead to poor selection. The results show WOA's success in optimizing both models with a performance increase of 1- 4% on each evaluation metric. WOA also surpassed Genetic Algorithm (GA) in tuning LSTM and was comparable to GA in tuning SVM. Despite the study's constraints, WOA found more optimal hyperparameters for each model and outperformed GA, indicating the potential for improved credit scoring.

Paper ID 264

Authors:

Etik Zukhronah (Universitas Sebelas Maret)*;
Winita Sulandari (Universitas Sebelas Maret);
Sri Subanti (Universitas Sebelas Maret);
Isnandar Slamet (Department Statistics, Universitas Sebelas Maret, Surakarta, Indonesia);
Sugiyanto Sugiyanto (Universitas Sebelas Maret);
Irwan Susanto (Department of Statistics, Universitas Sebelas Maret)

Title:

Forecasting the stock price of Bank Central Asia Using Singular Spectrum Analysis Based Model

Abstract:

This paper applied a Singular Spectrum Analysis (SSA) and a hybrid model of SSA and Neural Network (NN) to forecast stock prices of BCA. SSA is regarded as effective in capturing the deterministic components of the data, whereas NN is used to model the stochastic elements. The data that used are stock prices of BCA from June 2023 to February 21, 2024. The data are forecasted using SSA-LRF and SSA-NN hybrid models. The hybrid model is performed in two ways. First, the data are modeled using SSA, and the residual of the SSA-LRF is modeled using NN. Second, the results of SSA decomposition, namely the signal and noise components, are modeled using NN. The results show that the best model is the SSA-NN hybrid model with a window length of 79 and network architecture of (1,64,1) for the signal component and (50,64,1) for the noise component, and can reduce the MAPE for the testing data from that obtained by SSA-LRF up to 36%.

Paper ID 266

Authors:

Karsten E Lie (Bina Nusantara University)*;
Maria Seraphina Astriani (Bina Nusantara University);
Ida BK Manuaba (Bina Nusantara University))

Title:

Analyzing the Performance of Golang Web Frameworks Utilizing GORM in the Oil and Gas Industry

Abstract:

This research evaluates the request completion time, average latency, error rate, and memory usage of four Go web frameworks: Fiber, Gin, Beego, and Echo, under different concurrent connections to find a fast, reliable, and scalable framework. These frameworks utilize GORM alongside a MySQL database. The test uses appropriate data from the oil and gas industry and it is done by hitting the endpoint that initializes a double inner join query using Grafana K6. The test is done on a Windows 11 machine with an Intel Core i5-12400F and 16GB of RAM, running Go 1.19. The results show that Echo outperforms the other frameworks with fastest request completion time, least average latency, error rate, and memory usage under heavier load, showing that Echo is fast, reliable, uses minimal resources, and has great scalability. However, under lighter load, the results obtained show similar speeds and error rates for all the frameworks but Gin showed a significantly higher memory usage.

Paper ID 268

Authors:

Audrienne Gunawan (Bina Bangsa School Semarang)*;
Felix Nathanael Tjahjono (Universitas Kristen Duta Wacana);
Danny Sebastian (Universitas Kristen Duta Wacana);
Restyandito Restyandito (Universitas Kristen Duta Wacana)

Title:

A Comprehensive Evaluation of the AR Budur Application: A TELOS Analysis

Abstract:

AR Budur is a navigation application using Augmented Reality technology. This application is developed to attract Gen Z tourists to visit the Borobudur Temple. Currently, AR Budur already passed two stages. Firstly, the development process. Secondly the testing process consisting of the software test and location test with limited access. The next stage is to conduct a feasibility test using the TELOS framework before implementing the application. This framework evaluates the Technological, Economic, Legal, Operational, and Scheduling aspects of the application. This evaluation was done in several stages: reviewing suitable works of literature in a comprehensive manner, identifying essential evaluation factors, conducting a practicality test, and formulating a conclusion. Based on these five evaluated aspects, a score of 8.18 was calculated from the average of these aspects. Therefore, it can be concluded that the AR Budur application is viable to implement.

Paper ID 272

Authors:

Michael A. Salim (Sekolah Pelita Harapan Lippo Village (SPHLV))*;
Winly Williamdy (Emmerich Education Research Center);
Eden Steven (Emmerich Research Center)

Title:

AI-Powered Badminton Shot Classification

Abstract:

"AI technology has catalyzed new frontiers across numerous domains, including sports analytics. Due to the diversity of sports, certain areas remain under-explored. This work will focus on bringing AI-driven analysis to the sport of Badminton. By leveraging computer vision techniques and ML models, we can analyze athlete performance by identifying shot selection. By examining their stroke preparation for conducting a type of shot, which differs subtly between shots, we can gain insights to their strengths and weaknesses. We developed two ML models for shot classification using official match data from BWF, categorizing shots into 'lob', 'smash', and 'net'. Our results show that the Keras-Mediapipe model outperforms the YOLO-NAS model in shot classification, however, still requires further improvements to be applicable".

Paper ID 273

Authors:

Vihaan Jain (Sekolah Pelita Harapan LV)*;
Aria Amadeus Salim (Universitas Kristen Krida Wacana);
Eden Steven (Emmerich Research Center)

Title:

Optimising Plastic Waste Management: YOLO-NAS-Based Robotic Sorting and Mobile App Prototypes for Adaptive Model Training

Abstract:

Effective waste management is essential for environmental sustainability and public health. Indonesia, the world's fourth most populous country, faces severe waste management challenges due to rapid urbanization and population growth. This study introduces a prototype robotic sorting machine powered by the YOLO-NAS model for classifying plastic waste. The system includes a mobile app that allows users to upload annotated images via FTP to a local database. This setup enables adaptive model training, continuously improving the model's accuracy over time. The model achieved a mean average precision (mAP) of 0.6, a recall of 1.0, and a validation precision of 0.018. Despite these promising results, the study identifies limitations and suggests enhancements for broader implementation in waste management systems.

Authors:

Brandon Steven (Bina Nusantara University);
Calista Vannia Nathalie (Bina Nusantara University);
Christopher Gerry Johanes (Bina Nusantara University);
Puti Andam Suri (Universitas Bina Nusantara)*

Title:

Comparison Research: YOLO (You Only Look Once) Model for Indonesian Sign Language Detection Reducing Communication Inequalities

Abstract:

This research explores the effectiveness of two YOLO (You Only Look Once) models, YOLOv8 and YOLOv9 in recognizing SIBI (Indonesian Sign Language) gestures. Focuses on AI (Artificial Intelligence) systems to facilitate communication and prevent isolation among the DHH (Deaf and Hard of Hearing) community. The models were assessed using metrics like mAP (mean Average Precision) and PR (Precision Recall) curves, followed by preprocessing the dataset into model compatibility. YOLOv8n and YOLOv9c from Ultralytics are compared in terms of accuracy, precision, recall, and F1 score. This research is significant as it contributes to developing solutions for the tenth SDGs (Sustainable Development Goals) that is to promote equality. The result of this research highlighted YOLOv9 as a better model than YOLOv8 with a mAP over 85% and PR curve close to 100. This research can greatly enhance AI accuracy and dependability, opening doors for future improvements in computer vision and social equality

Authors:

Humasak Tommy Argo Simanjuntak (Institut Teknologi Del)*;
Esphi Hutabarat (Institut Teknologi Del);
Sintia Silaen (Institut Teknologi Del);
Agnes Marpaung (Institut Teknologi Del);
Susi Purba (Institut Teknologi Del)

Title:

Tracking and Predicting CO₂ Emission Transportation in Toba Regency

Abstract:

In 2018, Nature Climate Change showed that world tourism contributed 8 percent of global emissions, 49 percent came from transportation services. In Indonesia, the priority tourism destination policy is one way to improve the quality of tourist visits, which also impacts global emissions. As one of the priority tourist destinations, Toba has experienced a significant increase in transportation activity, contributing to its CO₂ emissions. This study aims to predict CO₂ emissions using data from UPT Samsat Balige. The data is enriched by scraping emission information for each vehicle, improving data quality, and aggregating it. We apply Long Short-Term Memory, AutoRegressive Integrated Moving Average, and Support Vector Machine models to learning and predicting monthly and daily CO₂ emissions patterns in the Toba and to determine the model performance. ARIMA outperforms for monthly data with MAE of 0.1822, and SVM has the lowest error with MAE of 0.0010 for daily emission.

Paper ID 284

Authors:

Susi Eva Maria Purba (Institut Teknologi Del)*;
Sarah Rosdiana Tambunan (Institut Teknologi Del);
Chandro Pardede (Institut Teknologi Del)

Title:

Optimizing Walking Routes for Step Goals using Knapsack Algorithm

Abstract:

Health and mortality in humans are influenced by various factors, with daily step count being a significant contributor to overall well-being. This study introduces a novel approach to identify the optimal walking route that ensures the minimum daily step requirement is met, using recorded daily activities as a basis. By determining the most efficient route, the study provides personalized recommendations for the best paths to follow, helping individuals achieve their daily step goals. The study successfully identifies the optimal route using the knapsack algorithm. The recommended route is derived from analyzing the step activity records and is then suggested as the preferred path to help individuals meet the standard minimum step count necessary for maintaining a healthy lifestyle.

Paper ID 286

Authors:

Chandro Pardede (Institut Teknologi Del);
Parmonangan R. Togatorop (Institut Teknologi Del)*;
Ary Aritonang (Institut Teknologi Del);
Rosni Lumbantoruan (Institut Teknologi Del)

Title:

Diversity Focused Content-Based Filtering Recommendation System

Abstract:

Recommendation systems serve as tools to provide suggestions or recommendations for items, aiding users in decision-making processes. One major concern in the field of recommendation systems is the issue of diversity, which arises from overspecialization within the system. This issue is closely associated with content-based techniques, where recommendations are based on attributes of items liked by the user. If users have very specific preferences, the system may tend to give recommendations that are highly similar to each other, thereby reducing the variety or diversity in the recommendations provided. Hence, this research aims to develop a content-based filtering approach using deep learning techniques to improve recommendation diversity. The use of similarity threshold has proven effective in improving recommendation diversity, reflected in improved individual diversity scores.

Paper ID 288

Authors:

Indra Hartarto Tambunan (Institut Teknologi Del)*;
Noel Riki Apriyanto (Institut Teknologi Del)

Title:

Prototyping an IoT-Based Smart Controlled Poultry Farm System

Abstract:

This article presents the development and implementation of an Internet of Things (IoT) based Smart Controlled Poultry Farm Management System to enhance the efficiency and welfare of day-old chicks. The system prototype employs a DS18B20 temperature sensor and a microcontroller to automatically monitor and regulate the temperature, feeding, and drinking processes within the cage. Additionally, a web platform is provided for real-time condition monitoring informing the owner of any problems that may occurred. Temperature within the cage is maintained in the range of 30°C to 35°C with a measurement error rate of $\pm 1^\circ\text{C}$. This temperature range is controlled by switching the fan on and off, as well as opening and closing the curtain. Experimental results indicate that the system has the potential to improve the efficiency of maintaining optimal chick weight and temperature, as well as ensuring consistent feeding times, all of which are crucial for sustainable poultry production. These parameters were monitored over a period of 21 days.

Paper ID 291

Authors:

Henry Novianus Palit (Petra Christian University)*;
Andre Gunawan (Petra Christian University);
Daniel Jeremia (Petra Christian University)

Title:

SparkFlow: A Simple Big Data Analysis Application over Apache Spark

Abstract:

With the rapid increase in data generated through our daily activities, it is only a matter of time before we need to analyze this data to support decision making and improve our lives. While many frameworks and tools are available for processing Big Data, most require technical knowledge and skills that can be challenging for common people to acquire. To bridge this gap, SparkFlow was developed with a focus on simplicity and user-friendliness. Built on top of Spark, a well-known Big Data framework capable of processing data promptly and efficiently, SparkFlow features visual block programming that allows non-technical users to easily create data analysis workflows. SparkFlow's elements then convert these workflows into Spark operations for execution on the underlying cluster. Based on the evaluation results, SparkFlow can effectively reduce the number of required steps by at least 30% and accelerate task completion by approximately 13%.

Paper ID 298

Authors:

Rusdi Pratomo (University of Raharja);
Marviola Hardini (University of Raharja);
Dwi Julianingsih (University of Raharja)*;
Dedeh Suprianti (University of Raharja);
Qurotul Aini (University of Raharja)

Title:

Blockchain-Enabled Analytics in Banking Enhancing Risk Management for the Future of the Industry

Abstract:

Blockchain technology is transforming the banking industry by enhancing data analytics, offering greater transparency, efficiency, and security. This study examines the impact of blockchain-enabled analytics on banking's future, focusing on how decentralized ledger technology can drive innovation, improve risk management, and reduce costs. Despite its potential, there's a research gap on its full implementation in banking. This paper addresses this by analyzing the challenges and opportunities of adopting blockchain analytics. The findings suggest that these technologies could significantly enhance transaction processing, risk management, and customer trust. Future research should explore the long-term impact on banking performance, scalability, and customer experience.

Paper ID 301

Authors:

Pita Silvia (University of Raharja);
Qurotul Aini (University of Raharja);
Efa Ayu Nabila (University of Raharja)*;
Henderi Henderi (University of Raharja);
Hardjanto Nusantoro (University of Raharja)

Title:

The Role of User Behavior Patterns in Enhancing Fraud Detection in Online Banking: A Bibliometric Analysis

Abstract:

The complexity of fraud in online banking has outpaced traditional rule-based detection systems. This paper examines how user behavior patterns enhance fraud detection by integrating behavioral analytics with machine learning models to improve accuracy and reduce false positives. A bibliometric analysis using VOSviewer was conducted on 200 Google Scholar papers (2020-2024) to identify key trends. Terms like "user behavior" and "machine learning algorithms" emerged as central. Machine learning models, including neural networks and deep learning, were evaluated, with Convolutional Neural Networks (CNNs) achieving up to 95% accuracy. Challenges such as computational complexity, data privacy, and overfitting persist. Future research should explore hybrid models that integrate multiple data sources to further improve fraud detection systems. These findings align with IEEE's focus on cybersecurity and financial technology advancements.

Paper ID 302

Authors:

Ariya jati Kusumo (University of Raharja);
Qurotul Aini (Univesity of Raharja);
Shofiyul Millah (Univesity of Raharja)*;
Tuti Nurhaeni (Univesity of Raharja);
Lusyani Sunarya (Univesity of Raharja)

Title:

Exploring the User Satisfaction of Gamification in Promoting Savings Among Millennials

Abstract:

Gamification has proven to be an effective strategy for encouraging financial saving behaviors among millennials. This study examines how gamification impacts user satisfaction and promotes savings within this demographic, addressing the issue of low savings rates. Using a quantitative approach, data were collected from 319 millennial users of savings apps and analyzed with Structural Equation Modelling (SEM) through the Partial Least Squares (PLS) method in SmartPLS 4.0 software. The findings show that gamification elements, such as rewards, challenges, and progress tracking, significantly enhance user satisfaction and positively influence savings behavior. The study concludes that gamification is a valuable strategy for financial institutions to engage millennials and improve financial habits, recommending a focus on personalized and interactive experiences in future gamified financial applications.

Paper ID 304

Authors:

Yehezkeil Hasudungan (University of Raharja);
Fitra Putri Oganda (University of Raharja);
Ora Plane Maria Daeli (University of Raharja)*;
Raihan (University of Raharja);
Nesti Anggraini Santoso (University of Raharja)

Title:

Big Data Analytics for Proactive Financial Fraud Detection and Prevention

Abstract:

Financial fraud poses a significant challenge to the financial industry, with increasing complexity and scale threatening global economic stability. This paper explores the use of Big Data Analytics for proactive detection and prevention of financial fraud. By analyzing large and diverse datasets, this approach aims to identify patterns and anomalies that may indicate fraudulent activities before they harm financial institutions. In this study, Smart PLS is employed as the primary method to test the structural model and the influence of various variables on the effectiveness of fraud prevention. The findings reveal that integrating Big Data Analytics into fraud prevention strategies can enhance early detection and response to fraud threats, positively impacting financial risk management. This research contributes significantly to the field of risk management by offering a framework that can be implemented to enhance financial security through advanced data analytics.

Paper ID 307

Authors:

Priandito (University of Raharja);
Ninda Lutfiani (University of Raharja);
Natasya Aprila Yusuf (University of Raharja)*;
Thomas Sumarsan Goh (Universitas Methodist Indonesia);
Muchlisina Madani (University of Raharja)

Title:

Exploring User Experience and Challenges with Mobile Wallet Adoption in Emerging Markets

Abstract:

This study explores user experiences and challenges in mobile wallet adoption in emerging markets using the UTAUT model. These markets face rapid technological growth alongside infrastructural and economic challenges. The research examines how factors like performance expectancy, effort expectancy, social influence, and facilitating conditions influence adoption. Data from 80 mobile wallet users was collected through an online survey and analyzed using SmartPLS 4.1.0.6. The results show that performance and effort expectancy predict behavioral intention, while facilitating conditions affect actual usage. The study highlights the role of infrastructure in supporting adoption and validates the UTAUT model's relevance in less developed regions. These findings provide insights into enhancing financial inclusion in emerging markets.

Paper ID 311

Authors:

Tri Widiyatmoko (University of Raharja);
Untung Rahardja (University of Raharja);
Nanda Septiani (University of Raharja)*;
Dewi Immaniar Desrianti (University of Raharja);
Muhammad Faizal Fazri (University of Raharja)

Title:

The Role of Financial Literacy and Fintech in Promoting Financial Inclusion

Abstract:

This study explores the impact of financial technology (Fintech) on the sustainable performance of Micro and Small Enterprises (MSEs) within a university ecosystem, focusing on the mediating roles of financial literacy and financial inclusion. A purposive sampling technique yielded 250 MSE owners in Tangerang. Data were analyzed using Structural Equation Modeling-Partial Least Squares (SEM-PLS). Findings indicate that Fintech enhances MSE performance, with financial literacy significantly amplifying this effect. Non-linear relationships reveal initial declines before positive growth, underscoring the importance of early Fintech adoption phases, including learning and risk management.

Paper ID 317

Authors:

Tubagus Wahyu Rafiuddin (University of Raharja);
Ninda Lutfiani (University of Raharja);
Agung Rizky (University of Raharja)*;
Mulyati (University of Raharja);
Galih Putra Cesna (University of Raharja)

Title:

Evaluating the Effectiveness of Gamification in Mobile Banking to Increase Savings Rates

Abstract:

Gamification in mobile banking is increasingly used to enhance user engagement and encourage saving behaviors, but evidence of its effectiveness, particularly in specific cultural contexts, remains limited. This study assesses the impact of gamification in Indonesia's growing digital banking sector. Using SmartPLS and data from 303 respondents, the research explores how gamification elements like rewards, challenges, and leaderboards influence saving behaviors. The results reveal a significant positive effect, with a 15% increase in savings observed among users who engaged more with gamification elements. Intrinsic motivation was also found to amplify this impact. The study offers valuable insights for financial institutions on leveraging gamification to boost savings rates and enhance financial well-being, highlighting its potential as a key tool in mobile banking.

Paper ID 321

Authors:

Novie Theresia Br. Pasaribu (Universitas Kristen Maranatha)*;
Markus Tanubrata (Universitas Kristen Maranatha);
Vivi Arisandhy (Universitas Kristen Maranatha);
Erwani Merry Sartika (Universitas Kristen Maranatha);
Audyati Gany (Universitas Kristen Maranatha)

Title:

Application of Projection Mapping and RFID in Assembly Process

Abstract:

In modern manufacturing, technology such as Virtual Reality and Augmented Reality is leveraged to facilitate efficient and targeted production. Projection Mapping (PM) integrated with RFID is utilised in this research to streamline the assembly process (using bricks). This research contributes to the application of PM by using one multimedia projector device (relatively affordable price) to accommodate two different stations for the assembly process. This research's proposed data collection and testing stages entail preparation, pre-assembly, assembly, and statistical analysis. The research outcomes present a comparison of the duration between the manual and PM-equipped assembly processes, revealing a faster average duration of the PM process of 34.46 sec in contrast to the manual process of 60.15 sec. Further research is needed to expand the investigation of assembly processes involving differing products over an extended time frame.



UPH
UNIVERSITAS PELITA HARAPAN

fit

Faculty of
Information
Technology

ICTIIA 2024



<https://ictiia.uph.edu/>

MEDIA TYPE REQUESTED: XPLORE COMPLIANT

PART NUMBER: CFP22BZ7-ART

ISBN: 978-1-6654-8826-6

Support

Co-Host

