

**2021 International Conference  
on Software Engineering &  
Computer Systems and 4th  
International Conference on  
Computational Science and  
Information Management  
(ICSECS-ICOCSIM 2021)**

**Virtual Conference  
24 – 26 August 2021**



**IEEE Catalog Number: CFP21AL0-POD  
ISBN: 978-1-6654-1408-1**

**Copyright © 2021 by the Institute of Electrical and Electronics Engineers, Inc.  
All Rights Reserved**

*Copyright and Reprint Permissions:* Abstracting is permitted with credit to the source. Libraries are permitted to photocopy beyond the limit of U.S. copyright law for private use of patrons those articles in this volume that carry a code at the bottom of the first page, provided the per-copy fee indicated in the code is paid through Copyright Clearance Center, 222 Rosewood Drive, Danvers, MA 01923.

For other copying, reprint or republication permission, write to IEEE Copyrights Manager, IEEE Service Center, 445 Hoes Lane, Piscataway, NJ 08854. All rights reserved.

***\*\*\* This is a print representation of what appears in the IEEE Digital Library. Some format issues inherent in the e-media version may also appear in this print version.***

IEEE Catalog Number:	CFP21AL0-POD
ISBN (Print-On-Demand):	978-1-6654-1408-1
ISBN (Online):	978-1-6654-1407-4

**Additional Copies of This Publication Are Available From:**

Curran Associates, Inc  
57 Morehouse Lane  
Red Hook, NY 12571 USA  
Phone: (845) 758-0400  
Fax: (845) 758-2633  
E-mail: [curran@proceedings.com](mailto:curran@proceedings.com)  
Web: [www.proceedings.com](http://www.proceedings.com)

CURRAN ASSOCIATES INC.  
**proceedings**  
.com

# 2021 International Conference on Software Engineering & Computer Systems and 4th International Conference on Computational Science and Information Management (ICSECS- ICOCSIM) ICSECS-ICOCSIM 2021

## Table of Contents

Welcome Message from the General Chair .....	xxi
Committees .....	xxii

### 1A: IoT, Big Data Analytics, Artificial Intelligence

Infection Disease Classification in Indonesian Language using Machine Learning .....	1
<i>Mohamad Raychan Abdul Rosyid (Universitas Gadjah Mada, Indonesia) and Afiahayati Afiahayati (Universitas Gadjah Mada, Indonesia)</i>	
Internet of Things (Iot) Based Door Lock Security System .....	6
<i>Tommy Cha Hweay Rhunn (Universiti Malaysia Pahang, Malaysia), Anis Farihan Mat Raffei (Universiti Malaysia Pahang, Malaysia), and Nur Shamsiah Abdul Rahman (Universiti Malaysia Pahang, Malaysia)</i>	
A Proposed Requirements Prioritization Model Based on Cost-Value Approach with Collaboration Perspective .....	10
<i>Tan Amelia (Universiti Malaysia Pahang, Malaysia) and Rozlina Binti Mohamed (Universiti Malaysia Pahang, Malaysia)</i>	
SonoNet: Despeckling of Medical Ultrasound Scans using Convolutional Neural Network Architecture .....	16
<i>Prerna Singh (n/a, New Zealand)</i>	
Existing Semantic Ontology and Its Challenges for Enhancing Interoperability in IoT Environment .....	22
<i>Moseed Mohammed (University Malaysia Pahang, Malaysia), Awanis Romli (University Malaysia Pahang, Malaysia), and Rozlina Mohamed (University Malaysia Pahang, Malaysia)</i>	

## 1B: Information Systems

Modeling Reproductive Health Educational Games for Early Childhood using Goal-Directed Design .....	27
<i>Muhammad Sopian Putra Pratama (Telkom University, Indonesia), Veronikha Effendy (Telkom University, Indonesia), and Danang Junaedi (Telkom University, Indonesia)</i>	
Antecedents the Use of Social Commerce in Small Medium Enterprise: A Conceptual Framework ..	31
<i>Erwin Sutomo (University Malaysia Pahang, Malaysia), Nur Shamsiah Abdul Rahman (University Malaysia Pahang, Malaysia), and Awanis Romli (University Malaysia Pahang, Malaysia)</i>	
Web Engagement Readiness for Program Need Analysis (PNA) In Malaysian Community College ...	37
<i>Norita Ahmad (Kolej Komuniti Paya Besar, Malaysia) and Aziman Abdullah (Universiti Malaysia Pahang, Malaysia)</i>	
The Impact of Instagram E-Marketing in SME Fashion Industry on Customer Satisfaction .....	43
<i>Lim Sanny (Bina Nusantara University, Indonesia), Dahlia Marselli (Bina Nusantara University, Indonesia), Rorie Effandi (Bina Nusantara University, Indonesia), and Lea Simek (Bina Nusantara University, Indonesia)</i>	
Wireless Monitoring System for Motorcycle Tire Air Pressure with Pressure Sensor and Voice Warning on Helmet using Fuzzy Logic .....	47
<i>Mochammad Ikbal Tawakal (Telkom University, Indonesia), Maman Abdurohman (Telkom University, Indonesia), and Aji Gautama Putrada (Telkom University, Indonesia)</i>	

## 1C: Image Processing

Android Application for Posture Analysis using Tensorflow and Computer Vision .....	53
<i>Chee Ho Lee (Universiti Malaysia Pahang, Malaysia) and Mohd Arfian Ismail (Universiti Malaysia Pahang, Malaysia)</i>	
Reversible Face Watermarking Scheme using Hash Function for Tamper Localization and Recovery .....	58
<i>Kiung Siew Lian (Universiti Malaysia Pahang, Malaysia), Liew Siau Chuin (Universiti Malaysia Pahang, Malaysia), and Ferda Ernawan (Universiti Malaysia Pahang, Malaysia)</i>	
Performance Comparison of Spatial Domain-Based Watermarking Techniques .....	64
<i>Jessie Ooi (Universiti Malaysia Pahang, Malaysia), Hui Liang Khor (Tunku Abdul Rahman University College, Malaysia), Siau Chuin Liew (Universiti Malaysia Pahang, Malaysia), and Syifak Izhar Hisham (Universiti Malaysia Pahang, Malaysia)</i>	

Watermarking Scheme Based on Chinese Remainder Theorem and Integer Wavelet Filters for Copyright Protection .....	70
<i>Prajanto Wahyu Adi (Universitas Diponegoro, Indonesia), Ferda Ernawan (Universiti Malaysia Pahang, Malaysia), Adi Wibowo (Universitas Diponegoro, Indonesia), Eko Adi Sarwoko (Universitas Diponegoro, Indonesia), and Fajar Agung Nugroho (Universitas Diponegoro, Indonesia)</i>	
The Impact of AR/VR on Spatial Memory Performance of Learners: A Review .....	75
<i>Mohammed Thamir Atta (Universiti Malaysia Pahang (UMP), Malaysia), Awanis Romli (University Malaysia Pahang, Malaysia), and Mazlina Abdul Majid (University Malaysia Pahang, Malaysia)</i>	

## 1D: Software Engineering, Knowledge Engineering

Semi – Automated Software Requirement Specification (SRS) Document Generator: The Guideline to Novice System Analyst .....	80
<i>Siti Nur Fathin Najwa Binti Mustaffa (Universiti Malaysia Pahang, Malaysia), Jamaludin Bin Sallim (Universiti Malaysia Pahang, Malaysia), and Rozlina Binti Mohamed (Universiti Malaysia Pahang, Malaysia)</i>	
Performing User Acceptance Test with System Usability Scale for Graduation Application .....	86
<i>Nik Azlina Nik Ahmad (Universiti Kuala Lumpur, Malaysia) and Puteri Norliana Nor'Ain Megat Sazali (Universiti Kuala Lumpur, Malaysia)</i>	
Examining the Actual System Use of CodePolitan' Consumers During the COVID-19 Pandemic using TAM .....	92
<i>Joy Frans Marpaung (Telkom University, Indonesia), Rahmat Yasirandi (Telkom University, Indonesia), and Muhammad Al Makky (Telkom University, Indonesia)</i>	
A Review on DevOps Adoption in Continuous Delivery Process .....	98
<i>Muhammad Zulfahmi Toh (Universiti Malaysia Pahang, Universiti Teknologi Malaysia, Malaysia), Shamsul Sahibuddin (Universiti Teknologi Malaysia, Malaysia), and Rohani Abu Bakar (Universiti Malaysia Pahang, Malaysia)</i>	
Information Technology Hardware Services Based on the Service Quality Dimension to the IT Hardware Support Services: A Conceptual Framework. ....	104
<i>Azham bin Ahmad (University College and Terengganu Advanced Technical Institute, Malaysia), Ruzaini Abdullah Arshah (Universiti Malaysia Pahang, Malaysia), and Adzhar Bin Kamaludin (Universiti Malaysia Pahang, Malaysia)</i>	

## 1E: Big Data Analytics, Artificial Intelligence

Iris Recognition System using Convolutional Neural Network .....	109
<i>Amer Sallam (Taiz University, Yemen), Hadeel Al Amery (Taiz University, Yemen), Somaia Al-Qudasi (Taiz University, Yemen), Safaa Al-Ghorbani (Taiz University, Yemen), Taha H. Rassem (College of Computing and Applied Sciences, Malaysia), and Nasrin M. Makbol (University of Hodeidah)</i>	

Assistive Technology for Harvesting Footstep Energy in IoT Enabled Smart Shoe for the Visually Impaired .....	115
<i>Mritha Ramalingam (University Malaysia Pahang, Malaysia), Elanchezhian Chinnavan (Holycross College, India), R. Puviarasi (Saveetha Institute of Medical and Technical Sciences, India), and Ng Hui Yu (University Malaysia Pahang, Malaysia)</i>	
Model Evaluation of Various Supervised Machine Learning Algorithm for Heart Disease Prediction .....	119
<i>S. Hameetha Begum (Muscat College, Sultanate of Oman) and S.N. Nisha Rani (Fatima Michael Engineering College, India)</i>	
Region-Based Distance Analysis of Keyphrases: A New Unsupervised Method for Extracting Keyphrases Feature from Articles .....	124
<i>Mohammad Badrul Alam Miah (Universiti Malaysia Pahang, Malaysia), Suryanti Awang (Universiti Malaysia Pahang, Malaysia), and Md. Saiful Azad (Green University of Bangladesh, Malaysia)</i>	
An Experimental Comparison of Unsupervised Keyphrase Extraction Techniques for Extracting Significant Information from Scientific Research Articles .....	130
<i>Talha Bin Sarwar (University Malaysia Pahang, Malaysia) and Noorhuzaimi Mohd Noor (Universiti Malaysia Pahang, Malaysia)</i>	

## **1F: Information Management, E-Learning**

Analysing the Impact of Social Presence on Student Satisfaction Through Small Group Discussion in a Synchronous Online Learning .....	136
<i>Mahaning Indrawaty Wijaya (Bina Nusantara University, Indonesia), Suzanna Suzanna (Bina Nusantara University, Indonesia), Diana Utomo (Bina Nusantara University, Indonesia), and Kevin Adhyzio (Bina Nusantara University, Indonesia)</i>	
Sleep Behaviour and Online Engagement in Learning Management System at Higher Education During COVID-19 Pandemic .....	143
<i>Aziman Abdullah (Universiti Malaysia Pahang, Malaysia)</i>	
Web Page Classification using Convolutional Neural Network (CNN) Towards Eliminating Internet Addiction .....	149
<i>Siti Hawa Apandi (Universiti Malaysia Pahang, Malaysia), Jamaludin Sallim (Universiti Malaysia Pahang, Malaysia), Rozlina Mohamed (Universiti Malaysia Pahang, Malaysia), and Araby Madbouly (Muscat College, Oman)</i>	
Project Management Students' Perception on E-Learning .....	155
<i>Preeti Shrivastava (Muscat College, Oman), Nitha Siju (Muscat College, Oman), and Araby Madbouly (Muscat College, Oman)</i>	
Integrating Psychology Approach into Course Advisory System Framework for Higher Education Institution .....	161
<i>Ain Nadhira Mohd Taib (Universiti Malaysia Pahang, Malaysia), F. Zainuddin (Universiti Malaysia Pahang, Malaysia), and M. Rahmah (Universiti Malaysia Pahang, Malaysia)</i>	

## 2A: IoT, Big Data Analytics, Artificial Intelligence

Optical Character Recognition using Backpropagation Neural Network for Handwritten Digit Characters .....	167
<i>Mei Ing Yap (Universiti Malaysia Pahang, Malaysia), Kohbalan Moorthy (Universiti Malaysia Pahang, Malaysia), Kauthar Mohd Daud (Universiti Kebangsaan Malaysia, Malaysia), and Ferda Ernawan (Universiti Malaysia Pahang, Malaysia)</i>	
Performance Evaluation of Hybrid Feature Selection Technique for Sentiment Classification Based on Food Reviews .....	172
<i>Suryanti Awang (Universiti Malaysia Pahang, Malaysia) and Nur Syafiqah Mohd Nafis (Universiti Malaysia Pahang, Malaysia)</i>	
The Co-ChiLeRFE: Couple LBP and LTP Methods of Children-Learning Readiness using Facial Expression .....	177
<i>Ulya Mahsa Anandiwa (Telkom University, Indonesia), Ema Rachmawati (Telkom University, Indonesia), and Risnandar Risnandar (Telkom University, Indonesian Institute of Sciences, Indonesia)</i>	
Blockchain and the Internet of Things: Opportunities and Challenges .....	183
<i>Ashwag Albakri (Jazan university, Saudi Arabia)</i>	
Topic Modelling and Clustering of Disaster-Related Tweets using Bilingual Latent Dirichlet Allocation and Incremental Clustering Algorithm with Support Vector Machines for Need Assessment .....	189
<i>Lady Angelica Buen Guerzo (University of Santo Tomas, Philippines), Hans Aaron Kilkenny (University of Santo Tomas, Philippines), Raphael Noel Osorio (University of Santo Tomas, Philippines), Andrei Hart Villegas (University of Santo Tomas, Philippines), and Charmaine Ponay (University of Santo Tomas, Philippines)</i>	
Blockchain Technology for IoT Based Educational Framework and Credentials .....	194
<i>Shams Tabrez Siddiqui (Jazan University, Saudi Arabia), Mohammoud Fakhreldin (Jazan University, Saudi Arabia), and Shadab Alam (Jazan University, Saudi Arabia)</i>	

## 2B: Network and Communication

Comparison of PPO and SAC Algorithms Towards Decision Making Strategies for Collision Avoidance Among Multiple Autonomous Vehicles .....	200
<i>Abu Jafar Md Muzahid (Universiti Malaysia Pahang, Malaysia), Syafiq Fauzi Kamarulzaman (Universiti Malaysia Pahang, Malaysia), and Md Arafatur Rahman (University of Wolverhampton, UK)</i>	
Video Transmission in IEEE 802.15.4 Wireless Sensor Network using Asynchronous TDMA .....	206
<i>Nor-Syahidatul Nadiah Ismail (Universiti Malaysia Pahang (UMP), Malaysia), Fauzun Abdullah Asuhaimi (Universiti Sains Islam Malaysia(USIM), Malaysia), Sharifah Hafizah Syed Ariffin (Universiti Teknologi Malaysia (UTM), Malaysia), and Farizah Yunus (Universiti Malaysia Terengganu(UMT), Malaysia)</i>	

Improving Road Networks using Network Optimization: Case Study of Aley Lebanon .....	212
<i>Rawad Rayess (Univeristy of Balamand Kalhat, Lebanon), Samer El-Zahab (Univeristy of Balamand Kalhat, Lebanon), Nabil Semaan (University of Balamand Kalhat, Lebanon), and Abobakr Al-Sakkaf (Hadhramout University, Mukalla, Yemen)</i>	
Performance Comparison Between AODV and DSR In Mobile Ad-Hoc Network (MANET) .....	217
<i>Nor Ika Shahirah Ramli (Universiti Malaysia Pahang, Malaysia), Syifak Izhar Hisham (Universiti Malaysia Pahang, Malaysia), Nor Syahidatul Nadiyah Ismail (Universiti Malaysia Pahang, Malaysia), and Mritha Ramalingam (Universiti Malaysia Pahang, Malaysia)</i>	
Geofence Alerts Application with GPS Tracking for Children Monitoring (CTS) .....	222
<i>M. Izham Jaya (Universiti Malaysia Pahang, Malaysia), Goh Xin Tong (Universiti Malaysia Pahang, Malaysia), Mohd Faizal Ab Razak (Universiti Malaysia Pahang, Malaysia), Azlee Zabidi (Universiti Malaysia Pahang, Malaysia), and Syifak Izhar Hisham (Universiti Malaysia Pahang, Malaysia)</i>	
Ransomware: Stages, Detection and Evasion .....	227
<i>Yus Kamalrul Mohamed Yunus (Universiti Malaysia Pahang, Malaysia) and Syahrulanuar Ngah (Universiti Malaysia Pahang, Malaysia)</i>	

## **2C: Big Data Analytics, Artificial Intelligence, Image Processing**

Machine-Learning-Based Prediction Models of Coronary Heart Disease using Naïve Bayes and Random Forest Algorithms .....	232
<i>Charles Bernando (Bina Nusantara University, Indonesia), Eka Miranda (Bina Nusantara University, Indonesia), and Mediana Aryuni (Bina Nusantara University, Indonesia)</i>	
The Neuropsychology Assessment for Identifying Dementia in Parkinson’s Disease Patients using a Deep Neural Network .....	238
<i>Nur Hafieza Ismail (Universiti Malaysia Pahang (UMP), Malaysia), Nur Shazwani Kamarudin (Universiti Malaysia Pahang (UMP), Malaysia), and Ahmad Fakhri Ab. Nasir (Universiti Malaysia Pahang (UMP), Malaysia)</i>	
A Data-Oriented Approach for Detecting offensive Language in Arabic Tweets .....	244
<i>Eshrag Refaee (Jazan University, Saudi Arabia)</i>	
Vehicle Route Tracking System Based on Vehicle Registration Number Recognition using Template Matching Algorithm .....	249
<i>Chor Kiew Lai (Universiti Malaysia Pahang, Malaysia), Abu Jafar Md Muzahid (Universiti Malaysia Pahang, Malaysia), and Syafiq Fauzi Kamarulzaman (Universiti Malaysia Pahang, Malaysia)</i>	
Video Tracking System using Midrange Exploration Exploitation Searching-Particle Swarm Optimization (MEESPSO) in Handling Occlusion and Similar Appearance due to Crowded Environment .....	255
<i>Nurul Izzatie Husna Fauzi (Universiti Malaysia Pahang, Malaysia), Zalili Musa (Universiti Malaysia Pahang, Malaysia), and Nor Saradatul Akmar Zulkifli (Universiti Malaysia Pahang, Malaysia)</i>	



COVID-19 Analysis and Predictions Evaluation for KSA using Machine Learning .....	261
<i>Rawia Elarabi (Jazan University, KSA), Fatimah Alqahtani (Jazan University, KSA), Awatef Balobaid (Jazan University, KSA), Halah Zain (Jazan University, KSA), and Najla Babiker (Jazan University, KSA)</i>	

## 2D: Software Engineering, Knowledge Engineering

Comparative Study of QoS Parameters for Different Web Services .....	267
<i>Md. Abul Kalam Azad (United International University, Bangladesh), Salekul Islam (United International University, Bangladesh), A.K.M. Muzahidul Islam (United International University, Bangladesh), and Md. Saddam Hossain Mukta (United International University, Bangladesh)</i>	
Improving Messenger Accessibility for Elderly Users using User Centered Design (UCD) Methods (Study Case: WhatsApp) .....	273
<i>Wafa Zahida (Telkom University, Indonesia), Veronikha Effendy (Telkom University, Indonesia), and Aristyo Hadikusuma (Telkom University, Indonesia)</i>	
Fruit Ordering System Through Fruity Healthy Mobile Application .....	279
<i>Suraya Abu Bakar (Universiti Malaysia Pahang, Malaysia) and Liew Pei Ling (Universiti Malaysia Pahang, Malaysia)</i>	
A Review on Distance Measure Formula for Enhancing Match Detection Process of Generic Code Clone Detection Model in Java Application .....	285
<i>Noormaizzattul Akmaliza Abdullah (Universiti Malaysia Pahang, Malaysia), Mohd Azwan Mohamad Hamza (Universiti Malaysia Pahang, Malaysia), and Al-Fahim Mubarak Ali (Universiti Malaysia Pahang, Malaysia)</i>	
Effects of Eye Health Among Youngster While Playing Computer Game .....	291
<i>Nurul Saidatul Akmal Binti Ab Razak (Universiti Malaysia Pahang, Malaysia) and Rahmah Mokhtar (Universiti Malaysia Pahang, Malaysia)</i>	
Enhancing High-Quality User Stories with AQUASA: An Overview Study of Data Cleaning Process.....	295
<i>Siti Nur Fathin Najwa Binti Mustaffa (Universiti Malaysia Pahang, Malaysia), Jamaludin Bin Sallim (Universiti Malaysia Pahang, Malaysia), and Rozlina Binti Mohamed (Universiti Malaysia Pahang, Malaysia)</i>	

## 2E: IoT, Artificial Intelligence, Image Processing, E- Learning

Light Deep Learning Model Architecture for Chest X-ray Based Covid-19 Detection .....	301
<i>Putra Sumari (Universiti Sains Malaysia, Malaysia), Saqib Jamal Syed (Universiti Sains Malaysia, Malaysia), and Liang Han Sheng (Universiti Sains Malaysia, Malaysia)</i>	
Towards an Optimized Dragonfly Algorithm using Hill Climbing Local Search to Tackle the Low Exploitation Problem .....	306
<i>Bibi Aamirah Shafaa Emambocus (Sunway University, Malaysia) and Muhammed Basheer Jasser (Sunway University, Malaysia)</i>	

The Abstract of Thesis Classifier by using Naive Bayes Method .....	312
<i>Hairani Hairani (Universitas Bumigora, Indonesia), Anthony Anggrawan (Universitas Bumigora, Indonesia), Ahmad Islahul Wathan (Universitas Bumigora, Indonesia), Kurniadin Abd Latif (Universitas Bumigora, Indonesia), Khairan Marzuki (Universitas Bumigora, Indonesia), and Muhammad Zulfikri (Universitas Bumigora, Indonesia)</i>	
IoT Based Sport Healthcare Monitoring System .....	316
<i>Muhammad Naim Mohd Samsuddin (Universiti Malaysia Pahang, Malaysia), Anis Farihan Mat Raffei (Universiti Malaysia Pahang, Malaysia), and Nur Shamsiah Abdul Rahman (Universiti Malaysia Pahang, Malaysia)</i>	
Review on Target Tracking Method in Multimedia Wireless Sensor Networks .....	320
<i>Afritha Amelia (Universitas Sumatera Utara, Indonesia), Muhammad Zarlis (Universitas Sumatera Utara, Indonesia), Suherman Suherman (Universitas Sumatera Utara, Indonesia), and Syahril Efendi (Universitas Sumatera Utara, Indonesia)</i>	
Prediction using A Neural Network Algorithm Approach (A Review) .....	325
<i>T.H.F Harumy (Universitas Sumatera Utara, Indonesia), M. Zarlis (Universitas Sumatera Utara, Indonesia), S. Effendi (Universitas Sumatera Utara, Indonesia), and M.S Lidya (Universitas Sumatera Utara, Indonesia)</i>	
Features of Single Value Coordinate System (SVCS) for Earthquake Forecasting using Single Layer Hierarchical Graph Neuron (SLHGN) .....	331
<i>Benny Benyamin Nasution (Politeknik Negeri Medan, Indonesia)</i>	
Neural Network as a Preferred Method for Microarray Data Classification .....	337
<i>Putri Tsatsabila Ramadhani (University of North Sumatera, Indonesia) and Benny Benyamin Nasution (University of North Sumatera, Indonesia)</i>	

## **2F: Information Management, E-Learning**

Sentinel: The Development of a Web and Mobile Application for the Development and Testing of an E-Service Learning Interprofessional Telehealth Community Based Rehabilitation Program Among Hypertensive Clients .....	341
<i>Rafael Benedict E. Bacungan (University of Santo Tomas, Philippines), Kurt Martin C. Choi (University of Santo Tomas, Philippines), Jansen Patrick A. Chua (University of Santo Tomas, Philippines), Jericho P. Dupo (University of Santo Tomas, Philippines), and Noel Estrella (University of Santo Tomas, Philippines)</i>	
A Mathematical Educational Game Application for Primary School Slow Learner .....	348
<i>Nur Syakirah Binti Kamarulzaman (Universiti Malaysia Pahang, Malaysia), Danakorn Nincarean Eh Phon (Universiti Malaysia Pahang, Malaysia), and Mohd Syazwan Baharuddin (Universiti Kebangsaan Malaysia, Malaysia)</i>	
Serious Games and Preventive Self-Care for Diabetes: A Conceptual Framework .....	354
<i>Siti Normaziah Ihsan (Universiti Malaysia Pahang, Malaysia), Tuty Asmawaty Abd Kadir (Universiti Malaysia Pahang, Malaysia), and Abdul Rafiq Abdullah (Universiti Malaysia Pahang, Malaysia)</i>	

Usability Evaluation of The MeMo Tutor: A Scaffolding-Based Pedagogical Agent to Facilitate Learning .....	360
<i>Ati Suci Dian Martha (Universitas Indonesia, Indonesia), Harry Budi Santoso (Universitas Indonesia, Indonesia), Kasiyah Junus (Universitas Indonesia, Indonesia), and Heru Suhartanto (Universitas Indonesia, Indonesia)</i>	
The Effectiveness of BIPA Learning Based on Blended MOOCs Learning Model .....	365
<i>Rahmi Yulia Ningsih (Bina Nusantara University, Indonesia), Endry Boeriswati (Universitas Negeri Jakarta, Indonesia), Wardani Rahayu (Universitas Negeri Jakarta, Indonesia), Ninuk Lustyantie (Universitas Negeri Jakarta, Indonesia), and Uwes Anis Chaeruman (Universitas Negeri Jakarta, Indonesia)</i>	
Learnability Factors of AR Usage Performance: Validating Through Survey .....	371
<i>Sayera Hafsa (Universiti Malaysia Pahang, Malaysia), Mazlina Abdul Majid (Universiti Malaysia Pahang, Malaysia), and Ragad M Tawafak (AlBuraimi University College, Oman)</i>	

### **3A: IoT, Big Data Analytics, Artificial Intelligence**

An Organ Donation Management System (ODMS) Based on Blockchain Technology for Tracking and Security Purposes .....	377
<i>Che Akmal Che Yahaya (Universiti Malaysia Pahang, Malaysia), Ahmad Firdaus (Universiti Malaysia Pahang, Malaysia), Yong Yew Khen (Universiti Malaysia Pahang, Malaysia), Che Yahaya Yaakub (Universiti Malaysia Pahang, Malaysia), and Mohd Faizal Abd Razak (Universiti Malaysia Pahang, Malaysia)</i>	
OriFeat: Origin of Replication Identification using DNA Sequence Based Features .....	383
<i>Mashiyat Alam Promi (United International University, Bangladesh) and Swakkhar Shatabda (United International University, Bangladesh)</i>	
Non-Linear Autoregressive with Exogenous Input (Narx) Chiller Plant Prediction Model .....	388
<i>Azlee Zabidi (Universiti Malaysia Pahang, Malaysia), Mohd Izham Mohd Jaya (Universiti Malaysia Pahang, Malaysia), Wan Isnii Sofiah Wan Din (Universiti Malaysia Pahang, Malaysia), Hasliza Abu Hassan (Universiti Selangor), and Ahmad Ihsan Mohd Yassin (Universiti Teknologi MARA)</i>	
Tree-Based Ensemble Learning for Stress Detection by Typing Behavior on Smartphones .....	394
<i>Adam Sukma Darmawan (Universitas Diponegoro, Indonesia), Ferda Ernawan (Universiti Malaysia Pahang, Malaysia), Ivan Benawan (Universitas Diponegoro, Indonesia), Zharfan Akbar Andriawan (Universitas Diponegoro, Indonesia), Adi Wibowo (Universitas Diponegoro, Indonesia), Aris Sugiharto (Universitas Diponegoro, Indonesia), Eko Adi Sarwoko (Universitas Diponegoro, Indonesia), and Mandahadi Kusuma (Universitas Islam Negeri Sunan Kalijaga, Indonesia)</i>	
C Programming Skill Levels Determination using Fuzzy Logic .....	399
<i>Muhammad Aiman Al-Falah Muhd Yazid (Universiti Malaysia Pahang, Malaysia), Noor Azida Sahabudin (Universiti Malaysia Pahang, Malaysia), Anis Farihan Mat Raffei (Universiti Malaysia Pahang, Malaysia), and Muhammad Akmal Remli (Universiti Malaysia Kelantan, Kelantan)</i>	

Application of Internet of Things for Early Detection of COVID-19 using Wearables .....	405
<i>Taki Uddin (United International University, Bangladesh), Md. Borhan Uddin (United International University, Bangladesh), A.K.M. Muzahidul Islam (United International University, Bangladesh), Salekul Islam (United International University, Bangladesh), and Swakkhar Shatabda (United International University, Bangladesh)</i>	

### **3B: Big Data Analytics, Artificial Intelligence, Image Processing**

User Authentication Model Based on Mobile Phone IMEI Number: A Proposed Method Application for Online Banking System .....	411
<i>Waleed A. Hammood (University Malaysia Pahang, Malaysia), Ruzaini Abdullah Arshah (University Malaysia Pahang, Malaysia), Salwana Mohamad Asmara (University Malaysia Pahang, Malaysia), and Omar A. Hammood (University Malaysia Pahang, Malaysia)</i>	
An Image Watermarking Based on Multi-level Authentication for Quick Response Code .....	417
<i>Joanna Tan Lei Lei (Universiti Malaysia Pahang, Malaysia), Liew Siau Chuin (Universiti Malaysia Pahang, Malaysia), and Ferda Ernawan (Universiti Malaysia Pahang, Malaysia)</i>	
Performance Analysis on Denial of Service Attack using UNSW-NB15 Dataset .....	423
<i>Imran Edzereiq Kamarudin (University Malaysia Pahang, Malaysia), Mohd Faizal Ab Razak (Universiti Malaysia Pahang, Malaysia), Ahmad Firdaus (Universiti Malaysia Pahang, Malaysia), M. Izham Jaya (Universiti Malaysia Pahang, Malaysia), and Yau Ti Dun (SysArmy Sdn Bhd, Malaysia)</i>	
Secure Storage of Data on Devices-Android Based .....	427
<i>Sameera Abubaker Saeed (Hadramout University, Yemen), Marghny Hassan Mohamed (Assiut University, Egypt), and Mamdouh Farouk Mohamed (Assiut University, Egypt)</i>	
Hilbert-Peano and Zigzag: Two Approaches Mapping Pattern of Digital Watermarking for Text Images Authentication .....	433
<i>Aqilah Abd. Ghani (Universiti Malaysia Pahang, Malaysia), Syifak Izhar Hisham (Universiti Malaysia Pahang, Malaysia), and Nurul Wahidah Arshad (Universiti Malaysia Pahang, Malaysia)</i>	
Comparison on Machine Learning Algorithm to Fast Detection of Malicious Web Pages .....	438
<i>Wan Nurulsafawati Wan Manan (Universiti Malaysia Pahang, Malaysia), Mohd Nizam Mohmad Kahar (Universiti Malaysia Pahang, Malaysia), and Noorlin Mohd Ali (Universiti Malaysia Pahang, Malaysia)</i>	

### **3C: Big Data Analytics, Artificial Intelligence**

Review on Skyline Query Processing Techniques over Data Stream .....	443
<i>Zarina Dzolkhifli (Universiti Malaysia Pahang, Malaysia), Hamidah Ibrahim (Universiti Putra Malaysia, Malaysia), and Mohd Hafiz Mohd Hassin (Universiti Malaysia Pahang, Malaysia)</i>	

Comparison of the Use of Bigrams and Stopword Removal for Classification using Naive Bayes (Case Study on Sentiment Analysis of By.U Internet Users) .....	447
<i>Manaarul Hidayat (UIN Sunan Kalijaga Yogyakarta, Indonesia), Rahmat Hidayat (UIN Sunan Kalijaga Yogyakarta, Indonesia), and Dwi Otik Kurniawati (UIN Sunan Kalijaga Yogyakarta, Indonesia)</i>	
Bangladesh Crime Reports Analysis and Prediction .....	453
<i>Md Pavel Rahman (United International University, Bangladesh), A.K.M Ifranul Hoque (United International University, Bangladesh), Md. Faysal Ahmed (United International University, Bangladesh), Iftekhurul Iftekhurul (United International University, Bangladesh), Ashraful Alam (United International University, Bangladesh), and Nahid Hossain (United International University, Bangladesh)</i>	
Enhanced Colour Scheme Assessment Tool (COSAT 2.0) for Improving Webpage Colour Selection .	459
<i>Seraphina Valerie Fernandez (Universiti Malaysia Pahang, Malaysia), Mazlina Abdul Majid (Universiti Malaysia Pahang, Malaysia), Noor Akma Abu Bakar (Universiti Malaysia Pahang, Malaysia), and Muhammed Fakhreldin (Jazan University, Saudi Arabia)</i>	
Computer-Aided System for Extending the Performance of Diabetes Analysis and Prediction.	465
<i>Saydul Akbar Murad (Universiti Malaysia Pahang, Malaysia), Zafril Rizal M Azmi (Universiti Malaysia Pahang, Malaysia), Zaid Hafiz Hakami (Jazan University, Saudi Arabia), Nusrat Jahan Prottasha (Daffodils International University, Bangladesh), and Md Kowsher (Noakhali Science and Technology University, Bangladesh)</i>	
Applications of Artificial Neural Networks in Engine Cooling System .....	471
<i>Md Munirul Hasan (Universiti Malaysia Pahang, Malaysia), Md Shofiqul Islam (Universiti Malaysia Pahang, Malaysia), Suraya Abu Bakar (Universiti Malaysia Pahang, Malaysia), Md Mustafizur Rahman (Universiti Malaysia Pahang, Malaysia), and Muhammad Nomani Kabir (Trust university Barishal, Bangladesh)</i>	

### **3D: Information Systems**

Mobile Health Monitoring and Treatment System for COVID-19 Symptoms Identification .....	477
<i>Yue Xien Wong (INTI International University, Malaysia), Nabilah Filzah Mohd Radzuan (Universiti Malaysia Pahang, Malaysia), and Mohd Norshahriel Abd Rani (INTI International University, Malaysia)</i>	
Hybrid Multi-Verse Optimizer for Covid19 Confirmed Cases Prediction: Cases in Malaysia .....	483
<i>Zuriani Mustaffa (Universiti Malaysia Pahang, Malaysia), Mohd Herwan Sulaiman (Universiti Malaysia Pahang, Malaysia), and Bariah Yusob (Universiti Malaysia Pahang, Malaysia)</i>	
Identifying Influencers on Twitter for Covid-19 Education and Vaccination using Social Network Analysis .....	488
<i>Andy Maulana Yusuf (Telkom University, Indonesia), Mukhamad Rafi Galih Saputro (Telkom University, Indonesia), and Warih Maharani (Telkom University, Indonesia)</i>	

RSU-Aided Mobility-Aware Dynamic Resource Allocation for Vehicular Cloud Services .....	493
<i>Mohammad Mamun Elahi (United International University, Military Institute of Science &amp; Technology, Bangladesh), Md. Mahbubur Rahman (Military Institute of Science &amp; Technology, Bangladesh), and Mohammad Mahfuzul Islam (Bangladesh University of Engineering &amp; Technology, Bangladesh)</i>	
Reducing Docker Daemon Attack Surface using Rootless Mode .....	499
<i>Reyhan Rahmansyah (Telkom University, Indonesia), Vera Suryani (Telkom University, Indonesia), Fazmah Arif Yulianto (Telkom University, Indonesia), and Nurul Hidayah Ab Rahman (Universiti Tun Hussein Onn Malaysia, Malaysia)</i>	
Framework of the Employee Attendance System with QR Code in the Pandemic Covid-19 .....	503
<i>Erwin Aji Nugroho (Universitas Islam Negeri Sunan Kalijaga, Indonesia), Sumarsono Sumarsono (Universitas Islam Negeri Sunan Kalijaga, Indonesia), and Eko Hadi Gunawan (Universitas Islam Negeri Sunan Kalijaga, Indonesia)</i>	

### **3E: Information Management and E-Learning**

Smell Sensory System in m-Commerce - A Case Study .....	507
<i>Jarina Begum Khan Mohamed (Jazan University, Saudi Arabia), Juwairiya Anwar Ibrahim (Asia Metropolitan University, Malaysia), and Eshrag Refaee (Jazan University, Saudi Arabia)</i>	
Framework of Strategic Alignment Through Enterprise Architecture for Organization Performance .....	512
<i>Yoppy Mirza Maulana (Universiti Malaysia Pahang, Malaysia), Zafril Rizal M Azmi (Universiti Malaysia Pahang, Malaysia), Ruzaini Abdullah Arshah (Universiti Malaysia Pahang, Malaysia), Muhammad Aliif Ahmad (Universiti Teknologi Malaysia, Malaysia), and Halah Zain (Jazan University, Malaysia)</i>	
Factors Influencing SaaS Adoption by MSMEs .....	518
<i>Ayuningtyas Ayuningtyas (Universitas Dinamika, Indonesia), Zafril Rizal M Azmi (Universiti Malaysia Pahang, Malaysia), Ruzaini Abdullah Arshah (Universiti Malaysia Pahang, Malaysia), Muhammad Aliif Ahmad (Universiti Teknologi Malaysia, Malaysia), and Mousa Khobrani (Jazan University, Saudi Arabia)</i>	
Components For COVID19 Outbreak Control Model: A System Dynamics Perspective .....	524
<i>Aisyah Ibrahim (Universiti Malaysia Pahang, Malaysia), Tuty Asmawaty Abdul Kadir (Universiti Malaysia Pahang, Malaysia), Hamdan Daniyal (Universiti Malaysia Pahang, Malaysia), and Adzhar Kamaludin (Universiti Malaysia Pahang, Malaysia)</i>	
e-Hailing from Service Quality Perspective: A Malaysian Based Study .....	530
<i>Mohamed Jalaldeen Mohamed Razi (University of Kelaniya, Sri Lanka), Mohd Izzuddin Mohd Tamrin (International Islamic University Malaysia, Malaysia), and Rizal Mohd Nor (International Islamic University Malaysia, Malaysia)</i>	

Inventory Visibility Scenario to Reduce Safety Stock in Supply Chain Network using Blockchain Hyperledger Composer .....	535
<i>Arwa Mukhtar (Universiti Malaysia Pahang, Malaysia), Awanis Romli (Universiti Malaysia Pahang, Malaysia), Noorhuzaimi Mohd Noor (Universiti Malaysia Pahang, Malaysia), Mansoor Abdullateef (Freelance Researcher, Saudi Arabia), and Hael Al-bashiri (Universiti Malaysia Pahang, Malaysia)</i>	

## 4A: Big Data Analytics, Artificial Intelligence

Word Embedding Based Event Identification and Labeling of Connected Events from Tweets ..	541
<i>Proshanta Kumer Das (United International University, Bangladesh), Minhaj Al Banna (United International University, Bangladesh), Md. Abdullah Al Fahad (United International University, Bangladesh), Salekul Islam (United International University, Bangladesh), and Md. Saddam Hossain Mukta (United International University, Bangladesh)</i>	
Deep Learning Models for Air Pollution Forecasting in Seoul South Korea .....	547
<i>Usfita Kiftiyani (UIN Sunan Kalijaga Yogyakarta, Indonesia) and Sri Azizah Nazhifah (Syiah Kuala University, Indonesia)</i>	
Pixel-Based Feature for Android Malware Family Classification using Machine Learning Algorithms .....	552
<i>Mohd. Zamri Osman (Universiti Malaysia Pahang, Malaysia), Ahmad Firdaus Zainal Abidin (Universiti Malaysia Pahang, Malaysia), Rahiwan Nazar Romli (Universiti Malaysia Pahang, Malaysia), and Mohd Faaizie Darmawan (Universiti Teknologi Mara, Malaysia)</i>	
Thermoelectric Cooler Identification Based on Continuous-time Hammerstein Model using Metaheuristics Algorithm .....	556
<i>Julakha Jahan Jui (Universiti Malaysia Pahang (UMP), Malaysia), Mohd Ashraf Ahmad (Universiti Malaysia Pahang (UMP), Malaysia), Mohamed Sultan Mohamed Ali (Universiti Teknologi Malaysia (UTM), Malaysia), Mohd Anwar Zawawi (Universiti Malaysia Pahang (UMP), Malaysia), and Mohd Falfazli Mat Jusof (Universiti Malaysia Pahang (UMP), Malaysia)</i>	

## 4B: Cyber Security, Network

Multipath TCP Scheduling Performance Analysis and Congestion Control on Video Streaming on the MPTCP Network .....	562
<i>Muhammad Faris Imaduddin (Telkom University), Aji Gautama Putrada (Telkom University), and Siti Amatullah Karimah (Telkom University)</i>	
V-CRYPT: A Secure Visual Cryptography System .....	568
<i>Muhamad Ridhwan Bin Nashrudin (Universiti Malaysia Pahang, Malaysia), Abdullah B. Nasser (Universiti Malaysia Pahang, Malaysia), and Antar Shaddad H. Abdul-Qawy (SUMAIT University, Tanzania)</i>	

Applying Bayesian Probability for Android Malware Detection using Permission Features .....	574
<i>Sharfah Ratibah Tuan Mat (University Malaysia Pahang, Malaysia), Mohd Faizal Ab Razak (University Malaysia Pahang, Malaysia), Mohd Nizam Mohamad Kahar (University Malaysia Pahang, Malaysia), Juliza Mohamad Arif (University Malaysia Pahang, Malaysia), and Azlee Zabidi (University Malaysia Pahang, Malaysia)</i>	
A Review: Static Analysis of Android Malware and Detection Technique .....	580
<i>Juliza Mohamad Arif (Universiti Malaysia Pahang, Malaysia), Mohd Faizal Ab Razak (Universiti Malaysia Pahang, Malaysia), Suryanti Awang (Universiti Malaysia Pahang, Malaysia), Sharfah Ratibah Tuan Mat (Universiti Malaysia Pahang, Malaysia), Nor Syahidatul Nadiah Ismail (Universiti Malaysia Pahang, Malaysia), and Ahmad Firdaus (Universiti Malaysia Pahang, Malaysia)</i>	
WiroTomo SourDuino: Instrument for Measuring the Acidic Level of Home-Industry Fruit Juice Production .....	586
<i>Wahyu Rangga Pratama (Telkom University, Indonesia), Genoveva Audrey Annabella Koo (Bina Nusantara University, Indonesia), and Robertus Nugroho Perwiro Atmojo (Bina Nusantara University, Indonesia)</i>	

## 4C: IoT, Image Processing, Artificial Intelligence

Alarming Assistive Technology: An IoT Enabled Sitting Posture Monitoring System .....	592
<i>Mritha Ramalingam (University Malaysia Pahang, Malaysia), R. Puviarasi (Saveetha Institute of Medical &amp; Technical Sciences, India), Elanchezian Chinnavan (Bharathidasan University, India), Chia Shern Quah (University Malaysia Pahang, Malaysia), and Mohamad Fadli Zolkipli (Universiti Utara Malaysia Kedah, Malaysia)</i>	
Whale Optimisation Freeman Chain Code (WO-FCC) Extraction Algorithm for Handwritten Character Recognition .....	598
<i>Muhammad Arif Mohamad (Universiti Malaysia Pahang, Malaysia), Jamaludin Sallim (Universiti Malaysia Pahang, Malaysia), and Kohbalan Moorthy (Universiti Malaysia Pahang, Malaysia)</i>	
Mellrak: An Ontology Driven CDSS For Symptomassessment, Risk Assessment and Disease Analysis of Breast Cancer .....	603
<i>Sherimon P.C (Arab Open University, Sultanate of Oman), Reshmy Krishnan (Muscat College, Sultanate of Oman), and Menila James (Muscat College, Sultanate of Oman)</i>	
Word Embedding Based News Classification by using CNN .....	609
<i>Faisal Ahmed (Premier University, Bangladesh), Nazma Akther (United International University (UIU), Bangladesh), Mohammad Hasan (Premier University, Bangladesh), Kibtia Chowdhury (United International University (UIU), Bangladesh), and Md. Saddam Hossain Mukta (United International University (UIU), Bangladesh)</i>	
Towards Automated Threat Modeling of Cyber-Physical Systems .....	614
<i>Ameerah Muhsinah Jamil (Iowa State University, USA), Shifa Khan (Iowa State University, USA), Jian Kai Lee (Iowa State University, USA), and Lotfi ben Othmane (Iowa State University, USA)</i>	



## 4D: Software Engineering and Knowledge Engineering

Accuracy and Performance Analysis for Classification Algorithms Based on Biomedical Datasets .....	620
<i>Bassam Abdo Al-Hameli (Universiti Malaysia Pahang, Malaysia), AbdulRahman A. Alsewari (Universiti Malaysia Pahang, Malaysia), Mousa Khobrani (University Jazan, Kingdom of Saudi Arabia), and Mohammoud Fakhreldin (University Jazan, Kingdom of Saudi Arabia)</i>	
An Investigation of Mobile Pet Location Tracking System (PLTS) Success .....	625
<i>Tsu Ming Khor (Universiti Tunku Abdul Rahman, Malaysia), Khoo Yuen Phan (Universiti Tunku Abdul Rahman, Malaysia), Ai Ping Teoh (Universiti Sains Malaysia, Malaysia), Yin Ping Yeck (Universiti Tunku Abdul Rahman, Malaysia), Ean Heng Lim (Universiti Tunku Abdul Rahman, Malaysia), and Pei Voon Wong (Universiti Tunku Abdul Rahman, Malaysia)</i>	
Comparison of Document Similarity Algorithms in Extracting Document Keywords from an Academic Paper .....	631
<i>M. Saef Ullah Miah (Universiti Malaysia Pahang, Malaysia), Junaida Sulaiman (Universiti Malaysia Pahang, Malaysia), Saiful Azad (Green University of Bangladesh, Bangladesh), Kamal Zuhairi Zamli (Universiti Malaysia Pahang, Malaysia), and Rajan Jose (Universiti Malaysia Pahang, Malaysia)</i>	
A Study on Mental Health Discussion Through Reddit .....	637
<i>Nur Shazwani Kamarudin (Universiti Malaysia Pahang, Malaysia), Ghazaleh Beigi (Arizona State University, USA), and Huan Liu (Arizona State University, USA)</i>	
Question Classification of CoQA (QCoC) Dataset .....	644
<i>Abbas Saliimi Lokman (Universiti Malaysia Pahang, Malaysia), Mohamed Ariff Amedeen (Universiti Malaysia Pahang, Malaysia), and Ngahzaifa Ab. Ghani (Universiti Malaysia Pahang, Malaysia)</i>	

## 4E: Information Management and E-Learning

Midrange Exploration Exploitation Searching Particle Swarm Optimization in Dynamic Environment .....	649
<i>Nurul Izzatie Husna Fauzi (Universiti Malaysia Pahang, Malaysia), Zalili Musa (Universiti Malaysia Pahang, Malaysia), and Nor Saradatul Akmar Zulkifli (Universiti Malaysia Pahang, Malaysia)</i>	
Gender Differences in Computational Thinking Skills Among Malaysian's Primary School Students using Visual Programming .....	655
<i>Osmanullrazi Abdullah (University Malaysia Pahang, Malaysia), Adzhar Kamaludin (University Malaysia Pahang, Malaysia), and Nur Shamsiah Abdul Rahman (University Malaysia Pahang, Malaysia)</i>	
Analysis Youtube Activities as an Engagement Media (A Case Study at School of Information Systems BINUS University) .....	661
<i>Yohannes Kurniawan (Bina Nusantara University, Indonesia), Daniel William Wijaya (Bina Nusantara University, Indonesia), and Diego Cabezas (Peter the Great St.Petersburg Polytechnic University)</i>	

A Conceptual Review on Integration of Cognitive Load Theory and Human-Computer Interaction.. 667

*Ruksana Banu A (Muscat College, Sultanate of Oman), Wedad Salim Ali Al Siyabi (Muscat College, Sultanate of Oman), and Yusra Al Minje (Muscat College, Sultanate of Oman)*

## **4F: Information Management and E-Learning**

The Impact of Exponent Variable on the Performance and Effectiveness of FCM Algorithm for Ontology Construction in Structured Knowledge Management ..... 673

*Khalid Mahmood (Universiti Malaysia Pahang, Malaysia), M. Rahmah (Universiti Malaysia Pahang, Malaysia), Z. Fauziah (Universiti Malaysia Pahang, Malaysia), A. Nor Azhar (Universiti Malaysia Pahang, Malaysia), A. Noraziah (Universiti Malaysia Pahang, Malaysia), and M. N. Norshita (Universiti Kebangsaan Malaysia, Malaysia)*

Data Pre-Processing of Website Browsing Record: An Initial Step for Web Page Classification ..... 679

*Siti Hawa Apandi (Universiti Malaysia Pahang, Malaysia), Jamaludin Sallim (Universiti Malaysia Pahang, Malaysia), and Rozlina Mohamed (Universiti Malaysia Pahang, Malaysia)*

Speech Emotion Recognition using 2D-CNN with Data Augmentation ..... 685

*Auliya Mujaddidurrahman (Universitas Diponegoro, Indonesia), Ferda Ernawan (Universiti Malaysia Pahang, Malaysia), Adi Wibowo (Universitas Diponegoro, Indonesia), Eko Adi Sarwoko (Universitas Diponegoro, Indonesia), Aris Sugiharto (Universitas Diponegoro, Indonesia), and Muhammad Didik Rohmad Wahyudi (Universitas Islam Negeri Sunan Kalijaga, Indonesia)*

Long Short-Term Memory Approach for Wave Height Prediction: Study Case in Jakarta Bay, Indonesia ..... 690

*Agnesia Peronika Lumban Raja (Telkom University, Indonesia), Annas Wahyu Ramadhan (Telkom University, Indonesia), Didit Adytia (Telkom University, Indonesia), and Adiwijaya Adiwijaya (Telkom University, Indonesia)*

Dengue Dashboard for Forecasting the Future Trend of Dengue Cases in Pahang ..... N/A

*Muhammad Khairul Syafiq Mustafa (Universiti Malaysia Pahang, Malaysia) and Junaida Sulaiman (Universiti Malaysia Pahang, Malaysia)*

**Author Index ..... 701**