

Conference Program

17th IIAI International Congress on Advanced Applied Informatics

December 16-18, 2024, Jakarta, Indonesia

Venue: Hotel Ciputra Jakarta

December 16: Onsite Sessions

	Victory 2 (6th floor)	Affandi (1st floor)
9:30AM-10:00AM	Registration (6th floor) & Welcome Coffee (6th floor)	
10:00AM-10:20AM	Opening Ceremony	
10:30AM-11:30AM	Keynote Session	
11:30AM-1:00PM	Lunch (Complementary, 6th floor)	
1:00PM-3:05PM	DSIR 1	SCAI 1
3:05PM-3:25PM	Coffee Break (6th and 1st floor)	
3:25PM-4:40PM	LTLE 1	ESKM 1
6:30PM-8:30PM	Welcome Reception (Complementary, 6th floor)	

December 17: Onsite Sessions

	Victory 2 (6th floor)	Affandi (1st floor)
9:00AM-10:15AM	DSIR 2	ESKM 2
10:15AM-10:35AM	Coffee Break (6th and 1st floor)	
10:35AM-11:50AM	LTLE 2	SCAI 2
11:50AM-1:00PM	Lunch (Complementary, 6th floor)	
1:00PM-2:40PM	LTLE 3	ESKM 3
2:40PM-3:00PM	Coffee Break (6th and 1st floor)	
3:00PM-4:40PM	SCAI 3	ESKM 4
6:30PM-8:30PM	Banquet & Award Presentation (Complementary, 6th floor)	

December 18: Onsite, Hybrid, and Online Sessions (GMT+7)

	Online	Affandi (1st floor) or Hybrid
9:00AM-10:15AM		SCAI 4
10:15AM-10:35AM	Coffee Break (1st floor)	
10:35AM-11:35PM		DSIR 3 + LTLE 4 (Hybrid)
11:35PM-12:40PM	Lunch (Complementary, 6th floor)	
12:40PM-1:30PM		SCAI 5 (Hybrid)
1:30PM-1:40PM	Coffee Break (1st floor) + Onsite Adjournment	
1:40PM-5:00PM	SCAI 6 + LTLE 5	

December 16 (Mon)

9:30AM-10:00AM

Registration

Morning Coffee @ Foyer

10:00AM-10:20AM

Victory 2 (6th floor) Opening Ceremony

MC: Tokuro Matsuo, Advanced Institute of Industrial Technology, Japan / International Institute of Applied Informatics

Welcome Speech and Greetings

- Congress General Chair: Kunihiko Takamatsu, Institute of Science Tokyo, Japan
- Executive Vice General Chair: Ford Lumban Gaol, Bina Nusantara University, Indonesia
- Executive Organizing Committee Vice-Chair: Yuichi Ono, University of Tsukuba, Japan
- Congress Program Chair: Katsuhide Fujita, Tokyo University of Agriculture and Technology, Japan

Conference Chairs

- ESKM 2024-Winter: Daisuke Ikeda, Kyushu University, Japan
- LTLE 2024-Winter: Yuichi Ono, University of Tsukuba, Japan
- DSIR 2024-Winter: Naruhiko Shiratori, Tokyo City University, Japan
- SCAI 2023-Winter: Takafumi Nakanishi, Musashino University, Japan

Opening Entertainment

- Indonesian Local Dance

Announcement about Social Functions, Conference Publication, Post-Conference Publication

10:30AM-11:30AM

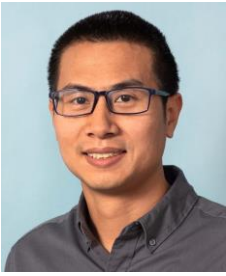
Victory 2 (6th floor) Keynote Address

Session Co-Chairs: Ford Lumban Gaol, Bina Nusantara University, Indonesia and Tokuro Matsuo, Advanced Institute of Industrial Technology, Japan / International Institute of Applied Informatics

Title: Applied Data Science in Critical Infrastructure Sectors

Keynote Speaker: Prof. Van Vung Pham, Ph.D., Computer Science Department, Sam Houston State University, Huntsville, Texas, USA

Abstract: Critical infrastructure sectors, from agriculture to transportation, are undergoing a transformative shift with advancements in data science. This talk explores how cutting-edge techniques in data analytics, machine learning, and deep learning are reshaping these domains. Key topics include interactive soil profile visualizations and soil property predictions using RDNet and WaveNet architectures, as well as innovative road damage detection and classification with state-of-the-art object detection models like Faster R-CNN and YOLO. Real-world applications of explainable AI (XAI) for feature importance analysis and advancements in biometric systems like fingerprint classification will also be discussed. Attendees will gain insights into the potential of these technologies to address critical challenges, driving efficiency, safety, and innovation across industries.



Short Bio: Dr. Pham is currently an Assistant Professor at the Computer Science Department, Sam Houston State University, Huntsville, Texas, USA. His areas of expertise centered around data visualizations, data analytics, machine learning, and deep learning. He has published one patent, various peer-reviewed journals, and conference papers. He is currently working on projects related to analyzing information about climate change. For instance, some projects use data visualizations/data analytics to analyze data collected from soil profiles. Some projects use machine learning/deep learning to predict soil properties (e.g., pHs or carbon storage) from visible and near-infrared (Vis-NIR) spectra acquired from soil profiles. He is also working on projects that use deep neural networks (e.g., YOLO, R-CNN) to solve computer vision tasks (e.g., road damage detection or brain tumor detection). He also authored the book “Hands-On Computer Vision with Detectron2” published by Packt.

11:30AM-1:00PM

Lunch @ Foyer (Complementary)

1:00PM-3:05PM

Victory 2 (6th floor) DSIR 1

Session Chair: Takaaki Ohkawauchi and Eriko Tanaka, Nihon University, Japan

Eduinformatics and the Universities' Challenge for “Ri”: A 100-Year Vision of Higher Education Transcending Time, Place, and Culture through Shu-Ha-Ri

Kunihiko Takamatsu, Koichi Akashi, Sayaka Matsumoto, Ayako Hidetani, Gen Akashi, Hibiki Ito, Katsuhiko Murakami, Kenya Bannaka, Ryosuke Kozaki, Aoi Kishida, Yasuo Nakata, Tsunenori Inakura, Shotaro Imai and Masao Mori

The Practical Application of Cluster Analysis of Academic Fields in Bibliographic Information to Enhance Research Performance Evaluation

Satoshi Ozeki

A Systematic Overview of Dropout Prediction and Evaluation in Higher Education

Takaaki Ohkawauchi and Eriko Tanaka

Investigation of Latent Effects and Changes of Adult Learners at Colleges or Graduate Schools

Yuya Yokoyama, Takaaki Hosoda, Morihiko Ikemizu and Tokuro Matsuo

Affandi (1st floor) SCAI 1

Session Chair: Yuya Yokoyama, Advanced Institute of Industrial Technology, Japan

A study of characterization of von Neumann-Morgenstern stable sets for patent licensing games

Kei Obayashi and Satoshi Takahashi

Visualization method for rhythmic differences in violin performance audio data

Miyu Momozawa, Ryotaro Okada, Ayako Minematsu and Takafumi Nakanishi

Limitation of Agents in a Node for Agent-based Human Tracking System

Kozo Tanigawa, Masaru Shiozuka and Kenichi Takahashi

Optimizing Deep Reinforcement Learning for Atari Games: A Study on Preprocessing Techniques and Neural Network Architecture

David David, Agung Trisetyarso, Lukas and Widodo Budiharto

Extraction of Gait Features for Personal Identification Using 2D LiDAR

Kozo Tanigawa, Ryota Fukumura, Daigo Misawa and Kenichi Takahashi

3:05PM-3:25PM

Coffee Break @ Foyer

3:25PM-4:40PM

Victory 2 (6th floor)LTLE 1

Session Chair: Yuichi Ono, University of Tsukuba, Japan

Design and Implementation of a Practical AI Security System Learning Kit for Intrusion Detection

Jirawan Khoprakhon, Suppachai Howimanporn and Sasithorn Chookaew

Effects of noise factors on Japanese EFL learners' listening

Rikutaka Kanayama and Yuuichi Ono

Proposal of a Learning Support System Enabling Nursing Personnel to Self-Evaluate Clinical Reasoning Ability

Reo Satou, Haruki Ueno, Yoko Tsukamoto and Hiroshi Komatugawa

Affandi (1st floor) ESKM 1

Session Chair: Daisuke Ikeda, Kyushu University, Japan

Autonomous Driving System for Multiple Mobile Robots using Roadside Cameras

Hiroto Shima, Tatsuya Ishii, Seiji Komiya and Toshihiro Wakita

Personal Spaces for Security Guard Robots in a Campus

Tatsuya Umemura, Haruki Mochizuki, Mari Ueda and Ryoza Kiyohara

Position Estimation Using CSI with Individual Differences Removed through Supervised Contrastive Learning.

Wataru Tokioka, Hidekazu Yanagimoto and Kiyota Hashimoto

6:30PM-8:30PM

Welcome Reception

Ballroom at 6th Floor

December 17 (Tue)

8:30AM-5:00PM

Registration @ Foyer

9:00AM-10:15AM

Victory 2 (6th floor)DSIR 2

Session Chair: Naruhiko Shiratori, Tokyo City University, Japan

Categorical Database for Ensuring Data Integrity in Institutional Research

Tsunenori Inakura, Shotaro Imai, Kunihiko Takamatsu, Sayaka Matsumoto and Masao Mori

Predicting Performance in First-Year Required Courses Using Machine Learning: An Analysis of Students' Learning Outcomes Based on At-Enrollment Data

Shintaro Tajiri, Kunihiko Takamatsu, Naruhiko Shiratori, Tetsuya Oishi, Masao Mori and Masao Murota

A Model for Understanding Student Status Using At-tendance Data in the First Semester of University

Naruhiko Shiratori

Affandi (1st floor) ESKM 2

Session Chair: Daisuke Ikeda, Kyushu University, Japan

Aspect-oriented Opinion Extraction with LoRA Fine-tuning and Prompt

Hidekazu Yanagimoto, Iroha Kisaku and Kiyota Hashimoto

Knowledge-based Indicative Method to Accelerate CO2 Utilization via Direct Air Capture

Tomoyuki Tateno, Naoki Ishibashi and Yasushi Kiyoki

10:15AM-10:35AM

Coffee Break @ Foyer

10:35AM-11:50AM

Victory 2 (6th floor)LTLE 2

Session Chair: Yuichi Ono, University of Tsukuba, Japan

Quantitative Evaluation of Perceived Acceptability of Accentual Patterns in Four-Mora Japanese Words Based on Lexical Attributes - for Implementation into CALL System for Japanese Learners -

Ikuyo Masuda-Katsuse and Ayako Shirose

Design Concept of Data Visualization in Developing a Supervision System for Pre-service Engineering teachers

Kanitta Hinon, Phuchit Satitpong and Kittinan Petsri

Using Multiple Software to Support Training Activity of Energy Management in Industrial Manufacturing with AIoT Technology

Suratuch Phenprasit, Suppachai Howimanporn and Sasithorn Chookaew

Affandi (1st floor) SCAI 2

Session Chair: Yuya Yokoyama, Advanced Institute of Industrial Technology, Japan

Implementation and Evaluation of a Reflection System Using Activity data and Transcript data of Participants in Group Work

Ryotaro Okada, Kaho Ogura, Akane Yoshii, Takafumi Nakanishi, Ayaka Isobe, Teru Ozawa, Yutaka Ogasawara and Kazuhiro Ohashi

Coalition Structure Generation with Priority Order of Agent Types

Tenda Okimoto and Katsutoshi Hirayama

Application of SCADA Systems using Fuzzy Logic to Control Water Temperature

Suratuch Phenprasit, Suppachai Howimanporn and Sasithorn Chookaew

11:50PM-1:00PM

Lunch @ Foyer (Complementary)

1:00PM-2:40PM

Victory 2 (6th floor)LTLE 3

Session Chair: Yuichi Ono, University of Tsukuba, Japan

Improving Remote Class UX design using Functional Resonance Analysis Method

Shigeru Kusakabe

LLMs and VR in the classroom: potential for interactive and immersive language learning

Alexander Petermaier, Katja Fraedrich, Thomas Keller and Elke Brucker-Kley

A Study of the Evaluation of the Pedagogical Effectiveness of Graph Expression of Source Code and Design Patterns

Kota Araki and Mika Ohtsuki

Affandi (1st floor) ESKM 3

Session Chair: Takaaki Hosoda, Advanced Institute of Industrial Technology, Japan

Addressing Class Imbalance in Customer Review: Analysis using Focal Loss and SVM with BERT

Zhenming Li and Kazutaka Shimada

A Relaxation Creation Method with A Knowledge Base for Environmental Actuators Control

Chinngai Li, Yasuhiro Hayashi and Yasushi Kiyoki

Using Data Across Dissimilar Domains with Technical and Legal Assurance of Privacy

Hiroshi Yoshiura, Masatsugu Ichino, Tetsuji Kuboyama, Hideki Yoshii, Yoichi Midorikawa, Shusuke Kawamura and Ryunosuke Shimmura

Waiting Time Estimation Method Using BLE and 2D-LiDAR

Koki Umekawa and Ryozo Kiyohara

2:40PM-3:00PM

Coffee Break @ Foyer

3:00PM-4:40PM

Victory 2 (6th floor)SCAI 3

Session Chair: Satoshi Takahashi, The University of Electro-Communications, Japan

Development of an Automated Control System for Optimizing Plant Growth in Limited Spaces Using Humidity Sensors and Light Settings

Saowalak Leelawongsarote and Thanaporn Patikorn

Research on Learning Advising Using Open Source LLM

Osamu Hasegawa, Taketo Tsurube, Haruki Ueno and Hiroshi Komatsugawa

Improving Image Real-Time Position Estimation in Plant Leaf Lettuce by using Neuro-Fuzzy

Suratuch Phenprasit, Sasithorn Chookaew and Suppachai Howimanporn

Light and pH Controlling of Hydroponic Cultivation Using Fuzzy Logic Control

Suratuch Phenprasit, Sasithorn Chookaew and Suppachai Howimanporn

Affandi (1st floor) ESKM 4

Session Chair: Daisuke Ikeda, Kyushu University, Japan

Customizing OpenWrt firmware on 5G Modem Routers: A Performance Evaluation

Alexander Nurenie

Design and implementation of digital student ID system based on verifiable credentials

Eisuke Ito, Takashi Yamaguchi and Ryo Itokawa

The Interaction Between Entrepreneurial Characteristics and Ecosystems in Japan: Building a New Model for Entrepreneurs

Katsuki Yasuoka, Takaaki Hosoda, Kiyomi Miyoshi, Tokuro Matsuo and Qiang Ma

6:30PM-8:30PM

Congress Banquet and Award Presentation (Complementary)

Ballroom at 6th Floor

December 18 (Wed)

9:00AM-10:15AM (GMT+7)

Affandi (1st floor) SCAI 4

Session Chair: Satoshi Takahashi, The University of Electro-Communications, Japan

Effective individual visualization of piano performance style preferences using tempo and dynamics features with AIME

Ayako Minematsu and Takafumi Nakanishi

Fine-tuning for Question Answering in Low-Resource Languages: A Case Study on Khmer

Kimleang Ly, Dona Valy and Phutphalla Kong

AI-Based Automatic Load Balancing Function in DACS-Based PBNM Scheme

Kazuya Odagiri, Shogo Shimizu and Naohiro Ishii

10:15AM-10:35AM (GMT+7)

Coffee Break (1st floor) @ Foyer

10:35AM-11:35AM (GMT+7)

Affandi (1st floor) +  Zoom: DSIR3 + LTLE 4 (20 min per presentation, including Q&A)

Session Chair: Kunihiko Takamatsu, Institute of Science Tokyo, Japan

Fortifying Abridgement Assessment System against Student Collusions by Combining Fast Text Similarity Computation and Disjoint Set Union

Koichi Akashi, Hibiki Ito, Atsuko Yamashita, Katsuhiko Murakami, Sayaka Matsumoto, Kunihiko Takamatsu and Tetsuhiro Gozu

Exploring the Modality of Network-Type Thinking in Young Children with Picture Books

Ryosuke Kozaki, Kenya Bannaka, Koichi Akashi, Hibiki Ito, Katsuhiko Murakami, Sayaka Matsumoto, Yasuhiro Kozaki and Kunihiko Takamatsu

ThriveBuddy: Towards Student Well-being Through AI-Powered Digital Mentorship

Sirinda Palahan

Scholarly Communication Research in Library and Information Science: Mapping Themes and Trends

Thoa Ninh

11:35PM-12:40PM (GMT+7)

Lunch @ Foyer (Complementary)

12:40PM-1:30PM (GMT+7)

Affandi (1st floor)+  Zoom SCAI 5 (Onsite 25 and Online 20 min per presentation, including Q&A)

Session Chair: Yuya Yokoyama, Advanced Institute of Industrial Technology, Japan

Copper as a Central Commodity in Network Analysis of Price Dynamics and Its Connection to Macroeconomic Indicators

Yoshiyuki Suimon

Robot Behavior Generation Based on "Animal Behaviors Inspired gMLP" with Environmental Event Information

Koki Sato, Ryoma Tanaka, Ryo Kobayashi, Sho Yamauchi, Keiji Suzuki and Sho'ji Suzuki

1:30PM-1:40PM (GMT+7)

Coffee Break + Onsite Conference Adjournment @ Foyer

1:40PM-5:00PM (GMT+7)

 Zoom: SCAI 6 +LTLE 5 (20 min per presentation, including Q&A)

Session Chair: Yuya Yokoyama, Advanced Institute of Industrial Technology, Japan

An algorithm for deriving weights for the Orthogonal Vector Projection Method in automated medical diagnostic reasoning

Irosh Fernando

Controlling Structural Potentiality for Prototype Networks in Multi-Layered Neural Networks

Ryotaro Kamimura

Improved Performance of a CA-SSL-based Daily Eating Sounds Recognition Model

Kazuhiro Koiwai, Toshihiro Tsukagoshi, Masafumi Nishida and Masafumi Nishimura

Sign Language Recognition for Forensic Analysis using CNN and Transfer Learning

Feriel Sghaier, Jaouhar Fattahi, Mohamed Mejri and Ridha Ghayoula

Advice Generation Using Influence Estimation on the Utterances of Elementary School Teachers

Sakuei Onishi, Hiromitsu Shiina and Tomohiko Yasumori

A Comparative Study on Artificial Neural Networks and Random Forests for Fish Weight Prediction

Nurul Firdaus

Brain Function and Autonomic Nervous System Activity while Switching from Automatic to Manual Operation in a Jumping-out Event

Yoshiki Shima and Koji Kashihara

Intelligent Cyberbullying Detection by CNN-BiGRU using Word2Vec and GloVe Word Embeddings

Jaouhar Fattahi, Feriel Sghaier, Mohamed Mejri, Ridha Ghayoula and Sahbi Bahrour

Towards Reliable and Optimized IoT Applications using Taguchi Algorithm and Intelligence

Ramzi Khedhr, Wided Amara, Ridha Ghayoula, Jaouhar Fattahi, Lassaad Latrach, Amor Smida and Mohamed Mejri

Reverse Contribution Analysis of Remote Work and Mental Health: An Approximate Inverse Model Explanations Approach

Takafumi Nakanishi

Feedback System for Teaching Activities Based on Deep Learning

Song Gao, Yu Bai and Fuzheng Zhao