Final Program

30th IEEE/ACIS International Conference on Software Engineering, Artificial Intelligence, Networking and Parallel/Distributed Computing (SNPD2025-Summer II)

Fukui Prefecture International Exchange Hall
Fukui, Japan
June 30-July 2, 2025

Conference Organizing Committee Members

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Teruhisa Hochin   Otemon Gakuin University, Japan

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Program at a Glance

Monday, Jun 30, 2025

Time	Activity	Location
9:00 – 11:30	Registration	3rd Floor Hallway
9:45 – 10:00	Opening Ceremony	Special conference room (3rd Floor)
10:00 – 11:30	Keynote	Special conference room (3rd Floor)
12:00 – 13:00	Lunch on your own	
12:30 – 17:00	Registration	2nd Floor Hallway
13:00 – 14:30 13:00 – 15:00 13:00 – 15:00	Regular Session 1 Special Session 1A Special Session 3A	1st meeting room (2nd Floor) 2nd meeting room (2nd Floor) 3rd meeting room (2nd Floor)
15:00 –15:30	Coffee Break	
15:30 – 17:00 15:30 – 17:00 15:30 – 17:00	Regular Session 2 Special Session 1B Special Session 3B	1st meeting room (2nd Floor) 2nd meeting room (2nd Floor) 3rd meeting room (2nd Floor)

Tuesday, July 1, 2025

Time	Activity	Location
9:00 – 17:00	Registration	2nd Floor Hallway
9:30 -11:30 9:30 -11:30 9:30 -12:00	Regular Session 3 Regular Session 4 Special Session 4	1st meeting room (2nd Floor) 3rd meeting room (2nd Floor) 2nd meeting room (2nd Floor)
12:00 – 13:00	Lunch on your own	
13:00 – 15:00 13:00 – 15:00	Regular Session 5 Special Session 2A	1st meeting room (2nd Floor) 2nd meeting room (2nd Floor)
15:00 – 15:30	Coffee Break	
15:30 – 17:00 15:30 – 17:30	Regular Session 6 Special Session 2B	1st meeting room (2nd Floor) 2nd meeting room (2nd Floor)
18:00 – 20:00	Dinner Banquet & Award Ceremony	Special conference room (3rd Floor)

Wednesday, July 2, 2025

Time	Activity	Location
9:00 – 10:00	Registration	2nd Floor Hallway
9:30 – 11:30	Regular Session 7	1st meeting room (2nd Floor)
11:30– 11:40	Closing Remark	1st meeting room (2nd Floor)

Keynote

Personal Health Coaching Framework Using Digital Twin and On-Device AI
Prof. Yeong-Tae Song
Towson University

Abstract

When a person comes down with a disease, it is important to get proper treatment at the right time to get it cured but due to various reasons, it may not be always possible. What is more important is to try not to be in such a situation by monitoring their own health and take necessary actions in a timely manner when any abnormal conditions occur. Clinical institutions such as hospitals are the places to get treatments but when it comes to maintaining personal health, they may not be the right place to be as health monitoring requires constant assessment and guidelines that may differ by person. With the advancement of health information technology, such personalized and constant guidance that can ensure health information privacy, security, and sharing may be feasible. In this talk, we propose a novel approach in personal health monitoring framework using digital twin and on-device AI. Digital twin is used to monitor, assess, and predict user's personal health by using user's most up-to-date and longitudinal health condition through clinical sensors and observed symptoms. On-device AI is used to provide secure personalized health coaching capabilities as it does not consult external AI such as ChatGPT.

Bio

Dr. Yeong-Tae Song is currently a full professor in the Department of Computer and Information Sciences at Towson University. He earned his master's and Ph.D. degrees in computer science from the University of Texas at Dallas in 1993 and 1999, respectively. Prior to joining academia, he worked as a software engineer and ATM software test engineer in the industry for more than eight years in Seoul, Korea, and Dallas, USA. He was involved in embedded software projects for various network equipment, including high-speed Ethernet and ATM switches. After joining the University of Arkansas at Little Rock (UALR), he collaborated on a telemedicine project with NASA and the UALR medical school as primary investigator. During his tenure at Towson University, he has served as the principal investigator (PI) for various projects funded by the state of Maryland and local industries. His research includes work on electronic health records (EHRs) and personal health records (PHRs), clinical sensors, smart elearning, Voice over IP, and more. He has also collaborated with an African university on electronic health record systems (EHRS). Dr. Song is a frequent speaker at conferences and seminars. He has served as a program chair and conference chair for various conferences, including those organized by IEEE. Additionally, he is an editor for several journals. He has published approximately 100 papers in conferences and journals.

Program in Detail

Monday, June 30, 2025

9:00-12:00 – Registration   **3rd Floor Hallway**

10:00-10:15 – Opening Ceremony   **Special conference room**

10:15-10:30 – Coffee Break

10:30-12:00– Keynote from ACIS   **Special conference room**

12:00-13:00 – Lunch on your own

12:30-17:00 – Registration   **2nd Floor Hallway**

13:00-14:30 – Regular Session 1   **1st meeting room**
Chair: *Takuya Nakata (Kobe University)*

Defining Software Quality in Use Metrics for Learning Management System.
Chakin Pattanasombatsakul and Nakornthip Prompoon (Chulalongkorn University)

AIM-CF: Fast and Precise Counterfactual Explanations via Approximate Inverse Models
Takafumi Nakanishi (Tokyo University of Technology), Ponlawat Chophuk (Burapha University) and Krisana Chinnasarn (Burapha University)

Exploratory Analysis of Software Engineering Skill in Thailand's Software Industry Using NLP Techniques
Nuttaporn Phakdee (Burapha University), Saisunee Pradubnak(Chandrakasem Rajabhat University) and Aritath Siraphatwongkorn (Burapha University)

13:00-15:00 – Special Session 1A   **2nd meeting room**
Session Title: Organization of Innovative Computer System for Large-scale and Flexible Computing
Chair: *Atsushi Nunome (Kyoto Institute of Technology)*

Linked-List Construction Support by a Thread-Level Speculation Library
Hironori Shiotsuka, Atsushi Nunome and Hiroaki Hirata (Kyoto Institute of Technology)

Performance Evaluation of Directive-Based Parallelized Code at LLVM-IR Level
Kanemitsu Ootsu (Utsunomiya University), Takumi Yanagida (OBN inc.), Takashi Yokota (Utsunomiya University) and Takuma Kitamoto (Utsunomiya University)

Compact Function-Based Modeling of Storage Throughput for an Autonomous Distributed Storage System
Atsushi Nunome and Hiroaki Hirata (Kyoto Institute of Technology)

Case studies on the real-time sonification of scientific data related to continuous flow phenomena
Seiha Uenishi, Shinji Fukuma and Shin-ichiro Mori (University of Fukui)

13:00-15:00 – Special Session 3A   **3rd meeting room**
Session Title: Analysis, Evaluation, and Usage of Information, Systems, and Humans
Chair: *Yuya Yokoyama (Advanced Institute of Industrial Technology)*

Enhancing Positive Moods with Images, Sounds, and Scents
Shunya Nakamura, Teruhisa Hochin (Kyoto Institute of Technology)

Combination Approach for Distributed Blind Estimation over Sensor Network
Sulin Chi, Tetsuya Shimamura (Otemon Gakuin University)

Emotion Estimation from Face Images by Integrating Action Unit and SFormer Features
Ryoya Okuno, Hiroki Nomiya, Koh Shimokawa, Shushi Namba, Masaki Osumi (Kyoto Institute of Technology)

Observing the Relationships of Factors Between Before Enrollment and After Graduation from a Questionnaire Aimed at General Adult Learners
Yuya Yokoyama, Takaaki Hosoda, Morihiko Ikemizu, Tokuro Matsuo (Advanced Institute of Industrial Technology)

15:00-15:30 – Coffee Break

15:30-17:00– Regular Session 2   1st meeting room
Chair: *Sinan Chen (Kobe University)*

A Hybrid Quantum-Classical Deep Learning Algorithm for Efficient Arrhythmia Classification
Melvin Ramkhelawan, Santoso Wibowo and Srimannarayana Grandhi (Central Queensland University)

Towards eID Authentication: Readiness Assessment System for ThaID Integration
Athita Onuean (Burapha University), Pusit Kulkasem (Burapha University), Nilrat Kanyunthong (Burapha University), Jitti Kunphruk (Electronic Transactions Development Agency), Korakod Thananchai (Electronic Transactions Development Agency) and Krisana Chinnasarn (Burapha University)

Methods for Linking Product Photographs and Work Instruction Documents for Printed Circuit Board Assembly
Yuta Kawakatsu, Tsuyoshi Tanaka, Masaki Endo, Tadayoshi Horita and Masakazu Akiba (The Polytechnic University of Japan, Tokyo)

15:30-17:00 – Special Session 1B   2nd meeting room
Session Title: Organization of Innovative Computer System for Large-scale and Flexible Computing
Chair: *Atsushi Nunome (Kyoto Institute of Technology)*

Extendible Skip Graph Based on Order Preserving Linear Hashing
Ken Higuchi and Ryoji Kawamura (University of Fukui)

A Fully Distributed WAN Virtualization Architecture with Self-Healing Function for Underlay Network Failures
Tatsuya Tohyama and Hideo Masuda (Kyoto Institute of Technology)

A Proposal of Protection System for Home IoT network based on awareness strategy
Ronald Kazungu and Hideo Masuda (Kyoto Institute of Technology)

15:30-17:00 – Special Session 3B   3rd meeting room
Session Title: Analysis, Evaluation, and Usage of Information, Systems, and Humans
Chair: *Yuya Yokoyama (Advanced Institute of Industrial Technology)*

A study of an automatic delivery robot with a representation of animal ears for sharing the sidewalk with pedestrians
Yoshihiko Hayashi and Keiko Yamamoto (Tokyo Denki University)

Custom Robot Arm-Based Trowel Direction Determination on Wall Corners using Deep Predictive Learning
*Nguyen Huu Huy Thinh, Ikumi Noborio, Weiwei Du,
Mai Xuan Bach, Makoto Muramoto, Eunjong Choi (Kyoto Institute of Technology)*

NAT-Unet Model for Optic Disc and Optic Cup Segmentation from Fundus Images
Xiaozhong Xue, Kano Mizuno, Weiwei Du (Kyoto Institute of Technology)

Tuesday, July 1, 2025

9:00-17:00 – Registration   **2ⁿᵈ Floor Hallway**

9:30-11:30 – Regular Session 3   **1ˢᵗ meeting room**
Chair: *Takuya Nakata (Kobe University)*

Automated Optical Marker Exam Recognition using Cross-Linear Area Detection from Smartphone Camera
Watcharaphong Yookwan, Athita Onuean, Sirapat Tansavetwong and Krisana Chinnasarn (Burapha University)

TOI National Grader: A Support System for the Selection and Preparation of Thailand Informatics Olympiad Participants
Jirayus Arbking, Watcharaphong Yookwan, Nilrat Kanyunthong,Kriengsak Panphotong, Sithipong Chimthai and Krisana Chinnasarn (Burapha University)

Optimization of AC Charging Parameters for Lithium-Ion Batteries
Yi-Feng Luo (National Taiwan University of Science and Technology), Chih-Han Ho (National Taiwan University of Science and Technology), Tzu-Chieh Lin (National Taiwan University of Science and Technology), Guan-Jhu Chen (National Changhua University of Education) and Chun-Liang Liu (National Taiwan University of Science and Technology)

Thermal Risk Assessment and Safety Prediction for Lithium-Ion Batteries under Abuse Conditions
Guan-Jhu Chen (National Changhua University of Education), Chu-En Lin (National Chin-Yi University of Technology), Jhan-Fong Lin (National Chin-Yi University of Technology), Yi-Feng Luo (National Taiwan University of Science and Technology), Chih-Han Ho (National Taiwan University of Science and Technology) and Chun-Liang Liu (National Yunlin University of Science and Technology)

9:30-11:30 – Regular Session 4   **3ʳᵈ meeting room**
Chair: *Shin-ichiro Mori (University of Fukui)*

Early warning system prototype development to mitigate coastal aquaculture activities from the climate variability using internet of things (IoT) and artificial intelligence (AI) technologies in Thailand
Pholphisin Suvanachai, Akkarach Kawbunjun, Jutarat Kittiwanich, Nittaya Wutticharoenmongkol, Nanthiya Poolsawat, Napat Somwadee, Wilasinee Pophan, Parawee Jamying, Kanokorn Hornak, Chatnalin Yoakarakun, Adulvit Chucherd, Attachai Intarasab and Marut Panchapornudomlap (Ministry of Agriculture and Cooperatives)

Telemedicine for Aquaculture Animal Health Using Artificial Intelligence (AI) in Thailand
Pholphisin Suvanachai, Akkarach Kawbunjun, Saransiri Nuanmanee, Amornchai Somjetlertcharoen and Aongart Aun-A-Nan (Ministry of Agriculture and Cooperatives)

Model-Driven Development of Web Application Backend Using Node.js Framework
Werayoot Kunphai and Twittie Senivongse (Chulalongkorn University)

An iPad Application to Support Reading Comprehension of Research Papers Using GPT-4o
Rikuto Sakai (Okayama University), Teruhito Kanazawa (National Institute of Informatics), Fumito Uwano (Okayama University) and Manabu Ohta (Okayama University)

9:30-12:00 – Special Session 4   **2ⁿᵈ meeting room**
Session Title: Application of Computer and Information Science for Business Management
Chair: *Yukihiro Shintani   (Chiba Institute of Technology)*
Integrating Gamification into Decentralized Autonomous Organizations Management
Yuma Kawachi, Ion Yamauchi, Yukihiro Shintani and Toru Takagi (Chiba Institute of Technology)

A Study on Individualized Learning Support for High School Mathematics by an Interactive AI Tutor
Shota Kitabayashi, Toru Takagi and Yukihiro Shintani (Chiba Institute of Technology)

In Data Utilization of Enterprise Information Systems Construction of a Problem Generation Process Mode
Takako Shirai (University of Tsukuba), Kiyomi Miyoshi (Advanced Institute of Industrial Technology) and Yasunobu Kino (ZEN University)

Internet access and mobile service choice behavior analysis considering service change intention
Ken Nishimatsu (Chiba Institute of Technology) and Akiya Inoue (Shoin University)

Method of extracting regional characteristics from travel satisfaction
Hiroaki Tsukamoto and Motoi Iwashita (Chiba Institute of Technology)

12:00-13:00 – Lunch on your own

13:00-15:00 – Regular Session 5   1st meeting room
Chair: *Tomoya Kawakami (University of Fukui)*

Human-Centric Software Co-Designed Framework for Competency Evaluations
Kittisak Onuean (Burapha University), Krisana Chinnasarn (Burapha University), Watcharaporn Somphongphueng (Mathayomtaksin Rayong School), Prayong Nooyen (Worksway Company Limited), Athita Onuean (Burapha University) and Wirote Chompoo (Burapha University)

Machine Learning-Based API Framework for Adaptive Programming Learning Using Educational Programming Features
Peerasak Pianprasit, Ungsumalee Suttapakti, Nuttaporn Phakdee, Jirayus Arbking and Krisana Chinnasarn (Burapha University)

Software User Feedback Analysis Maturity for Software Maintenance
Pattarapong Virojpakorn and Twittie Senivongse (Chulalongkorn University)

Test Case Generation and Execution Techniques for Web Applications Based on MVC Model and Extended Screen Transition Diagram
Ryoichi Ishigami, Takeru Amo, Gakuto Higuchi, Ryoshiro Onishi and Tomohiko Takagi (Kagawa University)

13:00-15:00 – Special Session 2A   2nd meeting room
Session Title: Systems and Services with/for Data-Intensive Approach
Chair: *Masahide Nakamura (Kobe University)*

Fostering Organizational Collective Intelligence from Human-Generative AI Interaction
Shoma Hino, Takuya Nakata, Sachio Saiki, Sinan Chen and Masahide Nakamura (Kobe University)

Evaluating Effects of Private EMS Through Urgency-Aware Emergency Simulation
Shota Fukuda, Sinan Chen, Sachio Saiki, Takuya Nakata and Masahide Nakamura (Kobe University)

Estimating Health Condition Using Facial Emotion Recognition
Atsunori Nishiyama, Takuya Nakata, Sinan Chen, Sachio Saiki and Masahide Nakamura (Kobe University)

Analyzing the Combined Effects of Association Rules for Software Defect Prediction
Catherine Francis Mangare, Hiroki Inayoshi and Akito Monden (Okayama University)

15:00-15:30 – Coffee Break

15:30-17:00 – Regular Session 6   1st meeting room
Chair: *Yuya Yokoyama (Advanced Institute of Industrial Technology)*

Understanding User Experience Dimensions from Mobile Application User Reviews through Machine Learning
Jiraporn Ramjul and Twittie Senivongse (Chulalongkorn University)

Predicting Numeric Financial KPIs from Unstructured Text: A Comparative Study of LLM-Based Embeddings and Traditional NLP Techniques

Lord Coffie (Georgia Southern University), Melvin Ajuluchukwu (Georgia Southern University) and Michael Nsor (Western Illinois University)

Data Augmentation in Invalid User Detection Based on a Typing Speed of Individual Words
Takumi Ito and Tomoya Kawakami (University of Fukui)

15:30-17:30 – Special Session 2B   2nd meeting room
Session Title: Systems and Services with/for Data-Intensive Approach
Chair: *Masahide Nakamura (Kobe University)*

Analyzing Real-World Data from Dialogues with a Virtual Agent: A Mixed-Methods Approach to Older Men Living Alone
Nahyun Kim, Akinori Matsukawa, Masahide Nakamura, and Keiko Katagiri (Kobe University)

Recognizing and Recording Grasped Objects for Assisting Elderly at Home to Find Missing Items
Toshinori Shindo, Takuya Nakata, Sinan Chen, Sachio Saiki, Kiyoshi Yasuda, Masahide Nakamura (Kobe University)

Assessing Elderly Physical Health Using Motor Function Variability and Bayesian Regression
Zhaozhen Tong, Sinan Chen, Yuko Yamaguchi, Masahide Nakamura, Hsin-Yen Yen, Shu-Chun Lee (Kobe University)

Evaluating the Source Code Review Performance of LLM-based AI Chatbots
Toya Kakimoto, Hiroki Inayoshi, Akito Monden (Okayama University)

18:00-20:00 – Dinner Banquet & Award Ceremony   Special conference room

Wednesday, July 2, 2025
9:00-10:00 – Registration   2nd Floor Hallway

9:30-11:30 – Regular Session 7   1st meeting room
Chair: *Shin-ichiro Mori (University of Fukui)*

Leveraging GPT-4 for Thai Land and Building Tax Computation in the Bangkok Area
Sadanan Arsaibun (Chulalongkorn University), Pittipol Kantavat (Chulalongkorn University), Boonserm Kijisirikul (Chulalongkorn University), Surapant Meknavin (Digital Smiles Co., Ltd) and Nattapat Tantapong (Chulalongkorn University)

Enhancing Spatial Reasoning in Multimodal Vision-Language Models via Depth-Aware Feature Integration
Hiroo Tsuji (Otemon Gakuin University)

An Image Based Evaluation of Coating of Eyeglass Frames by the i-MSE Method
Shinji Fukuma, Takuya Takazawa and Yoshiro Iwai (University of Fukui)

Empowering Education with Blockchain, AI, and XAI: A New Paradigm for Transparent Records and Smart Learning
Thư Lê Võ Minh, Mỹ Nguyễn Hữu, Tài Tống Ngọc Anh, Hải Phạm Nguyễn Đăng and Hiếu Nguyễn Văn (FPT University)

11:30-11:40 – Closing Remark