2026 IEEE International Conference on Instrumentation, Networks, Future Sustainability, Information Theory, Transportation, and Systems (INFINITYS 2026)

Solo, Indonesia
8-10 July 2026

IEEE Catalog Number: CFP261BD-POD
ISBN: 979-8-3195-1896-5

IEEE Advancing Technology for Humanity

Copyright © 2026, IEEE

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:	CFP261BD-POD
ISBN (Print-On-Demand):	979-8-3195-1896-5
ISBN (Online):	979-8-3195-1895-8

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

The Future of Intelligent Infrastructure: AI, Sustainability, and Human-Centered Systems 1
Endra Joelianto

Digital Marketing and the Lipstick Effect: Consumer Purchasing Decisions in Indonesia's Cosmetics Industry During Economic Crisis 9
Idi Jahidi, Selvi Lukman, Chandra Hendriyani, Rira Nuradhawati, Friska Putri Nur Satriani Muhammad Faadhilah Amaar

Real Time Environmental Monitoring with SNMP-Managed Master-Slave Sensor Networks 15
Muhammad Fahmi Santosa, Sephian Prabowo, Hadrian Javas Nibroos, A. A Rafid Raihan, Endra Joelianto

A Machine Learning–Driven Intelligent Decision Support System for Optimizing Production Capacity and Inventory Levels 22
Jonathan Hartanto, Selvi Lukman

The Application of Artificial Intelligence and Its Impact on Changes in Consumer Consumption Patterns on E-Commerce Platforms 28
Oktavian Sanjaya, Albert Sunarya, Idi Jahidi

Information Security Risk Analysis of Student Data Management Application Using ISO/IEC 27005:2022 and Personal Data Protection Law 33
Rizka Muna Mumtaza, Widia Febriyani, Ryan Adhitya Nugraha

Disease Classification in Plants Using Residual Network 39
Felix Christian Tedjawidjaja, Jason Nathaneil, Kenneth Owen Gozali, Yasi Dani, Selvi Lukman

Fracture-Informed CNN-Transformer Ensemble for Multiclass Photovoltaic Defect Segmentation in Electroluminescence Images 44
Ardian Kris Bramantyo, Yulyani Arifin

Real-Time Safety Helmet Compliance Monitoring Using AI-Driven Multi-CCTV Video Analytics 51
Dimas Lucky Setiawan, Kahlil Muchtar, Sayed Muchallil

AI-Based Disclosure System for Detecting Deceptive Online Loan Advertisements on Social Media 57
Abigaille Ollivia Wiriawan, Erwin Halim, Lusianah

AI-Powered Real-Time People Counting for Smart Library Occupancy Monitoring 63
Ahmad Khautal, Kahlil Muchtar, Sayed Muchallil

Pathway Planning Using Ant Colony Optimization 69
Shilpi Khanna, Rishi Mandal, Santripti Bajpai

Assessing Human–AI Collaboration in E-Commerce Through Cognitive Load and Usability Analysis in Indonesia 74
Alvian Shanardi Wijaya, Jessicania Windari, Felicia Evan, Rhisa Adika Putri Dewa Ayu Defina Audrey Nathania

Prediction Composite IHSG Movement Using Artificial Neural Network and Support Vector Machine 80
Thoriq Adrian Saputro, Nilo Legowo

Forecasting Market Capitalization of Sharia Banks Sector in Indonesia Stock Exchange using LSTM and ARIMA 87
Fatecha Rizqi Putra Prasetyo, Muhammad Zarlis

An Intelligent Recruitment System using Retrieval-Augmented Generation and Cross-Encoder Reranking for Automated Resume Screening 94
Eric Julianto, Dian Alhusari, Safrizal Ardana Ardiyansa, Muhammad Fazly Qusyairy, Giri Purnama Imron Rizki Maulana, Ali Muhammad, Miri Ardiansyah, Amalan Fadil Gaib, Fauzan Ihza Fajar, Nurhikam

Information-Theoretic Uncertainty Analysis for Mobile Deep Learning-Based Coffee Leaf Disease Detection 100
Fais Al Huda, Herman Tolle, Lutfi Fanani, Fitri Utaminingrum, Eluisa Escantilla-Villamor

A New Penalty Method with Various Probability Distributions for Mathematical Transportation Problems 106
Abdurrahman Rais, Sutrisno, Kartono

Air Quality Prediction in Semarang Based on a Hybrid Markov-Weighted Fuzzy Time Series Approach 111
Marlina Bertha Silaban, Bayu Surarso, Sutrisno

Design and Implementation of a Large Language Model-Based Smart Assistant to Support Daily Activities 118
Steven Johan Sutantio, Owen Theodore Yosephus, Steven Bandong

Automating the Human Factor Analysis and Classification System (HFACS) for Indonesian Land Transportation Using IndoBERT 125
Fitra Abdurrachman Bachtiar, Raihan Haikal, Ridwan Aji Budi Prasetyo

Beyond Binary Matching: Fuzzy Evaluation of Vision-Language Models for Autonomous Driving 131
Lucas Elbert Suryana, Azka Muji Burohman, Endra Joelianto

A Predictive Digital Twin with Dual-Head LSTM for Adaptive Traffic Control System on an IoT Hardware-in-the-Loop Platform 137
Maulana Fauzan Athalla Halinda, Endra Joelianto, Faqihza Mukhlish, Herman Sutarto

Grid-based Spatial Segmentation and Data Enrichment for Urban Region of Interest Profiling from Trajectory Data 142
Lizda Iswari, Adhistya Erna Permanasari, Silmi Fauziati

An ITIL-Aligned Governance Automation Framework for Hybrid ERP Invoice Workflows: A Design Science Study 149
Haniva Yuniar Praja Putri, Suryasari, Ahmad Faza

Residential Zone Traffic Sign Detection for Vietnam’s Speed Enforcement: A Two-Class YOLOv8 Dataset and Model for R420/R421 Signs 156
Ushik Shrestha Khwakhali, Hien Nguyen, Selvi Lukman, Thanh Ngoc Nguyen, Thanh Pham Hung Vu Nguyen, Rubim Shrestha, Parash Bachhar

Personally Identifiable Information Masking Pipeline for LLM-Based Conversational Banking 163
Erico Darmawan Handoyo, Spits Warnars Harco Leslie Hendric, Yohannes Kurniawan, Devi Fitrianah

A Hybrid LSTM-XGBoost Model for Real-Time Traffic Congestion Prediction in Smart Cities 170
Yasi Dani, Yurika Permanasari, Soni Yora

Design, Development, and Characterization of a Modular Valve-Type Magnetorheological Damper for Lateral Railway Suspension 177
Bi Asngali, Ubaidillah, Mahfudz Al Huda, Purwadi Joko Widodo

An Explainable Machine Learning Framework for Diabetes Progression Prediction Using Clinical Data 184
Yasi Dani, Maria Artanta Ginting, Soni Yora

RADAR: Representation-based Anomaly Detection with Adaptive Realignment for Cross-Domain Network Intrusion Detection 190
Reynard Setiawan, Filip Nathan, Felix Natan Lim, Selvi Lukman

Explainable Hybrid Deep Learning Framework for Real-Time Intelligent Urban Mobility Prediction in Smart Cities 198
Yurika Permanasari, Yasi Dani, Selvi Lukman, Andara Najla Jilan

Comparative Analysis of Vision Transformers and Convolutional Neural Networks for Student Engagement Recognition in Online Learning 206
Ahmad Fashiha Hastawan, Wei Tong Chen, Gwo-Haur Hwang

A Dynamic Hysteresis Model for Magnetorheological Dampers Based on Particle Swarm Optimization with Mesh Topology 213
Raymundus Lullus Lambang Gh, Budi Santoso, Fitrian Imaduddin, Ubaidillah

Designing Enterprise Integration System using Service Oriented Architecture in Manufacturing 220
Nilo Legowo, Matius Richard, B. Junedi Hutagaol, Sri Hesti Mahanani, Annisa Sita Pratiwi

ISO/IEC 27001:2022-based Risk Management Framework in Sharia Insurance Company 225
Yudo Novandra, Kevina Syahla Aqila, Grace Veronica Christiani Kilmakossu, Revaldy Arya Kusuma Nilo Legowo

Higher Education E-Readiness Factor Investigation in the Era of Immersive Technology by using HE-eRQ Framework 232
Cadelina Cassandra, Mohamad Noorman Masrek, Jeklin Harefa, Rudy Rudy, Desi Maya Kristin Kevin Jonathan, Rachel Chen

The Strategy Bridge: Synthesizing Methods for Business–IT Alignment in a Digital Era 238
Imtyaaz Achsanul Kamila, Sholiq Sholiq

Evaluation of Unsafe Psychosocial Condition: A Participatory Ergonomic Approach Using Video-Computer Interaction 243
Muhammad Fajar Wahyudi Rahman, Sri Gunani Partiwi, Retno Widyaningrum

Indonesian Herbal Plants Classification Using Deep Learning with CNN, Deformable CNN, and Hybrid CNN-Attention Architectures 250
Budi Juarto, Selvi Lukman, Soni Yora

Information Security Risk Assessment of the XYZ Application Based on ISO/IEC 27005 and Personal Data Protection Law: A Case Study at XYZ University 257
Susanti Afrilia, Widia Febriyani, Ryan Adhitya Nugraha

Preliminary Engineering Assessment of Condensation Risk and Aeration Performance in Vaporized Hydrogen Peroxide Decontamination of a Pharmaceutical Isolator 264
Maizal Isnen, Katherin Indriawati

Application of First-Order Markov Chain Models in Earthquake Activity Prediction 271
Dian Rakhmawati Lestari, Emmanuel Keith Hadipradja, Nadya Salsabila, Latasha Ivy Khoe, Selvi Lukman Yasi Dani

Systematic Cross-Generation Benchmark of Nano-Scale YOLO Detectors for Real-Time Tomato Leaf Disease Identification 277
Budi Juarto, Selvi Lukman

Modeling Behavioral Intention to Use Artificial Intelligence Applications Using SmartPLS Approach 284
Doni Purnama Alamsyah, Daffa Satria, Mulyana Cahya, Abira Muhammad Al Tarikh

Comparative Analysis of Oriented and Horizontal Bounding-Box Detectors for Multi-Class Industrial Screw Inspection with End-to-End Web Deployment 289
Budi Juarto, Selvi Lukman

Understanding E-Commerce Adoption: The Impact of Compatibility and Interaction Richness 296
Rayvaldo Tedjasaputra, Doni Purnama Alamsyah, Natalia Limantara

Modeling ESG-Driven Artificial Intelligence Adoption: The Influence of AI Transparency, Algorithmic Bias, and Trust 302
Vannesia Melati May, Erwin Halim, Lusianah

Emotional Intelligence as a Predictor of Academic Performance in AI-Based Learning Environments 308
Doni Purnama Alamsyah, Siti Hajar Mohamad, Nor'ain Abdullah, Nurkhalida Makmor Etsa Astridya Setiyati

Explaining Gen Z Behavioral Intention to Use Digital Life Insurance Platforms in Indonesia Through UTAUT2 and User Interface Characteristics 314
Grandie Raditya Astrotama, Arta Moro Sundjaja

Design and Implementation of a Blood Donation E- Ticket System with Real-Time Queue Management 320
Putri Feby Handayani, Arif Rahma nHakim, Dea Wemona Rahma

Self-Healing Smart Grid Architecture Using Intelligent Power Electronic Controllers 327
Venkatesh Daggupati, Ch. Naga Sai Kalyan

The Influence of Channel Integration Quality and Personalization on Continuance Intention Through Customer Experience in Alfagift Omnichannel Services 334
Kevin Nathaniel, Idi Jahidi

Simulation-Based Routing Optimization for Smart Waste Collection System Using Greedy Algorithms 341
Aisyah Talkha Erdi, Nur Afifah Zen, Indah Permatasari

Modeling and Analysis of Priority-Aware Resource Preemption in 5G NR-V2X Mode 2 Sidelink Communications 348
Chaeriah Bin Ali Wael, El Hadj Dogheche, Nasrullah Armi, Agus Subekti Budiman Putra Asma'Ur Rohman, Dayat Kurniawan, Suyoto Suyoto, Iyad Dayoub

Intelligent Video Analytics for Real-Time Worker Intrusion Detection in Restricted Industrial Zones 355
Khalif Faiz, Kahlil Muchtar, Sayed Muchallil

The Influence of Augmented Reality in E-Commerce Applications on Consumer Purchase Intention and Sustainable Entrepreneurship Practices in the Cosmetics Industry 362
Adinda Nahdah Nazila Aulia Rahmah, Freza Azzahra Qalbina, Karen Gemini Sappetaw, Riefky Prabowo Adele B L Mailangkay

Marketing Development and Competitive Advantage as Determinants of Sustainability of Food and Beverage Businesses Using QPON Application from the Customer Perspective 369
Stanley Albert Marvin, Idi Jahidi

Modeling Trust Dynamics in Sustainable Urban Food Delivery Platforms: The Role of Intelligent Recommendation Systems 375
Hendry Hartono, Angelrika Wijaya, Dimas Yudistira Nugraha, Nur Damayanti, Worry Mambusy Manotaby Goutama Bachtiar