Conference Program

19th IIAI International Congress on Advanced Applied Informatics

December 15-17, 2025, Phuket, Thailand

Venue: M Social Hotel

December 15: Onsite Sessions

	Room 1 (Rhythm ballroom)	Room 2 (Tempo)
8:45AM-9:15AM	Registration	
9:15AM-9:30AM	Opening Ceremony	
9:30AM-10:20AM	Keynote Session	
10:20AM-10:30AM	Cofee Break	
10:30AM-12:10PM	DSIR1 + ESKM 1	
12:10PM-1:00PM	Lunch	
1:00PM-3:30PM	DSIR2 + LTLE 1	SCAI 1
3:30PM-3:45PM	Cofee Break	
3:45PM-6:15PM	ESKM 2	SCAI 2
6:30PM-8:00PM	Welcome Reception	

December 16: Onsite Sessions

	Room 1 (Fusion 1)	Room 2 (Fusion 2)
9:00AM-10:40AM	ESKM 3	SCAI 3
10:40AM-11:00AM	Cofee Break	
11:00AM-12:15PM	ESKM 4	SCAI 4
12:15PM-1:00PM	Lunch	
1:00PM-3:30PM	LTLE 2	ESKM5 + SCAI 5
3:30PM-3:45PM	Cofee Break	
3:45PM-5:50PM	DSIR 3	SCAI 6
6:00PM-8:00PM	Banquet & Award Presentation at Rhythm Ballroom	

December 17: Onsite and Online Sessions (GMT+7)

	Room 1 and Online 1	Online 2 only
9:00AM-10:20AM	LTLE 3 + DSIR 4 + ESKM 6	SCAI 7
10:20AM-10:40AM	Cofee Break	Break
10:40AM-11:40PM	SCAI 8	
11:50PM-12:00PM	Conference Adjournment	

Note:

Onsite Presenters will have a total of 25 minutes to use for their presentation and Q&A.

Online Presenters will have 20 minutes to use for their presentation and Q&A.

December 15 (Mon)

8:45AM-5:00PM
Registration

9:15AM-9:30AM
Room 1 (Rhythm Ballroom)　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 Program Chair: Yuichi Ono, University of Tsukuba, Japan

Conference Chairs
- ESKM 2025-Winter: Daisuke Ikeda, Kyushu University, Japan
- LTLE 2025-Winter: Yuichi Ono, University of Tsukuba, Japan
- DSIR 2025-Winter: Naruhiko Shiratori, Tokyo City University, Japan
- SCAI 2025-Winter: Takafumi Nakanishi, Tokyo University of Technology, Japan

9:30AM-10:20AM
Room 1 (Rhythm Ballroom)　Keynote Address

Session Chair: TBA

Title: Educational Data Science: Changes and Challenges in Learning
Keynote Speaker: Prof. Brendan Franagan, Kyoto University, Japan

Abstract: As education technology enters the age of large-scale digital platforms, the field faces informatics challenges that resonate with broader data science and AI research: how to capture heterogeneous traces of human activity, design interoperable infrastructures, and develop transparent models that scale across domains. In this keynote, I argue for a new research agenda that positions educational data as a frontier testbed for advancing informatics: demanding innovations in interoperability, explainability, and real-world deployment.

I will present recent work on learning analytics infrastructure and standards that enable cross-institutional data sharing while respecting privacy, explainable recommendation systems that allow learners to interrogate model outputs, and shared log architectures that support reproducibility and institutional analytics. These contributions highlight how education can drive technical advances in areas such as human-in-the-loop model design and in the future federated analysis at scale.
Drawing from experience organizing international data challenges and embedding systems in production environments, I will discuss lessons learned in domain adaptation, evaluation beyond benchmark metrics, and balancing algorithmic performance with human interpretability. These challenges parallel those faced across other areas of informatics: ensuring that models are not only accurate, but also trustworthy, explainable, and adaptable to dynamic, real-world contexts.

Short Bio: Brendan Flanagan is an Associate Professor at the Center for Innovative Research and Education in Data Science, Institute for Liberal Arts and Sciences, and the Data Science Department at the Graduate School of Informatics, Kyoto University. His research interests include Learning Analytics, Educational Data Science, Computer Assisted Language Learning, and the Application of Blockchain in Education. He has also hosted educational data challenges at prominent international conferences for more than 7 years to promote educational data science research. He is currently the

Principal Investigator of several government-funded research projects that investigate knowledge and learning process analysis, and explainable predictions by learning systems, and has also part of a Japanese Cabinet Office (NEDO) funded large research project into educational symbiotic AI systems.

10:20AM-10:30AM

Foyer Coffee Break

10:30AM-12:10AM

Room 1 (Rhythm Ballroom) DSIR1 + ESKM 1

Session Chair: TBA

Effects of Career Change Opportunities for Graduates Af-ter Graduation from an Educational Institute

Yuya Yokoyama, Takaaki Hosoda, Morihiko Ikemizu and Tokuro Matsuo

Dimensionality Reduction and Visualization for Clustering of Cypher Payloads

Takeshi Matsuda, Daiki Ogawa, Chao Jinhui and Michio Sonoda

Multigroup Exploratory Factor Analysis of Entrepreneurial Characteristics: Differences by Firm Size and Revenue in Japan

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

Designing a Knowledge-Driven Team Development Framework Based on the Psychological Safety Capability Maturity Model

Yuhei Kotani and Seiko Shirasaka

12:10PM-1:00PM

Foyer Lunch

1:00PM-3:30PM

Room 1 (Rhythm Ballroom) DSIR 2 + LTLE 1

Session Chair: TBA

The Dialogic Dual-Instructor Model (DDIM): An Eduinformatics and STEAM-Oriented Approach to Effective University Teaching in Post-COVID-19 Higher Education

Kunihiko Takamatsu, Kenya Bannaka, Sayaka Matsumoto and Yasuo Nakata

Design and Implementation of a Cyclic Dropout Preven-tion Model Using Institutional Research Data

Naruhiko Shiratori

Reducing Student Hesitation through a Trial-and-Error Cyber Defense Exercise System for Security Beginners

Ichitoshi Takehara, Yuki Kami, Koji Kida and Keizo Saisho

Research on the Automation and Systematization of Learning Support with Generative AI

Kana Sunahara, Haruki Ueno, Hibiki Sato, Ginji Someya, Yasuomi Takano and Hiroshi Komatsugawa

Virtual Laboratory with CNC Simulator to Promote Vocational Students' Competency and Technology Acceptant

Nalinya Phlaiduang, Suppachai Howimanporn, Sunphong Thanok, Santi Hutamarn and Sasithorn Chookaew

Identifying challenges in predicting L2 dynamic self-confidence using speech features from unbalanced data

Yuga Omori, Mika Tamura and Daisuke Ikeda

Room 2 (Tempo) SCAI 1

Session Chair: TBA

The Breath of Music: Quantifying How Pianists' Respiration Aligns with the Score

Ayako Minematsu and Takafumi Nakanishi

Approximate Inverse Model Explanations for Metamaterial Design with Scalar-Field-Based Metal Foam Surrogates

Taku Itoh and Takafumi Nakanishi

Beyond Frequency: An Entropy Jensen–Shannon Framework for Condition-Specific Word Extraction

Fan Cheng and Takafumi Nakanishi

Multi-Agent Voltage Control for Efficient Regenerative Power Utilization in Railway Systems

Yuki Sano and Sachiyo Arai

Reflective Feedforward for Trustworthy Human–AI Dialogue: Internal and Perceptual Alignment

Takashi Matsuura and Seiko Shirasaka

Loss-Decoupled Training in Deep Image Classification: Co-optimization of Encoder and Classifier with Gaussian Mixture Model

Kataru Hara and Hironori Nakajo

3:30PM-3:45PM

Foyer Coffee Break

3:45PM-6:15PM

Room 1 (Rhythm Ballroom) ESKM 2

Session Chair: TBA

A Greedy Algorithm for Priority-Based Vehicle Routing Problem

Yuchao Guo and Masakazu Muramatsu

Toward Process Improvement Framework for Software Development Using Generative AI

Shigeru Kusakabe and Manato Tsutsushio

Reference Citation in High School Student Papers

Yuno Mikasa, Haru Ishibiki and Haruki Ono

Linking Data across Diverse Domains Using Latent Cluster with Differential Privacy

Hiroshi Yoshiura, Masatsugu Ichino, Tetsuji Kuboyama, Hideki Yoshii, Yoichi Midorikawa, Ryunosuke Shimmura and Akira Shuto

SDT-DA: A Signal Decomposition and Transform Framework with Self-Supervised Quality Assurance for Reliable Data Augmentation in HAR

Gangkai Li, Yugo Nakamura, Hyuckjin Choi and Yutaka Arakawa

Room 2 (Tempo) SCAI 2

Session Chair: TBA

Interactive XAI through Dialogue: Leveraging Approximate Inverse Model Explanations and LLM Agents

Takafumi Nakanishi

A Binary Probability Decision Tree with Youden's J Statistic: A Simpler Machine Learning Algorithm for Medical Diagnosis

Irosh Fernando

Bridging Real and Virtual Worlds: A Low-Cost MediaPipe-Based Fish Motion System for Educational Cyber-Physical Interaction

Ion Nakagawa, Ryuji Takayama, Manami Masuda, Maria Yokoi, Mizuki Nakashima and Takafumi Nakanishi

Dynamic Allocation of Ad Slots on Web Pages Using Multi-Agent Negotiation

Md Azizur Rahman and Naoki Fukuta

Smart Edge-AI Framework for Finger Motion-Based Cognitive–Motor Assessment in Web Browsers

Sinan Chen, Atsuko Hyashi and Masahide Nakamura

A Chess Move Generation Model Based on the Analysis of Human Blunders

Mai Komatsubara, Junji Nishino and Satoshi Takahashi

6:30PM-8:00PM

Welcome Reception Beast & Butterflies

December 16 (Tue)

8:45AM-5:00PM

Registration

9:00AM-10:40AM

Room 1 (Fusion 1) ESKM 3

Session Chair: TBA

Script-to-Slide Grounding: Grounding Script Sentences to Slide Objects for Automatic Instructional Video Generation

Rena Suzuki, Masato Kikuchi and Tadachika Ozono

Analysis of the Relationship Between CSR Activities for the Natural Environment and Product Sales

Toshifumi Matsuda and Kazuhiko Tsuda

Analysis of Channel State Information of Environment Change Detection Using Wavelet Aanlysis

Hidekazu Yanagimoto, Teppei Otsuki and Kiyota Hashimoto

Course Recommendation Using Fine-Tuned SBERT with LoRA

Shion Tsuchida and Minoru Sasaki

Room 2 (Fusion 2) SCAI 3

Session Chair: TBA

Development of an Automated Animation Image Coloring System Based on Inclusion Matching

Tomoya Murata and Naoki Mori

Learning-Based Scene Selection for Autonomous Multi-Camera Video Editing

Yoshiharu Tanabe and Takafumi Nakanishi

From Safety to Guidance: CBF-Augmented Reinforcement Learning with Guiding Barrier Function

Kento Nagata and Sachiyo Arai

Quantifying Function Simplicity by Arc Length: A Geometric Foundation for Explainable AI

Aimi Tozawa, Kei Murayama, Ryunosuke Oda, Nagi Yamaguchi and Takafumi Nakanishi

10:40AM-11:00AM

Foyer Coffee Break

11:00AM-12:15AM

Room 1 (Fusion 1) ESKM 4

Session Chair: TBA

Cost-effective Stationary Human Detection Using 2D LiDAR for Security Robots

Haruki Mochizuki and Ryozo Kiyohara

Self-Supervised Reward Shaping via Dynamic Potential-Based Approach

Kota Minoshima and Sachiyo Arai

Determination of Dissaving Risk against Life Expectancy for Elderly People Through Clustering Analysis Applied to Additional Anonymous Data

Yuya Yokoyama

Room 2 (Fusion 2) SCAI 4

Session Chair: TBA

Public Opinion Main Factors Extraction Method by Using Sentimental Analysis and Explainable AI and Its Application to Review Text Data for Star Wars

Akane Kikuchi and Takafumi Nakanishi

Research on Pain Detection for Japanese by multimodal AI using basic devices

Shota Ando, Haruki Ueno, Yoko Tsukamoto and Hiroshi Komatsugawa

Find Your Story: Novel Retrieval through Imaginative Summary Embeddings
Futa Tajima, Yuto Funatsu, Runa Takeuchi, Kei Kimura, Kouta Kameoka and Takafumi Nakanishi

12:15PM-1:00PM

Foyer Lunch

1:00PM-3:30PM

Room 1 (Fusion 1) LTLE 2

Session Chair: TBA

Enhancing Vocational Students' Industrial Automation Learning through OPC UA and Third-Party Protocol Integration
Bodinphat Sirithanawongsa, Suppachai Howimanporn, Sunphong Thanok, Santi Hutamarn and Sasithorn Chookaew
An Augmented Reality Application for Learning Printed Circuit Board Fabrication
Rittichai Nooson, Santi Hutamarn, Sunphong Thanok, Suppachai Howimanporn and Sasithorn Chookaew
Developing a Visual-Scaffolding-Based Computational Thinking Platform to Enhance Students' Computational Thinking and Problem-Solving Abilities
Yu-Jie Zheng and Chia-Jung Chang
Integrating Augmented Reality to Improve Students' Learning Achievement and Motivation for Stepper Motor Control using PLCs
Wisanukorn Jakkrong, Suppachai Howimanporn, Sunphong Thanok, Sasithorn Chookaew and Santi Hutamarn
A Quantitative Analysis of AI-Evaluated Educational Video Thumbnails: Correlation with Viewership
Tomohiro Kawata, Takumi Kato and Kazuhiko Tsuda

Room 2 (Fusion 2) ESKM 5 + SCAI 5

Session Chair: TBA

A consideration of Information Extraction Techniques for highly uncertain information in Agile Development
Yasuto Nishiwaki, Kenta Fukushima, Kazuyoshi Karatsuya and Kazuhiko Tsuda
Cognitive and Sentiment Analysis of Reactions to Insect-Based Foods in Japan on YouTube
Satoshi Fukuda, Emi Ishita and Hidetsugu Nanba
Towards Intelligent Document Processing: A Hybrid Generative Question Answering System with BERT-NER and Ontology-Based Context Enrichment
Muhammad Asri Safi'Ie, Nurul Firdaus and Andy Supriyadi
Persona-Conditioned Online Firestorm Risk Detection A Similarity-Based Approach with Switchable OUT/SAFE Exemplars
Ren Yamauchi, Yuki Fujimatsu, Jinyu Toida, Haruto Miyakawa, Haruto Ichikawa, Rei Oshima and Takafumi Nakanishi
A study on manga character classification based on CNN
Shuta Shimoide and Eisuke Ito
Predicting Groundwater Level Anomalies under Data Scarcity with LSTMs and Transfer Learning
Sarp Profeta, Ali Alsahag and Seyed Sahan Ziabari

3:30PM-3:45PM

Foyer Coffee Break

3:45PM-5:50PM

Room 1 (Fusion 1) DSIR 3

Session Chair: TBA

Generative AI in University Programming Courses - A Survey of Student Practices and Perspectives
Mio Tsubakimoto
Analysis of LMS Utilization Based on the Placement of Instructional Materials
Takaaki Ohkawauchi and Eriko Tanaka

Outcomes of Interdisciplinary Graduate Education - A Case Study from a Japanese University-
Ming Li, Michiyo Shimamura, Shunsuke Tao, Naoko Murakami, Linchen Wang and Yusuke Horii
High School Student Sessions at Academic Conferences in Japan: Status and Participant Attributes
Noa Iwai, Haru Ishibiki and Haruki Ono
How Early is Early Enough? A Time-Constrained Analysis of Dynamic Early Warning Systems for Academic Risk Prediction
Shintaro Tajiri, Kunihiko Takamatsu, Naruhiko Shiratori, Kimikazu Sugimori, Sayaka Matsumoto, Shotaro Imai, Tetsuya Oishi, Masao Mori and Masao Murota

Room 2 (Fusion 2) SCAI 6

Session Chair: TBA

Dense Reward Estimation for Decision Transformers Using Adversarial Inverse Reinforcement Learning
Kento Nojiri and Sachiyo Arai
Hacking the Black Box: Prompt Injection for Visualizing LLM Reasoning as Graphs
Takumi Sugimoto, Hiryu Kimura, Yuhei Yamada, Tomoki Akiyama, Minato Hojo and Takafumi Nakanishi
Towards Personalized Career Path Guidance: Integrating Personality Diagnosis with RAG-based Recommendation
Hiroto Tanaka, Toshihito Ikeya, Hiroki Takahashi, Yuzuki Okada and Takafumi Nakanishi
Improving Learning Performance of Decision Transformer via Attention-Based Reward Shaping
Yuta Ohno and Sachiyo Arai
A Scalable Reinforcement Learning via Event-Triggered Approach for Railway Systems
Hayato Chujo and Sachiyo Arai

6:00PM-8:00PM

Congress Banquet and Award Presentation
Rhythm Ballroom

December 17 (Wed)

9:00AM-10:20AM (GMT+7)

Room 1 (Fusion) +Zoom LTLE 3 +DSIR 4 + ESKM 6 (20 min per presentation, including Q&A)

Session Chair: TBA

Development of the Descriptive-Relational-Graphical (DRG) Model for Eduinformatics: Fostering Relational Understanding through Representational Transformation in Data-Driven Mathematics Education
Akira Nakamura and Kunihiko Takamatsu
Internet Fatigue as a Protective Signal in Visibility-Intensive SNS
Chie Kato
Beyond Bilateralism and Multilateralism?: The Significance of Japanese Aid to University-Level Quality Reform in Southeast Asian Engineering Education
Patrick Shorb, Toru Hayashi, Satoshi Ozeki and Yasuo Kawawaki
Image Denoising Comparing Using Median, Gaussian, and Bilateral Filters: A PSNR-Based Analysis
Atayev Ashyrgeldi, Sanggyu Shin and Yuuki Oishi

Room 2 (Online Only)Zoom: SCAI 7 (20 min per presentation, including Q&A)

Session Chair: TBA

Mapping to Vector Representations Based on Distributed Semantics for Waka
Keigo Saito and Sanggyu Shin
Listening with Confidence: Bayesian Explainable AI for Understanding Musical Preferences

Yuki Kato and Takafumi Nakanishi

Simplification Principle for Adding Complexity in Multi-Layered Neural Networks

Ryotaro Kamimura

Unpaired Image-to-Image Translation Problem via Epoch-by-Epoch Comparative using CycleGAN at Monet's Cataract Stage

Yuuki Oishi and Sanggyu Shin

Advancing Responsible AI in Finance: Applications of an Inherently Interpretable Machine Learning Modeling Approach

Annie Wu and Simon Ng

10:20AM-10:40AM (GMT+7)

Foyer Coffee Break

10:40AM-11:20AM (GMT+7)

Room 1 (Fusion) + Zoom: SCAI 8 (20 min per presentation, including Q&A)

Session Chair: TBA

Real-Time Animation of User-Drawn Images via Smoothed Skeleton Time-Series Data

Yuhei Yamada and Takafumi Nakanishi

Explainable Clustering of Skeleton Time-Series: AIME-Driven Feature Contribution Analysis of Gait Styles

Kanato Murayama and Takafumi Nakanishi

11:20AM-12:00AM (GMT+7)

Conference Adjournment