

2025 10th International Conference on Business and Industrial Research (ICBIR 2025)

**Bangkok, Thailand
22-23 May 2025**



IEEE Catalog Number: CFP253P2-POD
ISBN: 979-8-3315-0249-2

**Copyright © 2025 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:	CFP253P2-POD
ISBN (Print-On-Demand):	979-8-3315-0249-2
ISBN (Online):	979-8-3315-0248-5

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

CURRAN ASSOCIATES INC.
proceedings
.com

TABLE OF CONTENTS

Innovation & Business Development in Sustainability: Zalora Earth Edit.....	1
<i>Susi Hartanto</i>	
Real-Time Traffic Management System Based on YOLOv8 and DeepSORT in a Complex Traffic Environment	7
<i>Hao Gu, Jian Qu</i>	
Explainable Image Captioning for Autonomous Driving: A Traffic Sign Recognition Task.....	13
<i>Ning Wang, Jian Qu</i>	
Optimization of Gelatin Fibrous Scaffold Properties by PCL and CMC by Using Electrospinning Technique	19
<i>Banpot Meesa, Sakon Klongboonjit</i>	
Real MIT: A Property Analysis Tool for Real Estate Investment	24
<i>Songsri Tangsripairoj, Noppasit Laopoonphol, Nattapong Mumklang, Izada Lertanantachai</i>	
Implementation of Power Supply Stabilization for e-Learning Systems in Unstable Environments	30
<i>Ryohei Ito, Yosuke Nakaya, Bishnu Prasad Gautam, Kazuhiko Sato</i>	
Simplifying Learning Analytics: REXX's Edge Over Traditional LMS Platforms.....	34
<i>Buchaputara Pansri, Worawudh Choonhapon, Kanin Wiboonsirichai, Chatchay Prempunpong, Kazuhiko Sato</i>	
Model-Based Systems Engineering in the Design and Development of Firearm Suppressors.....	40
<i>Chatchai Pornpanitpan, Yoothana Suansook, Tanongsak Taweessri, Raweevat Boonpoung</i>	
Electrospinning of Nanofibers Effect of Gelatin by Polycaprolactone and Carboxymethyl Cellulose Degradation Characteristics.....	46
<i>Banpot Meesa, Sakon Klongboonjit</i>	
AgriTech: An Integrated Web Application for Ethical Crop Management	52
<i>Aakash Khot, Sasirekha Gvk, Madhav Rao, Jyotsna Bapat</i>	
Predicting CH ₄ Emissions from Rice Production in Southeast Asia Via Feature Scaling and Polynomial Regression Modeling	58
<i>Yanisa Srikamklip, Kanda Promsorn, Nopparat Panngam, Thanaphon Phukseng, Pattharaporn Thongnim</i>	
Forest Area and Carbon Stock in Living Biomass Relationship Analysis Through Clustering and Polynomial Regression Methods	64
<i>Peerada Prasongrat, Sarida Seatiao, Pattaraporn Kidpholjaroen, Ekkapot Charoenwanit, Pattharaporn Thongnim</i>	
A Web-Based Experimental Biochemistry Virtual Laboratory for Science and Engineering Education.....	70
<i>Prakriti Dhang, Aakanksha Singh, Puja Kumari, Namrata Ganguli, Beas Mukherjee, Dibyendu Samanta, Soumya De</i>	
Diagnosis of Lung Pneumonia from X-Ray Film by Deep Learning	76
<i>Paswit Moonkan, Adna Sento</i>	

Characterizing Internet-Wide Research Scanning in Darknet Traffic Through Comparative Analysis of Detection Methods	82
<i>Takuma Shikanai, Hiroshi Tsunoda</i>	
Phytopathogenic Classification from Durian Leaves Through the Convolution Neural Network	88
<i>Sornchai Udomthanapong, Pavinee Suttiviriya, Thanaphon Phukseng</i>	
Road Hazards Monitoring and Reporting System Implementing YOLOv8 Algorithm.....	92
<i>Lorna C. Lim, Maricon R. Biron, Victoria M. Reyes, Emilyn A. Donor, Cheryl Lou R. Tinaan, Christine Stephanie A. Allenda</i>	
Bridging the Gap: Understanding Students' Volunteerism Preferences and Barriers Using Text Mining Analysis	98
<i>Joan Katherine N. Romasanta, Charlyn A. Malimata, Jozel Bryan M. Terrible, Cedrick L. Santiago, Elmer M. Alino</i>	
Food Traceability Using Blockchain Technology: Systematic Review	103
<i>Rudy Tjahyadi, Meyliana Meyliana, Harco Leslie Hendric Spits Warnars, Richard Wiputra</i>	
Harnessing Energy Using Spent Coffee Grounds.....	109
<i>Liza Marie B. Nuevo, John Paul T. Mendoza, Samantha June T. Bagutua, John Erich T. Laco, Paulo V. Malihan, William Victor M. Manlapaz, Alliah Myrtle M. Siena, Cessly P. Villafuerte, Ann-Jane L. Villanueva, Rizzamare C. Viterbo</i>	
Deep Learning-Based Electrical Load Forecasting for Optimized Energy Demand Prediction in the Luzon Grid, Philippines.....	115
<i>Stephen Keth B. Bauzon, Gilbert B. Hollman, Lyndon R. Bague, Rovenson V. Sevilla, Ryan C. Reyes, Timothy M. Amado</i>	
Comparative Analysis of Machine Learning, Deep Learning, and Large Language Models for Fake News Detection	121
<i>Rawit Wongsanganan, Narong Punkong, Pranodnard Viboonsang, Somkiat Kosolsombat, Chiabwoot Ratanavilisagul</i>	
Development of Filter Pond Cleaning Process Using Experimental Design.....	126
<i>Jirarat Teeravaraprug, Tarathorn Podcharathitikul, Arin Aonbuth, Thada Sarakool</i>	
Inspection of Heat Seal Packing Bag Integrity Using Thermal Images with YOLO Algorithm	130
<i>Jedsada Chaishome, Wirat Khannakum, Navaphattra Nunak, Taweepol Suesut</i>	
UGV Clustering Radio Signal Propagation Analysis for Sustainable Rescue Operations Using MATLAB	135
<i>Arvin Fernando, Marielet Guillermo</i>	
Designing an Evaluation Function to Enhance Task Balance in Collaborative Learning Programs	141
<i>Hidetsugu Suto, Qianran Wang</i>	
Localization and Navigation of an Autonomous Robot for Underfloor Investigation.....	147
<i>Hikaru Suzuki, Keiichiro Masuda, Shin-Ichiro Kaneko, Genci Capi</i>	
Combining Transformer and EEGNet for Image Perception Recognition Using Brain Signals	152
<i>Koki Uchihara, Yuma Sugimoto, Goragod Pongthansorn, Genci Capi</i>	
Human Motion Prediction Using EEG Data for Assistive BMI Applications	157
<i>Ao Ichikawa, Yuma Sugimoto, Goragod Pongthansorn, Genci Capi</i>	

Applying Deep Reinforcement Learning Algorithm with ResNet18 CNN for Waste Image Classification.....	162
<i>Rathavann Phally, Jongkol Janruang</i>	
Integrating Theory and Practice: Enhancing Competence Development Through Experiential Education and Project-Based Learning in Learning Factories	168
<i>Leila Zare, Felix Brunner, Francesco Santimaria, Walburga Kerschbaumer, Erwin Rauch</i>	
AI-Driven Optimization in UX Processes: A Systematic Review and the AI-DO-UX Framework	174
<i>Khonteeneung Saenghiruna, Sutham Thammawong, Siranee Nuchitprasitchai</i>	
Enhancing Financial Service Systems Through OLAP and OLTP Integration.....	180
<i>Chonchanok Wongaphai, Machigar Ongtang</i>	
Simulation System for Surviving Natural Disasters Through Virtual Reality (VR).....	186
<i>Kemachart Kemavuthanon, Osamu Uchida</i>	
Analysis of Generative AI Usage in Programming Courses: Performance and Failures.....	192
<i>Joshua J. Adriano, Ernesto R. Catabay, John Patrick M. Malay, Xian Andrei D. Verano, Jhon Alexis Gabriel L. Ng, Alexander A. Hernandez, Erlito M. Albina</i>	
Modeling of Dengue-Related Dataset Using Artificial Intelligence and Natural Language Processing.....	198
<i>Reetu K. Singh, Ghen Marilette M. Mercado, Karlos Miguel L. Serrano, Nehemiah W. Damian, Alexander A. Hernandez, Erlito M. Albina</i>	
Multi-Product Production Scheduling with Limited Warehouse Space: A Four-Step Approach.....	204
<i>Titirat Vivithkeyoonvong, Wisut Supithak</i>	
Enhanced Microhardness of Mild Steel Due to Electrodeposition of Copper Controlled by Temperature and pH	210
<i>Md. Hasan Al Nafis, Tanvir Ahmed, Md. Ehasanul Haque, Shihab Mehedi Shuvo, Maksuraton Nishat, Md. Sarowar Hossain</i>	
Clustering of Tourist Zones and Facilities Using the DBSCAN Algorithm	216
<i>Jiravadee Yoyram, Jongkol Janruang, Sanun Karnka, Drusawin Vongpramate, Kittikoon Boonkate</i>	
Low-Cost Embedded Solution for Traffic Sign Recognition on Thailand’s Asian Highways.....	222
<i>Thanakrit Methamanyanon, Thanakorn Namman, Sarunporn Ploykhoksoong, Kwanruan Rusmee, Sethakarn Prongnuch</i>	
Employee Engagement in the Digital Age: The Impact of IT-Based Solutions on HR Practices.....	228
<i>Detri Karya, Evizal Abdul Kadir, Zulkifli Rusby, Muhammad Noherman, Dedi Atri, Sri Listia Rosa</i>	
Detection of Seizures and Their Similarity in Dogs Using Deep Learning Technique.....	234
<i>Thanyasiri Nisaika, Sapransit Mruetusatorn</i>	
Effect of Sampling Time on MPC for Emergency Single-Lane Change Collision Avoidance: A Case Study of 1:10 Model RC Car.....	240
<i>Thanachot Golaz, Phichamon Tangsuksirichit, Kanticha Kittipeerachon, Mahunnop Fakkao</i>	
A Genetic Algorithm for Multi-Agent Pick-Up and Delivery Routing Problem.....	246
<i>Thongchai Phoudom, Titirat Vivithkeyoonvong, Anchalee Supithak, Mahunnop Fakkao</i>	

The Role of Digital Payment Adoption in Financial Well-Being: A TAM-Based Analysis of Gen Z Users in Jabodetabek	251
<i>Michelle Easter Feren Sambeka, Sfenrianto S. Kom. M. Kom</i>	
Performance Analysis of Hybrid Power System with Wind Farms and Conventional Generators Under Fault Conditions	257
<i>Md. Rifat Hazari, Md Abu Talha, Shameem Ahmad, Effat Jahan, Chowdhury Akram Hossain, Mohammad Abdul Mannan</i>	
Solver Modeling for Vehicle Routing Problem in Furniture Delivery	263
<i>Pongnapas Graitep, Wisut Supithak, Titirat Vivithkeeyoonvong</i>	
Bridging Language Gaps: An Offline Mobile Translation App for Filipino Dialects	269
<i>Marienel N. Velasco, Ronald John R. Villar, Dustin Kyle M. Garcia, Mark Roland A. Gaiten, Liah Allyzandra B. Santos, Dgenlord Philippe C. Leynes, Minera Laiza C. Acosta, Resylyn Z. Cabrera</i>	
Optimization of Coordinate Measurement Machine Performance Through Measuring System Analysis and Full Factorial Design	274
<i>Don Kaewdook, Therdsak Jaingam, Kitisak Chimklin</i>	
AdUTrack: A Mobile Application Tracker for Facilities Maintenance and Waste Detection Using Machine Learning at Adamson University	279
<i>Aliah M. Pascua, Cathryn Gail F. Baltazar, Miguel B. Olivares, Jaymark P. Salvador, Leonard L. Alejandro</i>	
Comparison of LSTM and TCN for Sentiment Analysis in Supporting Churn Prediction	285
<i>Made Bayu Brahmanda Dharmasaguna, Astari Retnowardhani</i>	
Strategic Moves in Succession Planning Through Game Theory	291
<i>Shichanok Klomjit, Yoothana Suansook, Chatchanin Anussornrajakit</i>	
Effect of Compound Ratio on the Elastic and Viscoelastic Properties of Carbon Black Fill Rubber	297
<i>Arthiditaya Kawetsukul, Kanyaphorn Chaiwong, Nai-Shang Liou, Prapon Ruttanatri, Niwat Moonpa</i>	
Quantifying Traffic Sign Damage Severity with a Modified Triplet Loss Network	302
<i>Chayanon Sub-R-Pa, Rung-Ching Chen</i>	
The Influence of Silica on the Dynamic Properties of Carbon Black-Filled Rubber	308
<i>Artichai Tanapeng, Chatchawan Kantala, Nai-Shang Liou, Prapon Rattanatri, Niwat Moonpa</i>	
Deep Learning-Driven Mobile Application for Rice Crop Disease Detection Using CNN	313
<i>Marienel N. Velasco, Mc Genrev P. Egar, Kaye Niña Cristobal, Emikhail Vincent P. Manalang, Lea Cydea O. Piga, Christian Paul C. Villanueva</i>	
Creation of Data Value in Data Warehouse Environment Using ETL Process	319
<i>Jirapan Rongnaimuang, Jongkol Janruang</i>	
EcoTropa: An Interactive Kids Mobile App with Machine Learning for Transforming Young Minds Towards a Sustainable Future	325
<i>Miguel B. Olivares, Aliah M. Pascua, Cathryn Gail F. Baltazar, Jaymark P. Salvador, Leonard L. Alejandro</i>	

On the Effectiveness of the ChatGPT Model with Fine-Tuning in Question-Answer Systems on Slack.....	331
<i>Hiroaki Murata, Hisashi Handa</i>	
Development of an Efficient Data Storage System for Managing Electronic Device Test Results with Apache Cassandra.....	335
<i>Peerasut Anmahapong, Nithizethe Mhuadthongon</i>	
Cooling Load Calculation for Optimized Agro-Product Preservation in Cold Storage Using Historical Weather Data.....	341
<i>Abdullah Al Noman Shompod, Md Kabiruzzaman, Shameem Ahmad, Jamiul Hasan, Md. Rifat Hazari</i>	
Machine Health Diagnosis and Prognosis: A Predictive Maintenance Approach for Fiberboard (MDF) Production	347
<i>Thattapon Surasak, Phanthika Trakunsathitman, Chatchai Wannaboon, Nattagit Jiteurtragool</i>	
Cross-Cultural Analysis of Organizational Commitment and Work Motivation Among Employees in Japan, Thailand, and Vietnam.....	353
<i>Kazuki Fujitaka, Phenpimon Wilairatana, Pichit Ngamjarussrivichai, Reiya Sakamoto, Tsutomu Kounosu</i>	
Integrating Blockchain and Smart Contracts for Carbon Credit Management in Thailand: A Preliminary Multidisciplinary Analysis.....	359
<i>Phanthika Trakunsathitman, Chiratt Chaisamran, Thattapon Surasak</i>	
An Integral Maneuvering Control of Autonomous Bicycle Using a Linear Quadratic Regulator with Luenberger Observer	365
<i>Jatupon Em-Udom, Kawiwat Amnatchotiphan</i>	
Design Consideration of Scalable and Adaptive FPGA-Based Convolutional Layer Accelerator	371
<i>Jirayu Peetakul, Sivapong Nilwong, Natthorn Chuayphan, Supaluk Prapan, Onanong Sukjai</i>	

Author Index