

# **Conference Program**

## **16<sup>th</sup> IIAI International Congress on Advanced Applied Informatics**

**July 6-12, 2024, Takamatsu Japan**



**Venue: Sunport Takamatsu & Kawata International Conference Center, Takamatsu, Japan**

## **July 6 (Sat) 1:30PM-5:00PM**

### **Room Foyer**

Registration and Welcome Beverage

## **July 6 (Sat) 2:30PM-5:00PM**

### **Room International Conference Center SCAI-SS1-1**

*Session Chair:*

Automatic generation of patent maps by estimating technical problems and solutions using T5

*Yuki Kobori, Hiroyuki Sakai and Kengo Enami*

Does executive compensation with ESG target improve firm's ESG performance?  
-Evidence from Japan

*Dai Yamawaki, Kaito Takano and Kei Nakagawa*

Construction of Domain-specified Japanese Large Language Model for Finance through Continual Pre-training

*Masanori Hirano and Kentaro Imajo*

DDSTM:Dynamic Dual Sparse Topic Model using Spike and Slab priors

*Tatsuki Masuda, Kei Nakagawa and Takahiro Hoshino*

Bayesian Analysis of Stochastic Conditional Duration Models with Intraday and Intra-deferred Future Seasonalities in High-frequency Commodity Market

*Tomoki Toyabe, Makoto Nakakita and Teruo Nakatsuma*

## **July 6 (Sat) 2:30PM-5:00PM**

### **Room 64 DSIR 1 + Tutorial**

*Session Chair:*

Evaluating the Effects of Pre-University Education Using Propensity Score Matching

*Keita Nishiyama*

Assessment of Study Abroad Programs as Co-Curricular Program: A Case Study of Measuring Global Competency with the MGUDS-S

*Soichiro Aihara*

Understanding ORCID Adoption Among Academic Researchers

*Stephen Porter, Paul Umbach and Chris Willis*

A Study on the Influence of Community-Based Education on Post-University Workers and Its Time Dependence

*Tatsuya Tsumagari, Yoko Nakazato and Takashi Tsumagari*

Tutorial about Higher Education Institutional Research in the UK and Ireland

*Gerald Prescott*

## **July 6 (Sat) 2:30PM-5:00PM**

**Room 65 LTLE 1 + LTLE-SS2**

*Session Chair:*

Detecting outliers from quiz response times and scores by classifying weekly learning patterns in a blended learning course

*Konomu Dobashi*

Experiments of Automatic Scoring Using Generative AI in a Summary Essay Learning System

*Takahiro Yamasaki and Ayako Hiramatsu*

Developing a Meso-Viewpoint Discussion System to Promote Online Learning Performance

*Ling-En Chien, Ming-Chaun Li, Chih-Ming Chen and Huei-Chun Huang*

Empowering Elementary Students' Scratch Programming Skills through a Jigsaw Collaborative Learning Method in a Metaverse Virtual Space

*Wan-Juan Dai, Ming-Chaun Li, Chih-Ming Chen and Ming-Yan Huang*

<b>4:45PM-5:45PM</b>	<b>Ice-cold Beer and Beverage Greeting at Foyer</b>
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## **July 7 (Sun) 9:45AM-11:50AM**

**Room International Conference Center SCAI-SS1-2**

*Session Chair:*

Analysis of the Temporal Structure in Economic Condition Assessments

*Masahiro Kato*

Error Analysis of Option Pricing via Deep PDE Solvers: Empirical Study

*Rawin Assabumrungrat, Kentaro Minami and Masanori Hirano*

Analysis of investment behavior of individual investors in the FX market: Influence of FOMC and Beige Book information

*Moeko Asano, Yoshihiko Ichikawa, Kei Nakagawa and Kaito Takano*

Optimal execution strategy using Deep Q-Network with heuristics policy

*Tatsuyoshi Ogawa, Kei Nakagawa and Kokoro Ikeda*

Measuring Semantic Similarity in Japanese Key Audit Matters

*Nobushige Doi, Yusuke Nobuta and Takeshi Mizuno*

## **July 7 (Sun) 9:45AM-11:50AM**

**Room 62 DSTM 1 + DSTM-SS2**

*Session Chair:*

A Study of the Effect of Age on Employee Engagement

*Morihiko Ikemizu and Takaaki Hosoda*

I Can See Your Voice! Analyzing Public Opinions on Urban Issues in Thailand's Khon Kaen Municipality Through Social Media

*Prasongchai Setthasuravich, Grichawat Lowatcharin, Pakpoom Phonsungnoen,*

*Kasipat Thonmanee, Pathompohn Mangma, Krisada Prachumrasee and Panpun*

*Ronghanam*

Extracting Impression from the Low-Rated Statements Posted at EC Sites

*Yuya Yokoyama, Takaaki Hosoda and Tokuro Matsuo*

Data Usage Prediction with LSTM on Customized Firmware 5G OpenWRT Modem Router

*Alexander Nurenje, Widodo Budiharto, Ford Lumban Gaol and Aditya Kurniawan*

Research on Behavioral Characteristics of Entrepreneurs

*Katsuki Yasuoka, Takaaki Hosoda, Kiyomi Miyoshi, Takuro Matsuo and Qiang Ma*

## **July 7 (Sun) 9:45AM-11:50AM**

**Room 63 DSIR-SS2 + DSIR-SS4**

*Session Chair:*

A Study on Real-Time Prediction of Course Dropout Students Using LMS Logs

*Takaaki Ohkawauchi and Eriko Tanaka*

Identifying the high risk duration to the semester to drop out of college using dropout probability

*Naruhiko Shiratori*

Analysis of Discrepancies in Learning Awareness of Data Science Across Disciplines - a Case Study of Nihon University, College of Humanities and Sciences –

*Eriko Tanaka and Takaaki Ohkawauchi*

Designing Data Science Courses to Support Non-STEM Undergraduate Students - Insights Based on Expectancy-Value Theory

*Mio Tsubakimoto*

Integrating Tableau into a First-Year Information Literacy Course: A Practical Approach to Enhancing Data Science Education

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

## **July 7 (Sun) 1:15PM-2:30PM**

### **Room International Conference Center SCAI-SS1-3**

*Session Chair:*

Bayesian Portfolio Optimization by Predictive Synthesis

*Masahiro Kato, Hibiki Kaibuchi, Kentaro Baba and Ryo Inokuchi*

Integrating Textual and Financial Time Series Data for Enhanced Forecasting

*Shangyang Mou, Qiang Xue, Wenting Zhang, Takuji Kinkyo, Shigeyuki Hamori, Jinhui Chen, Tetsuya Takiguchi and Yasuo Ariki*

## **July 7 (Sun) 1:15PM-2:30PM**

### **Room 62 BMOT 1**

*Session Chair:*

Proposal of a Tourist Attractions' Introduction Creating Tool using Deep Learning

*Takashi Hasuike, Youheng Liang, Hideki Katagiri and Hiroshi Tsuda*

Research on the Color Schemes of Event Announcement Images Using GMM

*Kayu Morishige and Shimpei Matsumoto*

Predicting Success Factors in Social Issue Crowdfunding Projects Using A Logistic Regression Analysis

*Kazuki Munehisa and Shimpei Matsumoto*

## **July 7 (Sun) 1:15PM-2:30PM**

**Room 63 DSIR 2 + DSIR-SS1**

*Session Chair:*

A Trial to Convert Graduation Competency Questionnaire Data into Key Performance Index in Japanese Medical Schools

*Koji Tsunekawa, Masako Kakizaki and Osamu Takakuwa*

Learning objectives from the syllabus and Model Core Curriculum for medical education in Japan: A case report of mapping

*Yoshikazu Asada*

Enhancing Moodle Insights: Leveraging Time Tracking Data Beyond Access Counts

*Yuji Kobayashi and Takashi Miyaura*

## **July 7 (Sun) 2:45PM-4:50PM**

**Room International Conference Center SCAI 1**

*Session Chair:*

Dataset Construction and Verification for Detecting Factual Inconsistency in Japanese Summarization

*Keisuke Iwamoto and Kazutaka Shimada*

A Simple Method to Improve Contrastive Learning for Defect Recognition with a Small Dataset

*Hirohisa Kato and Fusaomi Nagata*

Cloud-based Acute Kidney Injury and Mortality Prediction System with Machine Learning Hyperparameter Tuning Service

*Kai-Ching Chen, Mei-Ya Nian, Hsin-Yu Lee, Yi-Lun Pan and Kai-Chih Pai*

Model for Trust and Reliance on Technology: Exploring the Relationship between Trustor, Trustee, and Context

*Takashi Matsuura and Seiko Shirasaka*

## **July 7 (Sun) 2:45PM-4:50PM**

**Room 62 BMOT2**

*Session Chair:*

Research on Improving Usability of Smartphone Applications through User Interface Design Theory and Eye Tracking

*Nozomi Fujiwara and Shimpei Matsumoto*

Numerical computation of the SEIR model taking into account variations in contact rates due to diurnal human mobility

*Hiroyoshi Matsumoto, Yusuke Yamauchi and Shimpei Matsumoto*

Research on Improving Usability of Smartphone Applications through User Interface Design Theory and Eye Tracking

*Nozomi Fujiwara and Shimpei Matsumoto*

## **July 7 (Sun) 2:45PM-4:50PM**

**Room 63 ESKM 1**

*Session Chair:*

A Social Recommendation Mechanism for Esports Team up

*Chin-Yu Hsieh, Jyh-Hwa Liou and Yung-Ming Li*

Designing a Probability Disclosure Mechanism for Loot Boxes Based on Consortium Blockchain

*Yu-Hsi Ni and Yung-Ming Li*

Retrieval Augmented Generation on Hybrid Cloud: A New Architecture for Knowledge Base Systems

*Chia-Chuan Chuang and Kai-Ching Chen*

<b>5:00PM-6:00PM</b>	<b>Welcome Beverage &amp; Cocktail at Foyer</b>
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## **July 8 (Mon) 9:45AM-11:50AM**

**Room International Conference Center SCAI 2**

*Session Chair:*

Ray-Transformer Neural Radiance Field for Novel 3D View Synthesis from Single Image

*Tsung-Min Yu and Yi-Leh Wu*

Gated Convolutional Attention Networks for Predicting Adverse Birth Outcomes

*Daniel Asfaw, Ivan Jordanov, Lawrence Impey, Ana Namburete, Raymond Lee and Antoniya Georgieva*

Utilizing SAX for Enhanced Recognition of Finger Characters: A Continuous and Transitional Approach in Sign Language

*Shinpei Hagimoto, Virach Sornlertlamvanich and Takafumi Nakanishi*

Toward an Acceptable Dynamic Allocation Considering Fairness on Autonomous Car Parking

*Suma Saathvika Duddela and Naoki Fukuta*

## **July 8 (Mon) 9:45AM-11:50AM**

### **Room 62 BMOT 3**

*Session Chair:*

Empirical Analysis on the Interaction between Corporate Dynamics, Cultural Context and Economic Growth

*Yuji Tou and Akira Nagamatsu*

Understanding Convention Attendees' motivations in the Post-COVID Era: A Comparative Study of Foreign and Japanese Participants

*Hidekazu Iwamoto and Tokuro Matsuo*

Visualizing Network Relationships in Tourism: A Methodological Approach to Value Creation with Practical Application

*Nozomi Saito, Lisa Ruhanen, Koki Kusano and Seiko Shirasaka*

## **July 8 (Mon) 9:45AM-11:50AM**

### **Room 63 IDDC 1 + IDDC-SS1**

*Session Chair:*

Exploring the Potential of Novel Image-to-Text Generators as Prompt Engineers for CivitAI Models

*Sophia Song, Joy Song, Junha Lee, Younah Kang and Hoyeon Moon*

Proposal of Food Design Methods in the Age of Recipe 3.0

*Mutsumi Kodama and Taishi Nemoto*

Exploring Perceptions & Reactions to Digital Humans



*Edward Abel and Anne Dorthé Larsen*

An Analysis of Changes in the Awareness of the Teacher Who Supported to Elementary School Students the Utilization for the First Time of 1:1 Information Devices

*Mitsuhiro Watanabe and Tatsuya Horita*

**1:15PM- 1:40PM      Opening Ceremony at Int'l Conf. Center**

**1:40PM-2:20PM      Ice-Break Talk & Welcome Attraction**

## **July 8 (Mon) 2:30PM-4:10PM**

**Room International Conference Center SCAI 3**

*Session Chair:*

Investigation of the Diversity of News Reading Articles and Browsing Trends Using Sentence-BERT

*Akihisa Takiguchi, Tsunenori Mine and Yutaka Arakawa*

Application of Skeleton Image Detection in Basketball Free Throw Posture Research

*Jui-Che Hsu and Ming-Hsiang Su*

Evaluating Patient Satisfaction Through Validated Predictive Classification Models

*Nittaya Chemkomnerd, Warut Pannakkong, Van-Nam Huynh and Tanatorn Tanantong*

## **July 8 (Mon) 2:30PM-4:10PM**

**Room 62 BMOT 4**

*Session Chair:*

Decoding Scheme Considering Differences in Operator Ability for Dual Resource-Constrained Scheduling Problem

*Makoto Kimura, Aya Ishigaki and Nari Tanabe*

Proposed Analytical Process for More Convenient Utilization of Open Data - Verification Using Tourist Number Data –

*Soh Sakurai, Noriko Shibata and Akira Nagamatsu*

Dynamic Capability of SMEs under Exogenous Crises: A Case Study of SMEs Faced with COVID-19

*Kazuhisa Nakano and Naoshi Uchihira*

## **July 8 (Mon) 2:30PM-4:10PM**

**Room 63 SBIT-SS1**

*Session Chair:*

Statistical Analysis of the Influence of Service Quality on Customer Satisfaction of Information System Development

*Atsushi Shimoda and Kentaro Ichimura*

A Study on Station Power Model Index Utilizing Train Conversion Factors for Lines Serving Tokyo Prefecture.

*Yohei Hara and Hiroyuki Ono*

Changes that basic income can produce depending on economic conditions

*Kosei Takashima and Isao Yagi*

A Consideration of Analyzing the Impact of Influencer Flames

*Masaki Shibuya, Motoi Iwashita and Ken Nishimatsu*

<b>4:10PM-4:40PM</b>	<b>Keynote Address</b>
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<b>5:00PM-7:00PM</b>	<b>Welcome Reception and Poster Session at #61</b>
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## **July 8 (Mon) 5:00PM-7:00PM**

**Room 61 Welcome Reception and Poster Session**

*Session Chair:*

### **ESKM Posters**

Investigating Smart Retail Stores Adoption: An MOA Theoretical Perspective

*Chih-Jou Chen, Ju-Chuan Wu and Cheng-You Tsai*

A System for Exploring People on the Web Using Subject Headings

*Yoshitaka Shirakawa, Masayuki Shimokura, Takashi Hirata and Harumi Murakami*

### **LTLE Posters**

Development of virtual space for individualized and optimal learning

*Keiya Maruko, Shengkai Lin, Kousuke Mouri, Masaru Okamoto and Yukihiro*

*Matubara*

Investigating the Influence of Competencies and Attitudes Nurtured through K-12 Education on Student Performance in Scrum-based System Development of Project Based Learning

*Shun Sato and Hiroto Yamakawa*

Preliminary Evaluation of a Hotel English Virtual Reality Educational Game with Scenario-based Audio Feedback

*Yu-Ching Kao and Huei Tse Hou*

Changes and Trends in High School Students' Awareness of Information Ethics Following a Lecture on Information Ethics

*Sakiko Sumai, Norio Ishii, Yuri Suzuki and Ryo Miyazaki*

Design and Preliminary Evaluation of a Simulated Interview Educational Game Combined with Dynamic Situation Path Mechanisms

*Yen-Ting Ho, Yu-Cheng Lin, Pei-Ching Ngu and Huei-Tse Hou*

The Effects of Non-Violent Communication-based Emotional Education using a Digital Storytelling Platform on Adolescents' Emotional Learning: Gender differences

*Hsiu-Ling Chen and Szu-Yu Chen*

A Preliminary Study of Augmented Reality Educational Board Game Integrated with Sequence-based Cognitive Scaffolding for Learning Occupational Characteristics and Evolution

*Cheng-Tai Li, Yu-Ju Huang, Chia-Hsuan Huang, Chi-Chin Hsueh, Chieh-Yu Li and Huei Tse Hou*

Game-Based Learning in Taiwanese Science Education: Current Practices and Future Potentials

*Mingfong Jan, Tieh-Huai Chang and Kuo-Yang Chiu*

Impression Evaluation of Instructor Placement in Online Lecture Screen Displays

*Kaili Zhu, Katsumi Sato and Yoko Usui*

The Impact of Avatar Customization Flexibility on Conversational Satisfaction

*Katsumi Sato and Yoko Usui*

Using an online knowledge-construction platform to explore Collaborative inquiry activities of problem-based learning

*Yenlin Chiu*

Development of a Learning Advising System using Generative AI

*Haruki Ueno, Yasuomi Takano, Kana Sunahara, Ginji Someya, Taketo Tsurube and Hiroshi Komatsugawa*

Design a hierarchy Contextual Clue Scaffolding oriented Educational Board Game with Mobile Technology for Understanding Basic Health Care Knowledge

*Cheng-Tai Li, Chih-Yung Chien, Lu-An Chen, Li-Fang Yin, Jie-Yun Cheng, Zhuang-Hua Gan and Huei Tse Hou*

Building Cloud Base Cyber Range by Designing an Efficient Container Distribution API Using Docker

*Sanggyu Shin*

Preservice Teachers' Design Experiences of Educational Game

*Wan-Lin Yang*

An Interactive Picture Storybook Scheme for Lower-Grade Elementary Students to Learn Music and Computational Thinking

*Jun-Ming Su*

A Virtual 3D Chemistry Laboratory with an Enhanced AI Chatbot to Facilitate Learning Effectiveness

*Bo-Jing Chen, Chih-Ming Chen and Chieh-Ling Huang*

Design and Evaluation of the Framework of ChatGPT-based situational non-player character scaffolding for educational games

*Yu-Chi Chen and Huei Tse Hou*

Design of Creative Thinking Skills Training Activity using Board Game with Mobile technology

*Shi-Chian Wang, Yu-Chi Chen, Pei-Chun Chung and Huei Tse Hou*

An Educational Simulation Game Integrated with Generative AI as Conversational Contextual Scaffolding for Tourism English: A Preliminary Analysis of Learning Achievement, Self-Efficacy and Cognitive Load

*Cheng-Tai Li, Liang-Hsuan Lee and Huei Tse Hou*

## **DSIR Posters**

Context-sensitive Classification for Scientific Keywords in Grant Reports

*Michiko Yasukawa and Koichi Yamazaki*

Consistency of the I-E-O-L Model and the Guidelines for Academic Management -

Revisiting the Extended I-E-O Model for Student Survey Management -

*Sayaka Matsumoto, Kunihiro Takamatsu, Shotaro Imai, Tsunenori Inakura and Masao Mori*

Development of a convenient hearing test system for the prevention of frailty

*Mari Ueda, Kodai Odagiri and Testuo Tanaka*

Comparative analysis of high and low performers' behavior from research topic exploration to research outreach

*Kaoru Matsumoto and Masao Mori*

### **SCAI Posters**

Toward an Efficient And Resilient Electric Vehicle Charging Place Allocation Using Multiagent Approach

*Iftexhar Ahamad and Naoki Fukuta*

Simulation of pedestrian crowds using probability value cellular automata

*Yasuki Iizuka*

Enhance the Image Recognition Capabilities of Drones in Low-Light Environments

*Ching-Min Lee, Yan-Liang Pan, Chun-Hsiang Chuang and Sheng-Guan Zhang*

Multiparty Quantum Key Agreement Protocol Based on 2-qubit Grover Search with swapping

*Tzung-Her Chen*

Machine Learning Detection of Hemodialysis Arteriovenous Graft Stenosis Using Bilateral Pulse Oximetry

*Jeen-Shing Wang, Yen-Lung Tsai and Jui-Chih Chang*

Extraction of emotional patterns in novels and analysis of their transitions

*Masako Furukawa and Yoshitomo Yaginuma*

Development of an Indigenous Language Collaborative Platform for Establishing Truku Language Corpus in Taiwan

*Yihao Hsiao, Liangyu Chen, Chenyu Chiang and Mengchi Huang*

Research on Feature Selection Techniques for Support Vector Regression-based State of Health Estimation of Lithium-Ion Batteries

*Jia-Hong Fang, Yu-Shan Cheng, Yi-Hua Liu and Bo-Jhih Chen*

Automated School Lunch Menu Planning with Machine Learning Algorithms

*Hao-Yu Lin, Jeen-Shing Wang and Ya-Ting C. Yang*

A Space-Saving Algorithm for Enumerating Minimal Generators in Negative Rule Mining

*Shogo Mochizuki and Koji Iwanuma*

Predicting Length of Hospital Stay using Machine Learning

*Mari Ito, Kanade Takeuchi, Masaaki Suzuki, Aaron Aurelius, Masaki Koizumi, Akemi Yano and Sadaki Inokuchi*

Toward Parallel Task Allocation in Multi-robot Environment based on Auction Mechanism with Deadlock Constrains

*Md Sabbir Hossain and Naoki Fukuta*

Research on Pain Detection Using OpenFace

*Shota Ando, Nobuyuki Somekawa, Yoko Tsukamoto, Haruki Ueno and Hiroshi Komatsugawa*

Construction and Examination of an Emotional Speech Synthesis System Using a CNN Image Classification Model

*Sanggyu Shin*

Inverse Reinforcement Learning via Variational Attention Bottleneck

*Kao-Shing Hwang, Jin-Ling Lin and Ting-Yin Chen*

Parameter identification of the parameters of lithium-ion battery model based on metaheuristic algorithms

*Bo-Jhih Chen, Yi-Hua Liu, Yu-Shan Cheng and Jia-Hong Fang*

The Trajectory Tracking of the Quadrotor based on Backstepping Sliding Mode Control

*Shun-Hung Tsai, Pin-Yi Song, Hsuan-An Lin and Hung-Yi Lin*

## **BMOT Posters**

Digital Business Model Analysis Using Natural Language Processing

*Masahiro Watanabe and Naoshi Uchihira*

## **SBIT Posters**

Study of Modified DANP Model and System Simulation Method in E-commerce  
Logistics: Taking AMR Autonomous Mobile Robot Pickup Solution Selection as an  
Example

*Teng-Sheng Su, Shan-Ru Hu, Hui-Ting Liang, Qi-Chang Zhuang, Yi-Qing Xu, Xuan-Wei Hong and Shan-Ting Zhang*

Influence sources of Wearable Healthcare Devices Adoption and Diffusion

*Ying-Hsuan Chao and Hersen Doong*

Utilizing Social Trust Mechanisms to Minimize the Influence of False Ratings on  
Recommendation Systems

*Sin-Hua Wu and Lien-Fa Lin*

### **IDDC Posters**

A Preliminary Implementation of an Explanation Mechanism for One's Own Curiosity  
by using Ontology and Knowledge Graph

*Tomoaki Ishiguro and Naoki Fukuta*

### **DSTM Posters**

The Effect of Digital Workflows on Revenue Collection: The Case of Hotel Tax in  
Thailand

*Grichawat Lowatcharin, Prasongchai Setthasuravich, Pakpoom Phonsungnoen,  
Kasipat Thonmanee, Pathompohn Mangma, Krisada Prachumrasee and Panpun  
Ronghanam*

A Study on Classification of Word-of-Mouth Information Using BERT

*Takaaki Hosoda, Yuya Yokoyama and Tokuro Matsuo*

DH Dilemma: Analyzing Moral Hazard in MLB Pitching Decisions

*Wen-Jhan Jane*

Proposal of a Dual System Model for the Consensus Building Process in the Problem  
Formulation Process in Groups

*Hiroyuki Furuya, Takaaki Hosoda and Tokuro Matsuo*

**July 9 (Tue) 9:45AM-11:50AM**

**Room International Conference Center SCAI 4**

*Session Chair:*

Noh's choreography systematization and diversity strategy for Service Robots

*Masahiko Narita*

Game Recommendation based on Reviews and Neighbor Interaction with Generative Adversarial Networks

*Duen-Ren Liu, Bo-Yi Pei and Jian-Heng Chen*

Reducing Redundant Computation in Multi-Agent Coordination through Locally Centralized Execution

*Yidong Bai and Toshiharu Sugawara*

Cascading Taxonomic Attention Networks for Hierarchical Text Classification

*Koichi Tanigaki, Koji Cho and Shuichi Tokumoto*

Consumer Price Index Dynamics Unveiled: Approximate Inverse Model Explanations (AIME) of News Text Data and Consumer Price Index data

*Kunihiko Hayashi and Takafumi Nakanishi*

## **July 9 (Tue) 9:45AM-11:50AM**

### **Room 61 LTLE 2**

*Session Chair:*

A Study on Analysis of Learning Process in Programming Learning Support System by Card Operation

*Natsumi Tanabe and Shimpei Matsumoto*

A Study on Quantitative Quality Evaluation of the Impact of Indentation in Source Code Using Eye-Tracking

*Kou Yorimoto and Shimpei Matsumoto*

Cultivating Effective Classroom Management: The Implementation of an Adaptive Gamification Platform

*Chi-Fang Chang, Tsung-Yen Chuang, Wei-Fan Chen and Yen-Ning Su*

## **July 9 (Tue) 9:45AM-11:50AM**

### **Room 62 SBIT 1**

*Session Chair:*



Jumpstarting and Evolving a Software Quality Management Initiative: From Pre-Web to DevOps

*James Cusick*

Development of Teaching Methods in Basic Nursing Education Using Process Flow Diagram

*Hanae Okamoto, Kiyoko Tokunaga, Katsuaki Suzuki and Hideto Ogasawara*

A case study on the internal process re-engineering of traditional industry from a resource-based perspective

*Che-Yu Hung, Sheng-Pin Wu, Chien-Chih Wang and Tai-Yu Lin*

## **July 9 (Tue) 9:45AM-11:50AM**

**Room 63 ESKM-SS3-1**

*Session Chair:*

Improving Interpretability in Document-Level Polarity Classification by Applying Attention

*Shingo Kato and Daisuke Ikeda*

Extracting Long COVID Knowledge from LitCovid: A Glossary-Based Approach

*Atsuko Yamaguchi, Reo Takeda and Yuka Tateisi*

Comparison with Detection of Bacteria from Gram Stained Smears Images by Various Object Detectors

*Tsubasa Tanaka and Kouichi Hirata*

## **July 9 (Tue) 1:00PM-2:15PM**

**Room International Conference Center SCAI 5**

*Session Chair:*

Almost Order Preserving Matching

*Wen-Wen Liao and Chang-Biau Yang*

A Method for Determining Utterance-Response Relationships between Japanese Novel Lines for Constructing a Daily Dialogue Corpus

*Kazuma Iwamoto and Kazuaki Ando*

Time Scale Analysis of Long Sequential Robot Behavior Generated by gMLP

*Koki Sato, Ryo Kobayashi, Sho Yamauchi and Keiji Suzuki*

## **July 9 (Tue) 1:00PM-2:15PM**

### **Room 61 LTLE 3**

*Session Chair:*

Subject Relevance Visualization using Word2Box

*Youji Ochi and Nanako Hashimoto*

Towards Human-Level Evaluation: Assessing the Potential of GPT-4 in Automated Evaluation and Feedback Generation on Japanese Essays

*Sayaka Nakamoto, Yoshiaki Okamoto, Takashi Nakakouchi and Kazutaka Shimada*

The Impact of Collaborative Digital Reading Annotation System on Learning Performance and Motivation in Solving Mathematical Application Problems

*Shu-Hsuan Chiu, Ming-Chaun Li, Chih-Ming Chen and Fu-Hsiu Kuo*

AIME Image Insights: Transforming Image Recognition with Approximate Inverse Model Explanations

*Takafumi Nakanishi*

## **July 9 (Tue) 1:00PM-2:15PM**

### **Room 62 BMOT 5**

*Session Chair:*

Dynamic subscription pricing for digital service platform

*Cheng-Han Wu and Ling-Ya Huang*

ABM Demonstrates New Successful Diversity Approach for Team Building and Outcomes

*Junji Ochi, Jun-Ichi Asaka, Kenta Abe, Kentaro Iwata and Hisashi Hayashi*

## **July 9 (Tue) 1:00PM-2:15PM**

### **Room 63 DSTM-SS1**

*Session Chair:*

Community Settlement of Local Vitalization Cooperator: Case study of the "Sakawa Invention Lab"

*Osamu Nakajima*

Analysis of Factors Influencing the Decision-Making of the Elderly

*Eriko Musashi, Takaaki Hosoda and Daisuke Ikeda*

## **July 9 (Tue) 2:45PM-4:50PM**

**Room International Conference Center SCAI 6**

*Session Chair:*

Orthogonal vector projection method for medical diagnosis

*Irosh Fernando*

Estimating the Impact of Classroom Speech Using a Large Language Model

*Sakuei Onishi, Syosei Kojima, Hiromitsu Shiina and Tomohiko Yasumori*

Simulation of Classroom Speech by Elementary School Teachers Using a Large Language Model with LoRA Hyperparameter

*Syosei Kojima, Sakuei Onishi, Hiromitsu Shiina and Tomohiko Yasumori*

## **July 9 (Tue) 2:45PM-4:50PM**

**Room 61 LTLE 4**

*Session Chair:*

Development and implementation results of a DX literacy standard skills survey using generative AI

*Masahiro Sakamoto, Yukihiro Matsubara and Kousuke Mouri*

Parent-Child Interaction in Game-Based Learning

*Ming-Chaun Li, Chin-Chung Tsai and Huei Tse Hou*

Humor, mankind's greatest blessing: Exploring the relationship between sense of humor and psychological well-being among high school students in Taiwan

*Chih-An Lin*

Improvement of Argumentation Structure Visualization for Feedback on Students' Reports

*Sora Toyama, Satoru Kogure, Yasuhiro Noguchi, Koichi Yamashita and Tatsuihiro Konishi*

## **July 9 (Tue) 2:45PM-4:50PM**

**Room 62 DSIR 3 + DSIR-SS3**

*Session Chair:*

Beyond Silos: Eduinformatics as a Catalyst for Dissolving Faculty and Staff Boundaries in Higher Education

*Kunihiko Takamatsu, Sayaka Matsumoto, Naruhiko Shiratori, Ikuhiro Noda, Shintaro Tajiri, Kenya Bannaka, Yasuhiro Kozaki, Hibiki Ito, Shotaro Imai, Yasuo Nakata and Masao Mori*

A Survey on Self-Perception of Institutional Research Skills and Knowledge by Focusing on the Gap with the Participants Needs of Training Courses

*Tetsuya Oishi and Takashi Nishide*

Effects and Limitations of University Information Disclosure: A Study on the Impact on University Choice

*Nozomi Yoshida and Rie Mori*

Current Status and Issues Concerning the Formulation and Operation of Mid-Term Plans for Japanese National Universities - Based on the Results of a Questionnaire Survey

*Tetsuya Oishi, Eiichi Takata, Masao Mori, Kunihiko Takamatsu, Takahiro Seki and Kahori Ogashiwa*

## **July 9 (Tue) 2:45PM-4:50PM**

**Room 63 ESKM-SS3-2**

*Session Chair:*

Activation Functions for Detection of Bacteria from Gram Stained Smears Images by YOLOv8

*Kouya Kagemoto and Kouichi Hirata*

Annotation along Arranged Bacteria to Detect Gram Positive Cocci from Gram Stained Smears Images

*Ukyo Kashino, Mayu Yoshida and Kouichi Hirata*

Data Augmentation for Detection of Bacteria from Gram Stained Smears Images by YOLOv8

*Ryunosuke Nakajo, Minori Tsutsui and Kouichi Hirata*

<b>5:30PM-6:15PM</b>	<b>Bus Departure</b>
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<b>6:30PM-8:00PM</b>	<b>Conference Banquet</b>
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## **July 10 (Wed) 9:45AM-11:50AM**

### **Room International Conference Center SCAI 7**

*Session Chair:*

Adding Gaussian Noise to Sparse Frames from a mmWave Radar for Improving HAR

*Taku Watanabe and Runhe Huang*

Investigating Nonparametric Testing in Event Detection for Non-intrusive Load Monitoring

*Men Shen Tsai and Yen-Kuang Lin*

Detection of pre shoplifting suspicious behavior using deep learning

*Sujan Shrestha, Yoji Taniguchi and Tetsuo Tanaka*

## **July 10 (Wed) 9:45AM-11:50AM**

### **Room 61 LTLE 5**

*Session Chair:*

Programming Education Methods for Elementary School Students and Their Relation with Personal Preferences

*Emi Ichimura and Tomonari Kamba*

Development of a Learning Support System for Improving Metacognition in Programming Exercises

*Teppei Oyama and Koji Kagawa*

A Cooperative Card Game for Learning Social Media Etiquette

*Toshiki Katanosaka, Fahim Khan and Ken Sakamura*

Preliminary Study of Teachers' Opinions on the Effective Use of Digital Textbooks

*Fumiko Yagisawa, Motoko Asato and Tatsuya Horita*

Visualization for easier recognition of low-risk and successful passes in a Basketball match

*Taketo Shibasaki, Kenji Matsuura, Hironori Takeuchi and Tetsushi Ueta*

## **July 10 (Wed) 9:45AM-11:50AM**

### **Room 62 IDDC 2**

*Session Chair:*

Development and Proposal of an Interactive Educational Platform Based on the Concept of Augmented Intelligence

*Kazuya Murata and Taishi Nemoto*

P Analyzing User Behavior in Scenario-based Virtual Reality Environments using Knowledge Graphs

*Kensuke Taninaka, Yoshiki Furuya, Keigo Sakamoto, Tsunenori Mine and Shogo Fukushima*

Improving Text Generation on Images with Synthetic Captions

*Junyoung Koh, Sanghyun Park and Joy Song*

## **July 10 (Wed) 9:45AM-11:50AM**

### **Room 63 ESKM 2**

*Session Chair:*

Exploring Relationships Between People and Organizations: A Digital Humanities Research Tool Based on AI Technology for Knowledge Graph Analysis

*Chien-Yun Liang, Ming-Chaun Li, Chih-Ming Chen and Chun-Yu Lin*

Defect Detection and Visualization of Understanding Using Fully Convolutional Data Description Models

*Fusaomi Nagata, Shingo Sakata, Hirohisa Kato, Keigo Watanabe and Maki K. Habib*

A time-dependent Markov GWR model of the flow of people in Kyoto City

*Hiroshi Tsuda and Yu Ichifuji*

Table-To-Text Using Pretrained Large Language Model and LoR

*Hidekazu Yanagimoto, Iroha Kisaku and Kiyota Hashimoto*

Uncovering the Critical Traits of Sustainable Brand Success in the Attention Economy from Social Media

*Shih-Ya Liao and Yung-Ming Li*

## **July 10 (Wed) 1:00PM-2:15PM**

### **Room International Conference Center SCAI 8**

*Session Chair:*

Enhancing Book Discovery: A Personalized Recommender System Powered by Large Language Models

*Te-Chuan Lin and Yung-Ming Li*

A Fast Season Length Estimation using Sliding Discrete Fourier Transform for Time Series Streaming Data

*Thanapol Phungtua-Eng and Yoshitaka Yamamoto*

## **July 10 (Wed) 1:00PM-2:15PM**

**Room 61 LTLE 6**

*Session Chair:*

Book Title Recognition on 360VR Images for VR Tour of Library Building

*Yoshihiro Okada, Wei Shi and Kosuke Kaneko*

Construction of Comprehensive Student Support Using Metaverse Platforms in a Distance Learning University

*Keisuke Misono and Kazuya Murata*

## **July 10 (Wed) 1:00PM-2:15PM**

**Room 62 SBIT 2**

*Session Chair:*

Distributed hierarchical AI architecture for meta-described local dynamic maps in autonomous driving

*Hiroshi Miyata, Masatoshi Saitoh, Kazutami Arimoto, Atsushi Hayami, Hisayoshi Mizuno, Yukihiro Shimazu and Tomoyuki Yokogawa*

Analysis of Consumers' Willingness to Pay for Eco-Friendly Insulation Tape and Its Influencing Factors

*Chien-Chih Wang, Bo-Yi He and Che-Yu Hung*

## **July 10 (Wed) 1:00PM-2:15PM**

**Room 63 ESKM-SS1 + EAKM-SS2**

*Session Chair:*

Global-Local Consistency for Cost-Effective Anomaly Localization with Point Annotations

*Keiichi Nakanishi, Ryoya Katafuchi and Terumasa Tokunaga*

Ancestral-Path Descendant-Labels Histogram Distance for Rooted Labeled Trees

*Daisuke Abe and Kouichi Hirata*

## **July 10 (Wed) 2:45PM-4:50PM**

### **Room International Conference Center SCAI 9**

*Session Chair:*

An Active Listening Dialogue Model Focused on “Open Questions” using  
Reinforcement Learning

*Nana Matsumoto and Kazuaki Ando*

Surface Defect Detection in Industrial Parts Using the YOLO-based Method with  
Enhanced Spatial Features and Attention Mechanism

*Zhi-Juan Jian and Ming-Hsiang Su*

No-code/low-code ophthalmic lens design using a genetic algorithm that simplifies  
optical design simulation

*Shin Kubota, Kenichi Tabei, Kazuhiko Oonuma and Hisashi Hayashi*

## **July 10 (Wed) 2:45PM-4:50PM**

### **Room 61 LTLE 7**

*Session Chair:*

Development of Score Measurement and Attack Functions in a Security Exercise  
System Enable Trial-and-Error

*Ichitoshi Takehara, Yuki Kami, Hitoshi Kamei, Koji Kida and Keizo Saisho*

A teaching materials recommendation system considering individual characteristics

*Chengjiu Yin, Ryoya Shiroki, Huiyong Li and Lin Lin*

The Development of Robot-embedded Cyber-Physical Learning Environment for  
Enhancing Learners’ STEM Competencies

*Chih-Chien Hu, Imam Yuadi, Ming-Hsien Chen and Hsieh-Chang Huang*

## **July 10 (Wed) 2:45PM-4:50PM**

### **Room 62 SBIT 3**

*Session Chair:*

Development of a Communication Analysis System for Detecting Isolated Users in  
Slack



*Ryosuke Takizawa, Isshin Nakao, Kensuke Taninaka, Akihisa Takiguchi, Toshiki Hayashida, Hiromu Motomatsu and Yutaka Arakawa*

Personalized E-shopping Recommendations for Sustainable Consumption

*Chin-Hsuan Lo and Lien-Fa Lin*

## **July 10 (Wed) 2:45PM-4:50PM**

**Room 63 ESKM 3**

*Session Chair:*

Generating High-Quality Distributed Representations of Words Using Wiktionary and Sentence-BERT

*Ryota Nishiura, Seiji Tsuchiya and Hirokazu Watabe*

NLPDedup: Using Natural Language Processing for Data Deduplication

*Hinata Yokoyama, Kazuma Iwamoto, Ichitoshi Takehara, Kazuaki Ando and Hitoshi Kamei*

Metaphor detection with additional auxiliary context

*Takuya Hayashi and Minoru Sasaki*

A Drug Abuse Detection Based on User Behavior and Linguistic Style

*Tian-Jyun Tseng and Yung-Ming Li*

Sense Tagged Example Generation Using BERTScore

*Hyuga Nagatomo and Minoru Sasaki*

<b>5:00PM-6:30PM</b>	<b>Farewell Reception &amp; Wine, Beer, and Beverages</b>
<b>at Foyer</b>	

## **July 11 (Thu) 9:45AM-11:50AM**

**Room International Conference Center SCAI 10**

*Session Chair:*

Multimodal Adaptive Structural Deep Belief Network for Emotion Recognition on RAVDESS Dataset

*Shin Kamada and Takumi Ichimura*

Wavelet coherence of COVID-19 pandemic variables in Japan

*Goizalde Badiola and Manuel Graña*

Implementation Method of an Autonomous Art Exhibition System with Open-Source Hardware

*Yosuke Tsuchiya and Naoki Ishibashi*

## **July 11 (Thu) 9:45AM-11:50AM**

### **Room 61 LTLE 8**

*Session Chair:*

Examining Critical Thinking Skills in Game-Based Learning: A Behavioral Analysis Approach

*Tsung-Yen Chuang, Yu-Hsuan Lu, Szu-Kai Tsai and Wei-Fan Chen*

Optimizing an Automatic Text Analysis Model with Generative Artificial Intelligence System for Gaming Strategic Behaviors

*Geng-De Hong, Ju-Ling Shih, George Ghinea, Yu-Hao Lu and Hsuan-Wen Chen*

The Learning Effectiveness of IoT-enhanced Historical Role-Play Educational Game < Unveil Dutch Times >

*Hsuan-Wen Chen, Ju-Ling Shih, Yueh-Chi Wang, Geng-De Hong and Yu-Hao Lu*

## **July 11 (Thu) 9:45AM-11:50AM**

### **Room 62 ESKM 4**

*Session Chair:*

Virtual Drum System Development using Motion Detection

*Soonmin Hong, Stephen Karungaru and Kenji Terada*

Automatic Few-shot Selection on In-Context Learning for Aspect Term Extraction

*Koki Imazato and Kazutaka Shimada*

A tool for associative text analysis to enhance efficiency in exploring historical texts

*Tien-Fu Chang, Ming-Chaun Li, Chih-Ming Chen and Xian-Xu Chen*

## **July 11 (Thu) 9:45AM-11:50AM**

### **Room 63 SCAI 11 + SCAI-SS2**

*Session Chair:*

Minimizing Model Misclassification using Regularized Loss Interpretability

*Elyes Manai, Mohamed Mejri and Jaouhar Fattahi*

Relationship between qualitative expressions in MD&A and managements' forecast accuracy

*Yutaka Kuroki, Kei Nakagawa and Kiyoshi Yakabi*

Classification of Capacitor Bank Switching using Fuzzy Interference Systems in 230 kV Substation

*Theerasak Patcharoen, Chaichan Pothisarn, Atthapol Ngaopitakkul, Santipont Ananwattanaporn, Praikanok Lertwanitrot and Suntiti Yoomak*

Comparative Study for Discrete Wavelet Transform between Single and Double Detection Approach to Fault Classification on Transmission Line

*Praikanok Lertwanitrot, Atthapol Ngaopitakkul and Santipont Ananwattanaporn*

## **July 11 (Thu) 1:00PM-2:15PM**

**Room International Conference Center SCAI 12 (Onsite + Online)**

*Session Chair:*

Congestion Alleviation and Efficiency Improvement in Large-Scale Pedestrian Facilities through Optimization of Pre-Evacuation Times

*Junyu Li, Go Inoue, Rie Sato, Atsushi Shibata, Jun Ito and Hisashi Hayashi*

Greenwashing Detection Mechanism based on Multimodal Analysis and Social Intelligence

*Shih-Yuan Huang and Yung-Ming Li*

## **July 11 (Thu) 1:00PM-2:15PM**

**Room 61 BMOT 6**

*Session Chair:*

What Triggers Migrant Entrepreneurs to Move to Depopulated Areas?

*Osamu Nakajima and Hidekazu Iwamoto*

Improvement of Examining method with Construal Level Theory Perspective for Reward-Based Crowdfunding Performance

*Lei Zhou, Fuminori Kimura and Hersen Doong*

## **July 11 (Thu) 1:00PM-2:15PM**

**Room 62 ESKM 5**

*Session Chair:*

YODA: Middleware of Static Analysis Tools for IoT Firmware - Proposal and  
Evaluation of Time Reducing Mechanisms for Setup, Preprocessing, and Analysis  
*Minami Yoda, Shigeo Nakamura, Yuichi Sei, Yutaka Matsuno, Yasuyuki Tahara and  
Akihiko Ohsuga*

4-gram Applied to English Q&A Statements to Obtain Factor Scores  
*Yuya Yokoyama*

## **July 11 (Thu) 1:00PM-2:15PM**

**Room 63 LTLE 9 (Onsite + Online)**

*Session Chair:*

Effectiveness of Pitch Discrimination Practice Using a Method of Listening for Pitch in  
a Learner's Own Voice Quality  
*Kazuki Sato, Katsumi Sato, Yoko Usui, Yoshikazu Watarai and Junya Oikawa*

Building Cloud Base Cyber Range by Designing an Efficient Container Distribution  
API Using Docker  
*Sanggyu Shin*

## **July 11 (Thu) 2:45PM-4:00PM**

**Room International Conference Center SCAI 14**

*Session Chair:*

Skeleton Detection Using Dual Radars with Integration of Dual-View CNN Models and  
mmPose  
*Masaharu Kodama and Runhe Huang*

Application of Yolov5-based Image Recognition Model in Product Categorization  
*Chun-Yu Lin and Ming-Hsiang Su*

## **July 11 (Thu) 2:45PM-4:00PM**

**Room 61 LTLE 10 + LTLE-SS1**

*Session Chair:*

Confidence effects in an EMI classroom about using transcription tools for Chinese-  
speaking students

*Wen-Chun Lin, Yan-Yi Chen, Yu-Chi Yeh and Chih-Kai Chang*

Exploring Elementary School Students' Perceptions Towards Socioscientific Issues  
Through the Role-Playing Game Perceptions

*Yu-Hao Lu, Ju-Ling Shih, Pin-Chen Chen, Geng-De Hong and Hsuan-Wen Chen*

## **July 11 (Thu) 2:45PM-4:00PM**

**Room 62 BMOT 7 + BMOT-SS1**

*Session Chair:*

Application of Analytic Hierarchy Process for Order Assignment to Affiliated Stores

*Takaki Kawamoto and Takashi Hasuike*

Influences of Prolonged Internships on University Students' Attitudinal Shifts within  
the Hospitality and Tourism Sectors - Insights and Implications from Survey Data –

*Masashi Ishitani*

## **July 11 (Thu) 2:45PM-4:00PM**

**Room 63 SCAI 13 (Onsite + Online)**

*Session Chair:*

Forced and Natural Creative-Prototype Learning for Interpreting Multi-Layered Neural  
Networks

*Ryotaro Kamimura*

Association Rule Breaking Based Diversity for Recommender Systems

*Edward Abel and Andrew Goddard*

Construction and Examination of an Emotional Speech Synthesis System Using a CNN  
Image Classification Model

*Sanggyu Shin*

<b>5:00PM-6:30PM</b>	<b>Ice-cold beer Networking Reception &amp;</b>
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<b>Conference Adjournment at Foyer</b>
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