2024 International Conference on Information Technology and Computing (ICITCOM 2024)

Yogyakarta, Indonesia
7-8 August 2024

IEEE Catalog Number: CFP24UB3-POD
ISBN: 979-8-3503-7984-6

Copyright © 2024 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: CFP24UB3-POD
ISBN (Print-On-Demand): 979-8-3503-7984-6
ISBN (Online): 979-8-3503-7983-9

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
Web: www.proceedings.com

TABLE OF CONTENTS

Development of Smart Badminton Scoring System for Educational Purpose 1
Nordiana Shariffudin, Khairul F. M. Dris, Yessi Jusman, Siti N. A. B. M. Kanafiah, Ahmad F. B. A. Suhaimi, M. R. M. Nor

Innovations in Computational Intelligence Automated IoT-Based Smart Plant Watering System for Revolutionizing Plant Care 7
Siti A. Nordin, Zakiah M. Yusoff, Noor F. Razali, Ameer M. M. Hafez, Nurul N. Mohamad

Smart Garbage Monitoring System with IoT: A Solution for Overflowing Bins 12
Zakiah M. Yusoff, Khairi D. Halmee, Siti A. Nordin, Noor F. Razali, Nurlaila Ismail, Nurul N. Mohammad

An Ensemble Method to Enhance Receipt Identification in Consumer Communication using Generative AI and LSTM 18
Chanda Hirway, Enda Fallon, Paul Connolly, Kieran Flanagan

Machine Learning Innovations in Code Generation: A Systematic Literature Review of Methods, Challenges and Directions 24
Mardi S. Utomo, Ema Utami, Kusrini, Arief Setyanto

Segmentation for Lenke Scoliosis X-Ray Images using Machine Learning 30
Anna N. N. Chamim, Hasimah Ali, Yessi Jusman, Muhammad Ariffudin, Asy-Syifa F. Ananta, M. Imran Yusof

Hybrid LSTM-IoT in Agriculture: A Systematic Literature Review 36
Eddy Nurraharjo, Ema Utami, Kusrini, Kumara A. Yuana

Early Detection of Coronary Heart Disease using Exploration Data Analysis and Gradient Boosting Method 42
Slamet Riyadi, Muhammad I. Al-Habib, Fitri Alfiana, Cahya Damarjati, Yessi Jusman, Suzaimah Ramli

A Survey Study of Strategies for Improving User Interface in Mental Health 48
Bagas Wibowo, Paulus I. Santosa, Syukron A. I. Alfarozi

Mobile Puzzle Game Paper Prototype to Learn Hangul Writing 54
Reza G. Isnanda, Annisa R. Febriyanti, Cahya Damarjati, Apriliya Kurnianti

Factors Influencing Trust in Cloud Adoption for Financial Services 60
Snehal Satish, Geeta S. Nadella, Karthik Meduri, Mohan H. Maturi, Farheen Fatima, Hari Gonaygunta

Enhanced Traffic Collision Avoidance System using Single Photon LiDAR in Aviation Operations 66
Imane El Messaoudi, Nissrine El Allami, Yassine S. Alj

CrashEventLLM: Predicting System Crashes with Large Language Models 72
Priyanka Mudgal, Bijan Arbab, Swaathi S. Kumar

Automatic Calculation and Detection of Fish Maturity Levels using Imagery and CNN Methods 77
Fuzy Y. Manik, T. H. F. Harumy, Vindy R. Manurung, Dita Anggreani

Evaluation of Image Enhancement Techniques for Improving Skin Cancer Image Processing 82
Yessi Jusman, Wikan Tyassari, Aafiyah Husnaa, Dhea Namyra, Muhammad A. Hanafi, Firmansyah Nur, Jihan O. Pangestu

Design of Clinical Thermometer Calibration Instrument Based on PID System 88
Erika Loniza, Ahmad Rasyidin, Kurnia Chairunnisa

A Deep Learning Approach to Detect Cross-Site Scripting Attack as a Web Application Firewall 93
Khoerina Sa'Adah, Rayhan R. Hanaputra, Girinoto, Setiyo Cahyono

Lung Cancer Classification from CT Scan Images using the LVQ Algorithm and GLCM Feature Extraction with Spatial Filters 99
Imam Ahmad, Agung T. Prastowo, Rohmat I. Borman, Mursalim Tonggiroh, Yessi Jusman

Leveraging Social Learning for Improved Cybersecurity Maturity: A Case Study using the NIST Framework..... 105
Marcel, Meyliana Gui, Harco L. H. S. Warnars, Tirta N. Mursitama

Design and Analysis of 256 Splitter Ratio for XGS-PON FTTH Network in an Urban Area.....111
Zikra A. Sanaz, Annastya B. Dewantara, Yus Natali, Catur Apriono

Comic-Based Approach on Dark Pattern in Cookies Disclaimer 116
Hafizh A. P. Al-Faris, Harijanto Pangestu

A Clustering Approach for Wireless Sensor Networks..... 121
Israa H. A. Hadi, Saad T. Hasson

Classification of Occupant Position Based Ventilation in the Under-Actuated Zone using K-Nearest Neighbor's..... 127
Yaddarabullah, Megawati, Aedah A. Rahman, Amna Saad, Erneza D. Krishnasari

University Department Recommendations using Subject-Score-Based Skyline Queries 133
Cahya Damarjati, Galang Wicaksana, Slamet Suripto, Heri Wijayanto, Haris Setyawan, Hsing-Chung Chen

Classification Analysis of Star Hotels in Banyumas using the Random Forest Method 139
Annisaa Utami, Dimas F. H. Permadi, Bita P. Zen, Faisal D. Adhinata, Wanvy A. Saputra

Analysis of Music Genre Based on Similar Audio Features using K-Means Algorithm: A Case of Spotify Top Hits 145
Slamet Riyadi, Azhar S. Salsabila, Auliana R. P. Dewi

Predicting Age and Gender Across Different Races using Convolutional Neural Networks: A Deep Learning Approach 150
Elvina Ardelia, Jericho Thenando, Alexander A. S. Gunawan, Muhammad E. Syahputra

Classification of DGA Botnet Detection and Their Families using LSTM-Attention..... 155
Stefanus A. Kosim, Tohari Ahmad, Muhammad A. R. Putra

Analyzing Sentiment's Impact on Stock Price Prediction: A Comprehensive Survey..... 160
Safira N. Safitri, Silmi Fauziati, Indriana Hidayah

Spatial Analysis of Traffic Congestion in Urban Areas of Jakarta, Indonesia 166
Yori Yolanta, Bertrand A. L. J. Zheng, Raihan A. Haidar, Edy Irwansyah

Deep Learning Implementation with DenseNet for Alzheimer's Disease Detection in MRI..... 172
Simeon Y. Prasetyo

Retrieval-Augmented Generation for Indonesia Non-Convention Vessel Standards Exploration 178
Ashraf A. Adillah, Ivan Afrizal, Alfi Y. Zakiyyah, Meiliana

History Leap: Enhancing Historical Learning Through a Game-Based Approach 183
William, Gandhi Hartoko, Timothy Kenji, Muhamad Fajar

Training Critical Thinking and Collaboration for Young People with the Help of Video Games 189
Jeremy E. Wongso, Muhamad Fajar

Enhancing Search Efficiency: Analyzing Learning Mechanisms in Metaheuristics 195
Teddy Nurcahyadi, Christian Blum

A Confidence-Based Voting Classifier Ensemble for Effective Decentralized Botnet Detection in Network Traffic 201
Bambang M. Salim, Tohari Ahmad, Muhammad A. R. Putra

Stunting Classification in Toddlers: Implementation and Evaluation of the Decision Tree Algorithm 207
Debby Alita, Imam Ahmad, Rhaishudin J. Rumandan, Moh Erkamim, Widyasmoro

Radiosonde System using ESP32 and LoRa Ra-02 Web-Based for Upper-Air Profile Observation 213
Muchamad R. Nugraha, Putri Chairuniza, Ahmad M. Yasir, Tonny W. Aji, Aviv Maghridlo, Sugiarto, Anton Widodo, Munawar, Marzuki Sinambela

Development of an Internet of Things-Based Supervisory Control and Data Acquisition System for Wastewater Monitoring on the Communal Wastewater Treatment Plant 218
Aryuanto Soetedjo, Evy Hendriarianti

Optimizing Earthquake Forecast Through Clustering: K-Means and DBSCAN Approaches 224
Indra M. Rajagukguk, Benedictus K. Lukito, Alexander A. S. Gunawan, Muhammad E. Syahputra

Analysis of Comparison Faster R-CNN Backbone for Oil Palm Tree Counting using Drone Imagery Data 230
Dewi S. Rejeki, Edy Irwansyah, Beauty Golda

Analysis of the Potential for Solar Panel Development on House Roofs in West Jakarta, Indonesia using GIS Applications and the Mask R-CNN Model 236
Salsabila Adrian, Fisalma Maradita, Kevina D. Irisha, Edy Irwansyah

Clustering Analysis of Earthquake Based on K-Means, DBSCAN, and Fuzzy C-Means in North Sumatra 242
Marzuki Sinambela, Hanifullah H. Arrizal, Eva Darnila, Munawar, Muchamad R. Nugraha, Anton Widodo

Identification of Visitors at Tourist Destinations in Yogyakarta using GPS Data 248
Khairun Nisa, Arkham Z. Rakhman, Azkario R. Pratama, Widyawan

Identification of Non-Vehicle and Vehicle Density at Intersections Based on GPS Data 254
Qodri Aziz, Arkham Z. Rakhman, Azkario R. Pratama, Widyawan

Enhancing IoT Botnet Detection: A Comparative Study of Balancing Techniques with Naive Bayes Classifier 260
Hartono Saputro, Tohari Ahmad, Muhammad A. R. Putra

VGG19-Based Neural Style Transfer for Data Augmentation in Lung Cancer Detection 266
Rangga K. P. Wiratama, Darlis Herumurti

Architecture Design for a Smart Chatbot to Enhance English Conversation Skills using RiveScript, NLP, and ChatGPT 272
Dwijoko Purbohadi

Enhancing Healthcare: IoT-LoRaWAN System for Stress Level Monitoring 277
Nur Hayati, Iqbal R. Aldi, Widyasmoro

The Roles of Hotel Industry and Travel Agents in a Scrum Team for an Integrated Halal Tourism Application Based on Android 283
M. Asrorul Khopid, Royana Afwani, Ramaditia Dwiyansaputra, Gibran S. Nugraha, Rosiady H. Sayuti, Fahru A. H. Putrawan

Roles of AI in Healthcare 289
Noor P. Apriyanto, Nurwahyu Alamsyah, Oki Wijaya, Erika Loniza, Yekti Satriyandari

Comparison of the Latest Version of Deep Learning YOLO Model in Automatically Detecting the Ripeness Level of Oil Palm Fruit in PTPN IV, North Sumatra, Indonesia 295
Samdo J. Purba, William F. Tandion, Edy Irwansyah

Performance of the H-Butterworth, CLAHE, and HE Methods for *Adenocarcinoma* Images 301
Laila Azizah, Siti N. A. B. M. Kanafiah, Yessi Jusman, Rafikha A. A. Raof, Anani A. M. Zin, M. Y. B. Mashor

Automated Smart City Planning Through Personalized Large Language Model with Retrieval Augmented Generation 306
Nurwahyu Alamsyah, Muhamad A. Haq, Chayadi O. N. Susanto

A Digital Evidence Analysis of the Twinme Application on Android Based on INTERPOL Guidelines for Digital Forensics Laboratories 312
Nugroho A. Wibowo, Rheva A. Wijayanti, Amiruddin, Tiyas Yulita, Jeckson Sidabutar

Developing IoT-LoRaWAn Ambulance Tracking System to Enhance Emergency Response 318
Nur Hayati, Dena Arifanto, Kunnu Purwanto, Magfirawaty, R. Deiny Mardian

An 8-Bit Quantized Globalization Model for Cat Skin Disease Detection using Convolutional Neural Networks and TensorFlow Lite 323
Karisma T. Putra, Hasan Zidni, Rifdha Turrizka, Hsueh-Ting Chu, Dinh-Trung Vu, Prayitno

Evaluation of Narrative in Serious Games as an Educational Strategy on the Dangers of Smoking in Junior High School Students 328
M. N. I. Al Fauzan, Indriana Hidayah, Ridi Ferdiana, Fahmi A. Iskandar

A Comparative Study of Image Segmentation Techniques in Mammograms (Otsu Thresholding, FCM, and U-Net) 334
Hanifah R. Fajrin, Young Kim, Se D. Min

Systematic Literature Review of Software Estimation in Global Software Development 340
Arifia Kasastra, Ridi Ferdiana, Syukron A. I. Alfarozi

Design Mechanics and Gameplay using LM-GM of a Serious Game for Preventing Smoking in Teenagers 346
Fahmi A. Iskandar, Indriana Hidayah, Ridi Ferdiana, M. N. I. Al Fauzan

Developing a Pancasila-Based Dataset for AI Applications in Education 352
Gerry Firmansyah, Agung M. Widodo, Diah Aryani, Vina S. Ulfa

Author Index