

# Conference Program

15<sup>th</sup> IIAI International Congress on Advanced Applied Informatics

December 11-13, 2023, Bali, Indonesia

Venue: Bali Dynasty Resort

## December 11: Onsite Sessions

	Nusa Pedina 1	Nusa Pedina 2	Nusa Lembongan
9:30AM-10:30AM	Registration & Welcome Coffee		
10:30AM-11:30AM		Opening Ceremony	
11:30AM-1:00PM	Lunch		
1:00PM-3:05PM		SCAI 1	DSIR 1
3:05PM-3:25PM	Coffee Break		
3:25PM-5:05PM	SCAI 2	SCAI 3	ESKM 1
6:00PM-8:00PM	Welcome Reception		

## December 12: Onsite Sessions

	Nusa Pedina 1	Nusa Pedina 2	Nusa Lembongan
9:00AM-10:40AM	LTLE 1	SCAI 4	ESKM 2
10:40AM-11:00AM	Coffee Break		
11:00AM-12:00PM		Keynote Session	
12:00PM-1:15PM	Lunch		
1:15PM-2:55PM	LTLE 2	SCAI 5	DSIR 2
2:55PM-3:15PM	Coffee Break		
3:15PM-4:55PM	SCAI 6	SCAI 7	ESKM 3
6:00PM-8:00PM	Banquet & Award Presentation		

## December 13: Online Sessions (GMT+8)

	Online 1	Online 2
8:00AM-10:00AM	ESKM 4	SCAI 8
10:00AM-10:10AM	Break	Break
10:10AM-12:30PM	LTLE 3	ESKM 5
12:30PM-1:00PM	Lunch on your own	Lunch on your own
1:00PM-2:30PM	Invited Talks	
2:30PM-2:40PM	Break	Break
2:40PM-5:40PM	LTLE 4 & DSIR 3	SCAI 9

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## December 11 (Mon)

### 9:30AM-5:00PM

Registration

Morning Coffee @ Foyer

### 10:30AM-11:30AM

Nusa Pedina 2      **Opening Ceremony**

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

#### Welcome Speech and Greetings

- Congress General Chair: Yuichi Ono, University of Tsukuba, Japan
- Executive Vice General Chair: Ford Lumban Gaol, Bina Nusantara University, Indonesia
- Congress Program Chair: Kunihiko Takamatsu, Tokyo Institute of Technology, Japan

#### VVIP Guest Introduction

- Bapak Ir. Bernard Gunawan, CEO of Bina Nusantara Foundation, Indonesia
- Dr. Hiroshi Hashimoto, President of Advanced Institute of Industrial Technology / Board of Director, Tokyo Metropolitan Public University Corporation, Japan
- Prof. Dr. Tirta Nugraha Mursitama, Ph.D., Vice-Rector of Bina Nusantara University, Indonesia

#### Conference Chairs

- ESKM 2023-Winter: Daisuke Ikeda, Kyushu University, Japan
- LTLE 2023-Winter: Yuichi Ono, University of Tsukuba, Japan
- DSIR 2023-Winter: Yoshikazu Asada, Jichi Medical University, Japan
- SCAI 2023-Winter: Katsuhide Fujita, Tokyo University of Agriculture and Technology, Japan

#### Opening Gong

- Bapak Ir. Bernard Gunawan, CEO of Bina Nusantara Foundation, Indonesia
- Dr. Hiroshi Hashimoto, President of Advanced Institute of Industrial Technology / Board of Director, Tokyo Metropolitan Public University Corporation, Japan
- Prof. Dr. Tirta Nugraha Mursitama, Ph.D., Vice-Rector of Bina Nusantara University, Indonesia

#### Opening Entertainment

- Bali Local Dance

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

### 11:30AM-1:00PM

Foyer      **Lunch**

### 1:00PM-3:05PM

Nusa Pedina 2      **SCAI 1**

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

Enhancing the Generalization Performance of Drowsiness Estimation AI in Drivers using Time-Series Data from FAU with Limited Datasets

*Tomoya Kubo, Tomoyuki Yokogawa, Kazutami Arimoto, Masaki Hokari and Isao Kayano*

A Complexity Feature Extraction Method by Chord Progression and Transition Density for Music Media Content

*Ayako Sugiyama, Ryotaro Okada, Ayako Minematsu and Takafumi Nakanishi*

Gaze Direction Classification Using Vision Transformer

*Shogo Matsuno, Daiki Niikura and Kiyohiko Abe*

## **Nusa Lembongan DSIR 1**

**Session Chair: Kunihiko Takamatsu, Tokyo Institute of Technology, Japan**

Proposing a new field: Institutional Research (IR) Philosophy based on Eduinformatics — Bridging the Gap Between Practice and Theory in IR

*Kunihiko Takamatsu, Taion Kunisaki, Kenya Bannaka, Katsuhiko Murakami, Takafumi Kirimura, Ryosuke Kozaki, Sayaka Matsumoto, Aoi Kishida, Hibiki Ito, Yasuhiro Kozaki, Shotaro Imai, Yasuo Nakata and Masao Mori*

Launch Out on a Practical Platform for Institutional Research Toward Sharing of Its Technology and Knowledge

*Shotaro Imai, Yoshikazu Asada, Akira Ito, Toshiki Katanosaka, Aoi Kishida, Naruhiko Shiratori, Kunihiko Takamatsu, Sayaka Matsumoto and Masao Mori*

Survey Analysis of Students' Attitudes in PBL Activities

*Takaaki Hosoda, Koji Okazaki and Tokuro Matsuo*

## **3:05PM-3:25PM**

**Foyer Coffee Break**

## **3:25PM-5:05PM**

**Nusa Pedina 1 SCAI 2**

**Session Chair: Hisashi Hayashi, Advanced Institute of Industrial Technology, Japan**

Genetic Algorithm for Prompt Engineering with Novel Genetic Operators

*Hiroto Tanaka, Naoki Mori and Makoto Okada*

Analysis of LLM-Based Narrative Generation using the Agent-based Simulation

*Naoto Aoki, Naoki Mori and Makoto Okada*

Banking method: dealing with resource token bias in a P2P human resource sharing PF

*Miki Saito, Kenta Abe and Hisashi Hayashi*

**Nusa Pedina 2 SCAI 3**

**Session Chair: Ford Lumban Gaol, Bina Nusantara University, Indonesia**

Epistemic stance and Contextualization on MLM and NSP: How Japanese Chatbots recognize the long-distance cohesion between utterances

*Kaoru Amino*

Trainable Weighted Pooling Method for Text Classification with BERT

*Hidenori Yamato, Makoto Okada and Naoki Mori*

A Novel AutoAugment utilizing Surrogate Model-Based Thermodynamical Genetic Algorithm

*Takumi Washino and Naoki Mori*

Enhancing Classification Performance through the Synergistic Use of XGBoost, TABPFN, and LGBM Models

*Sarwo Sarwo, Yulius Denny Prabowo and Sarwo Sarwo*

## **Nusa Lembongan ESKM 1**

**Session Chair: Kiyota Hashimoto, Shunan Public University, Japan / Prince of Songkla University, Phuket, Thailand**

Impression and Suitability of Q&A Statements through Factor Scores Using 2-gram

*Yuya Yokoyama*

Analysis of Tourist Behavior Between Tourist Spots Depending on Tourists' Residence Area Using Location-based Data

*Yu Ichifuji and Daisuke Murakami*

Moisture Detection Using CSI of Reflected Radio Waves

*Hidekazu Yanagimoto, Watru Tokioka, Kiyota Hashimoto and Tokuro Matsuo*

**6:00PM-7:30PM**

**Welcome Reception**

**Gracie Kellys Irish Pub**

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**December 12 (Tue)**

**8:30AM-5:00PM**

**Registration**

**9:00AM-10:40AM**

**Nusa Pedina 1      LTLE 1**

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

Effects of Habit-Enhanced Assignment Design on Learning Behaviors and Psychological Factors of Japanese EFL Learners Under a Distant Online Learning Environment

*Asuka Takahashi and Yuichi Ono*

Assessment of ChatGPT's Validity in Scoring Essays by Foreign Language Learners of Japanese and English

*Ayaka Obata, Takumi Tagawa and Yuichi Ono*

Effects of AR educational games on spatial ability of primary school students

*Hainachuan Huang, Ping Yin, Yuhua Zhang and Su Cai*

Design of an Employment Ethics Educational Mobile Game Combined with Realistic Situations

*Yu-Chi Chen and Huei Tse Hou*

**Nusa Pedina 2      SCAI 4**

*Session Chair: Hisashi Hayashi, Advanced Institute of Industrial Technology, Japan*

A User-Devised Search Query and Clustering Technique for Searching through Research Papers

*Satoshi Fukuda*

Objective-Driven Modular and Hybrid Approach Combining Machine Learning and Ontology

*Ouassila Labbani Narsis, Erik Dujardin and Christophe Nicolle*

IoT/AI Technology for Aqua Colony

*Toru Kobayashi, Yudai Tanaka, Daiki Togawa, Junpei Takaishi, Rina Ishishita, Kazuki Fukae, Tetsuo Imai and Kenichi Arai*

Factor Extraction of Preference in Musical Performances Using AIME with Focus on Time-Series Derivative Features

*Ayako Minematsu and Takafumi Nakanishi*

## **Nusa Lembongan ESKM 2**

**Session Chair: Daisuke Ikeda, Kyushu University, Japan**

A Novel Classification System for Faster Assessment of IDS Alerts Using Convolutional Neural Network

*Satoshi Kimura and Hiroyuki Inaba*

Business Model Proposal for Agriculture and Tourism Business Sectors Supported by ICT System in Nepal through Systematic Business Analysis Process

*Pabitra Chaudhary and Koji Okada*

Basic investigation of code edit distance measurement by CodeBERT

*Wakana Hashimoto, Masahito Yasui and Kazuhiro Takeuchi*

Simulation Modeling of a Conceptual Model for Supply Chain Risks in Japan's Automobile Industry

*Toko Sasaki and Akira Nagamatsu*

## **10:40AM-11:00AM**

**Foyer Coffee Break**

## **11:00AM-12:00PM**

**Nusa Pedina 2 Keynote Address**

**Session Chair: Yuichi Ono, University of Tsukuba, Japan**

**Keynote Speaker: Prof. Ir. Linawati, M.Eng., Sc., Ph.D., Udayana University, Bali, Indonesia**

## **12:00PM-1:15PM**

**Foyer Lunch**

## **1:15PM-2:55PM**

**Nusa Pedina 1 LTLE 2**

**Session Chair: Yuichi Ono, University of Tsukuba, Japan**

Changes in students' motivation to study and their predictions -Verification of similarity to radioactive decay of atoms for changes in motivation and these predictive equations-

*Katsuichi Higuchi, Hiroshi Konashi and Kenji Kume*

The Effect of Classroom Interventions of Reflection and Foreseeing on Mitigating Passive Procrastination in a Hybrid Learning Environment

*Rika Yaguchi and Yuichi Ono*

One Solution to the Cost-Sharing Issue by the Sweden Game Experiment and Educational Effects

*Masashi Kawaguchi, Takashi Kusaka, Naohiro Ishii and Masayoshi Umeno*

**Nusa Pedina 2 SCAI 5**

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

Scam Email Clustering by Ordered Pair of Modality Representations and Dimensionality Reduction

*Takeshi Matsuda, Takeshi Fujimaki and Michio Sonoda*

Identification of Fake News in Low Resource Language: A Deep Learning Approach

*Raquiba Sultana and Tetsuro Nishino*

Country by Country Comparison of Thumbnail Features Contributing to Views Using AIME for YouTube

*Rintaro Fukui, Ryotaro Okada, Ayako Minematsu and Takafumi Nakanishi*

## **Nusa Lembongan DSIR 2**

*Session Chair: Kunihiko Takamatsu, Tokyo Institute of Technology, Japan*

Predicting Student Dropout Risk Using LMS Logs

*Takaaki Ohkawauchi and Eriko Tanaka*

Student Retention Factors in a Teacher-Training Course

*Eriko Tanaka, Takaaki Ohkawauchi and Atsushi Fujihira*

Gender Equality and Digital Education as Catalysts for Economic Growth: A Comparative Study of Japan and the Nordic Countries

*Noriko Ito, Yoshiro Seki, Masao Mori and Nobuhiko Seki*

## **2:55PM-3:15PM**

**Foyer Coffee Break**

## **3:15PM-4:55PM**

**Nusa Pedina 1 SCAI 6**

*Session Chair: Kiyota Hashimoto, Shunan University, Japan / Prince of Songkla University, Phuket, Thailand*

Parameter Optimization of PI Controller for Three-Phase Permanent Magnet Synchronous Motor

*Chang-Yu Chiang, Yi-Hua Liu, Kun-Che Ho and Ying-Yu Shih*

Adaptive Retraining Head Selection Method in Vision Transformer

*Kaoru Ito and Naoki Mori*

Multi-agent Reinforcement Learning with Emergent Communication using Discrete and Indifferentiable Message

*Hiroto Ebara, Tomoaki Nakamura, Akira Taniguchi and Tadahiro Taniguchi*

**Nusa Pedina 2 SCAI 7**

*Session Chair: Takafumi Nakanishi, Musashino University, Japan*

Integrated Analysis by Utilizing AIME: Unveiling Correlations and Identifying Keywords for SDG Achievement through Country Action Plans and Scores

*Takafumi Nakanishi*

A Dynamic Balancing Framework for Facial Expression Recognition in Games

*Adewirya Niko Sidharta, Maverick Sean Therry, Jurike V. Moniaga and Andry Chowanda*

Off-Rhythm Detection System for Beginner Violinists

*Miyu Momozawa, Ryotaro Okada, Ayako Minematsu and Takafumi Nakanishi*

**Nusa Lembongan ESKM 3**

*Session Chair: Tetsuya Nakatoh, Nakamura Gakuen University, Japan*

Visualization of Members' Activities in a Series of Group Works by Time-series Feature Comparison Method

*Rikito Ohnishi, Ryotaro Okada, Yuki Murakami, Takafumi Nakanishi, Teru Ozawa, Yutaka Ogasawara and Kazuhiro Ohashi*

Analysis of Factors Affecting Hotel Occupancy Rate

*Saya Koderu, Akihisa Kodate and Yu Ichifuji*

Prototyping an Agent for Dynamic Generation of Attack-Payloads in Web Application Vulnerability Assessment

*Suzuki Ryotaro and Naoki Fukuta*

## **6:00PM-7:30PM**

**Congress Banquet and Award Presentation**

**The Upper Deck @H2O**

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## December 13 (Wed)

### 8:00AM-10:00AM (GMT+8)

#### Zoom 1 (Breakout room 1)

#### ESKM 4

*Session Chair: Harco Leslie Hendric Spits Warnars, Bina Nusantara University, Indonesia*

Drug Demand Prediction Based on Epidemiology Factors Using Random Forest

*Gunadi Emmanuel, Muhammad Zarlis, Yulyani Arifin and Ivico Sonata*

Door Locking System Based on Fingerprint and LoRa Wireless Technology

*Yulianto Yulianto, Nyoman Wira Prasetya and Andhika Pramahyianto*

Effectiveness of Refactoring Techniques to maximize Code Coverage Metric

*Johannes Simatupang, Haryono Soeparno, Ford Lumban Gaol and Yulyani Arifin*

Proposal on a choreographic systematization for Service Robots with Referencing Noh and Ninyo Joruri, Traditional Japanese Performing arts

*Masahiko Narita, Sachiko Nakagawa and Yasufumi Takama*

Towards a Tourist Village Ontology for Tourism Management Systems

*Nurul Firdaus*

#### Zoom 2 (Breakout room 2)

#### SCAI 8

*Session Chair: Katsuhide Fujita, Tokyo University of Agriculture and Technology, Japan*

Transformer and CNN Comparison for Time Series Classification Model

*Ivico Sonata and Yaya Heryadi*

SimilaCode: Programming Source Code Similarity Detection System based on NLP

*Diego Vallejo, Jair Morocho and Juan Salgado*

Detection of Cardiovascular Disease Using Machine Learning Algorithms and Principal Component Analysis

*Pradipta Syifa Narfian, Dylan Christiandi Halim, Albert Nathan Sembiring, Renaldy Fredyan and Hady Pranoto*

Deep Learning-Based Brain Tumor Prediction: An Analysis of Performance Evaluation of Convolutional Neural Network

*Jason Jason, Felix Venesius, Yonatan Sie, Renaldy Fredyan and Hady Pranoto*

A Neuroevolution Approach to Keypoint-based Sign Language Fingerspelling Classification

*Jordan J. Bird, Isibor Kennedy Ihianle, Pedro Machado, David J. Brown and Ahmad Lotfi*

Development of Cough Detection Pre-screening System Architecture Methodology using PSKVE-S with a Design Thinking Approach

*Arifa Fauziya and Armein Z R Langi*

### 10:00AM-10:10AM (GMT+8)

#### Break

### 10:10AM-12:30PM (GMT+8)

#### Zoom 1 (Breakout room 1)

#### LTLE 3

*Session Chair: Haryono Soeparno, Bina Nusantara University, Indonesia*

An Attempt at Peer Learning with Explanation in Introductory Programming Education

*Satoshi Cho and Hisashi Sato*

How Smartphone Natives can learn Animation Principle: Introductory Animation Class for Students with No Art Background

*Yoriko Murakami and Hisashi Sato*

Experiment design and verification for assessing the acquisition of strategic planning ability

*Natchanon Manatphaiboon, Shogo Hamachi, Zeynep Yucel, Pattara Leelaprute and Akito Monden*

Dependence of perception of vocabulary difficulty on contexture

*Parisa Supitayakul, Rika Kuramitsu, Zeynep Yucel, Akito Monden and Koichi Takeuchi*

Developing Interactive Learning Media Design for Futuristic Learning Activities

*Matthew Anderson Chandra, Nyoman Wira Dhimas Arya Dhanendra, Reynard Renato, Renaldy Fredyan and Hady Pranoto*

## **Zoom 2 (Breakout room 2)**

## **ESKM 5**

**Session Chair: Sanggyu Shin, Tokai University, Japan**

The Impact of Emotion Recognition Models Towards Believability Factor of Chatbots

*Rhio Sutoyo, Harco Leslie Hendric Spits Warnars, Sani Muhamad Isa and Widodo Budiharto*

Analyzing the Impact of Service Design on Maintainability Factor in Microservices Architecture

*Gintoro, Ford Lumban Gaol, Haryono Soeparno and Yulyani Arifin*

The Definition of De-identification by Act on the Protection of Personal Information and International Standard Framework for De-identification

*Sanggyu Shin*

Analyzing the Impact of Customer Service Chatbots on User Satisfaction

*Elkana Rahadian Putra Antonio, Muhammad Farras Fadhilah Fadhilah, Fikri Faiq, Renaldy Fredyan and Hady Pranoto*

The Role of Industry 4.0 Technology in Enhancing SMEs Stability and Growth

*Yuthsi Aprilinda, Harco Leslie Hendric Spits Warnars, Meyliana Meyliana and Harjanto Prabowo*

Parallel Task Allocation in Multi-robot Environment under Uncertainty based on Auction Mechanism

*Md Sabbir Hossain, Ihsan Ibrahim and Naoki Fukuta*

Neural Network and Resampling to Handle Imbalance Class on Estimate Software Defect

*Tri Agus Setiawan, Haryono Soeparno, Ford Lumban Gaol and Yulyani Arifin*

## **12:30PM-1:00PM (GMT+8)**

**Lunch on your own**

## **1:00PM-2:30PM (GMT+8)**

**Zoom 1 (Main room)**

**Invited Talks**

**Session Chair: Naoki Fukuta, Shizuoka University, Japan**

**[Invited Talk 1] Yaya Heryadi, Bina Nusantara University, Indonesia**

**Enhancing Educational Assessment: Automatic Essay Scoring using AI-based Models**

**[Invited Talk 2] Spits Warnars Harco Leslie Hendric, Bina Nusantara University, Indonesia**

**Measurement in the classification model**

**[Invited Talk 3] Haryono Soeparno, Bina Nusantara University, Indonesia**

**Strategic Integration of Digital Technology and AI in Business Operations**

## **2:30PM-2:40PM (GMT+8)**

**Break**



**2:40PM-5:40PM (GMT+8)**

**Zoom 1 (Breakout room 1)**

**LTLE 4 & DSIR 3**

*Session Chair: Kunihiko Takamatsu, Tokyo Institute of Technology, Japan*

Development of A Cybersecurity Training System Based on SaaS

*Sanggyu Shin*

Survey of Middle and Upper Elementary School Students' Knowledge of Cloud Computing

*Mitsuhiro Watanabe, Kazuki Mitsui, Kazunori Sato, Taku Kawada, Toru Nagahama and Tatsuya Horita*

Identifying Student Learning Styles using Support Vector Machine in The Felder-Silverman Learning Style Model

*Jeffri Prayitno Bangkit Saputra, Harjanto Prabowo, Ford Lumban Gaol and Gatot Fatwanto Hertono*

Question Generation for English Reading Comprehension Exercises using Transformers

*Alexander Maas, Kazunori D Yamada, Toru Nagahama, Taku Kawada and Tatsuya Horita*

Nge-BatikVR: Innovative Batik Learning and Marketing through Virtual Reality Serious Games with Immersive Hands-On Experience

*Dimas Ramdhan, Galih Dea Pratama, Michael Francis Wijaya, Muhammad Edo Syahputra and Wihendro Wihendro*

Diploma Supplements in Japanese Higher Education -Findings from a Nationwide Survey of Undergraduate Education -

*Satoshi Ozeki, Kiyoshi Fujiki, Toru Hayashi, Shorb Patrick and Masamitsu Mochizuki*

Is Dual Enrollment a Predictor of Academic Success?

*Jennifer Lude and Faxian Yang*

Fully automated system for the marking and quantitative assessment of reading skills of students on the basis of abridgement.

*Koichi Akashi, Hibiki Ito, Kunihiko Takamatsu, Shotaro Imai, Sayaka Matsumoto, Katsuhiko Murakami and Tetsuhiro Gozu*

**Zoom 2 (Breakout room 2)**

**SCAI 9**

*Session Chair: Yulyani Arifin, Bina Nusantara University, Indonesia*

Empirical analysis of people flow in Saga Arashiyama area in Kyoto City Using the Location Registration Information

*Hiroshi Tsuda and Yu Ichifuji*

Using a personality-aware recommendation system for comparing inventory performances

*Natsu Nishimura, Zeynep Yucel and Akito Monden*

Effectiveness of Reward Functions for Deep Reinforcement Learning in Chick-feeding System

*Masato Kijima and Katsuhide Fujita*

Incorporating Rating: Abstractive summarization of review sentences considering rating

*Yuta Yamada and Katsuhide Fujita*

Effect of tool specificity on the performance DNN-based saliency prediction methods

*Kengo Matsui, Zeynep Yucel and Timothée Languille*

COCOMO II Analysis of Developing Multi-Account Partner Software for Crypto Exchange

*Oscar Darmawan, Ford Lumban Gaol, Haryono Soeparno and Yulyani Arifin*

A Live Concert Performance Recommender System Utilizing User Ideal and Antithesis Ideal Setlist Preferences

*Edward Abel and Andrew Goddard*