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LMAG Kansai

Newsletter

Contents

Message from the Chair

Applications and Developments of Artificial Intelligence

Yasuo Ariki, Chair, LMAG Kansai

With the innovative evolution of AI technologies, including Generative AI, applications of artificial intelligence are beginning to appear in various aspects of our daily lives. Driven by an interest in which technologies are permeating our lives and how they are transforming our lifestyles, we organized our 2025 technical lecture meetings under the theme of "Applications and Developments of Artificial Intelligence". Specifically, we delved into the AI technologies and their practical effects currently being applied across three key fields: "University Education," "Disaster Prevention," and "Robotics," exploring these topics from both a broad overview and a deep technical perspective. While a decade ago "Artificial Intelligence" was often little more than a concept, over the past ten years it has demonstrably delivered real impact, becoming an essential technology that we are certain will continue to evolve even further in the future.

Diverse Forms of Hybrid Delivery

All technical lecture meetings held in 2025 were conducted in a hybrid format.

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Typically, a hybrid event focuses on a lecture followed by a Q&A session; however, relying solely on this format can fail to engage the audience despite providing information. Therefore, in 2025, we introduced panel discussions and on-site experiences alongside the lectures.

For instance, in the field of "Disaster Prevention," where some researchers approach the topic from an AI standpoint while others focus on disaster management, we found that panel discussions were highly effective for deepening the dialogue between these differing viewpoints. Furthermore,

because many IEEE members are engineers with a strong desire to directly experience and understand new technologies, we organized the "Robotics" meeting as an on-site visit. We believed that interacting with actual robots would make the learning experience more enjoyable and accessible than merely listening to a lecture. However, during the on-site visit, delivering clear audio and video of the live interactions via the hybrid stream proved to be difficult, leaving us with technical challenges to address for future events.

Activity Reports

Technical Lecture Meetings

29th IEEE Kansai Section LMAG Technical Lecture Meeting: Initiatives and Prospects for University Education in the AI Era

On July 24, 2025, we held a technical lecture titled "Initiatives and Prospects for University Education in the AI Era," which was attended by 153 people (19 in person and 134 online). At the beginning of the event, LMAG Kansai Chair Dr. Ariki gave an opening speech announcing the technical lecture on the theme of "Approaches and Prospects for University Education in the Age of AI," followed by an explanation of the purpose of the technical lecture.

Following this, Dr. Kazuo Hotate, President of Toyota Technological Institute

and Professor Emeritus at the University of Tokyo, gave a lecture titled "Approaches and Prospects for Education that Transforms Knowledge into Understanding in the AI Era." He emphasized that in the AI era, university education should focus not merely on memorizing knowledge but on striving to achieve true understanding.

Next, Professor Emeritus of Kyoto University and Visiting Professor at Indonesia Telkom University, Dr. Toru Ishida, delivered a lecture titled "How Generative AI is Transforming Higher Education: Insights from Indonesia Telkom University's Experiment." Based on experiments at Indonesia Telkom University, he emphasized that in education, a shift from

a results-oriented approach to a process-oriented approach is necessary, and in learning, improving students' literacy in using Large Language Models (LLMs) is the greatest challenge.

Group picture of the participants

Following the lectures, 13 participants attended the reception, engaging in diverse discussions with the speakers.

30th IEEE Kansai Section LMAG Technical Lecture Meeting & 4th Singularity Technical Lecture Meeting: Artificial Intelligence and Disaster Prevention — Initiatives and Prospects in Earthquake Research

On September 17, 2025, a technical lecture titled "Artificial Intelligence and Disaster Prevention — Initiatives and Prospects in Earthquake Research" was held, with 89 participants (20 on-site attendees and 69 online participants). Dr. Ariki, LMAG Kansai Chair, delivered the opening remarks and explained the purpose of the lecture.

Following this, three presentations were delivered. First, Dr. Naonori Ueda, Deputy Director, RIKEN Center for Advanced Intelligence Project, and Director, Disaster Resilience Science Team, gave a talk titled "Efforts Toward Disaster Prevention Using Artificial Intelligence Technologies." He introduced two approaches to AI-driven disaster prevention: "Data-Driven Science," which learns from vast datasets, and "Simulation-Based Machine Learning," which integrates physical theories with AI.

Next, Dr. Tomohisa Okazaki, Research Scientist, Disaster Resilience Science Team, RIKEN Center for Advanced Intelligence Project, delivered a lecture titled "Crustal Deformation Analysis Using Deep Learning Embedded with Physical Laws." He explained a new method, PINN, for crustal movement analysis that integrates physical laws into deep learning.

Finally, Dr. Tsuyoshi Ichimura, Professor, Earthquake Research Institute, The University of Tokyo, and Visiting Scientist, Disaster Resilience Science Team, RIKEN Center for Advanced Intelligence Project, delivered a lecture titled "Earthquake Simulation Using HPC × AI." He explained a method that integrates supercomputers (HPC) and AI to significantly accelerate high-precision physical simulations.

Following the presentations, a panel discussion was held with the speakers, joined by discussants Dr. Hiroyuki Fujiwara, Director, Collaborative Research Center for Advanced Resilience Technology, National Research Institute for Earth Science and Disaster Prevention (NIED) and Dr. Takuya Kawabata, Head, Third Laboratory, Department of Observation and Data Assimilation, Meteorological Research

Institute, Japan Meteorological Agency. While AI contributes to computational speed, the reliability of its results remains a challenge. The importance of integrating it with physical models to ensure accuracy was discussed. From a societal implementation perspective, prospects included contributions to "pre-disaster prevention" such as infrastructure design, and the expansion into complex disaster simulations handling earthquakes, heavy rain, and floods in a chain reaction.

Group picture of the participants

With 18 participants, a networking reception was held at the 21st-floor restaurant of Osaka Institute of Technology's Umeda Campus. It provided a pleasant and meaningful opportunity for conversation with Dr. Ueda, Dr. Okazaki, and Dr. Ichimura, who participated in the lectures and panel discussion.

31st IEEE Kansai Section LMAG Technical Lecture Meeting & 133rd IEEE Kansai Section Technical Lecture Meeting— New Horizons in Robotics: Robots That Touch the Human Heart

On November 25, 2025, a technical lecture meeting was held on the theme "New Horizons in Robotics: Robots That Touch the Human Heart," with 80 participants (22 attendees in person, 58 online). The meeting began with opening remarks and an explanation of the purpose of the event by Dr. Ariki, Chair of LMAG Kansai.

Following this, Dr. Michihiko Minoh, Project Director of the Guardian Robot Project at Information R&D and Strategy Headquarters, RIKEN, gave a lecture titled "What the Guardian Robot Project Aims for." The project, which started in fiscal year 2019, aims to build autonomous robots with a first-person perspective that can coexist with humans. The idea was presented that the "meaning" of symbol grounding first arises when the robot possesses autonomy. Robots developed by the project were introduced, including Nikola, a dialogue robot that reproduces facial muscle movements to express 13 emotions; Aetro, a wearable robot that can read human intention and provide appropriate assistance; and Indy, a partner robot aiming to live together with humans.

Next, Dr. Koichiro Yoshino, Associate Professor at Institute of Science Tokyo and Team Director at Knowledge Acquisition and Dialogue Research Team, Guardian Robot Project, Information R&D and Strategy Headquarters, RIKEN, gave a lecture titled "Toward Robots that Interact in the Real World.

" People expect robots to enrich their daily lives through conversational interfaces. He emphasized that in real-world dialogue, understanding the context—not just "what was said," but "what was said in what situation"— is crucial.

After the lectures, participants moved to the robot viewing venue and experienced a roughly 5-minute conversation with each of the three self-learning robots (Nikola, Aetro, and Indy).

Following the lecture meeting and experience session, a networking reception was held at Blue Benjamin Café inside Keihanna Plaza, attended by 15 participants. It was an enjoyable and meaningful opportunity for conversation with the lecturers, Dr. Minoh and Dr. Yoshino.

Group picture of the participant

Collaboration with Other Groups

Educational Activities

On September 5, the 5th IEEE Kansai Section EA (Educational Activities) Event, titled "Talk about State-of-the-Art Technology in English — Basic Elements of Technical Communication," was held in a hybrid format at Ritsumeikan University's Osaka Umeda Campus, with LMAG Kansai co-sponsoring the event. Since 2021, LMAG Kansai has been cooperating with the Kansai Section's educational activities to encourage young researchers and high school students. Former LMAG Kansai Chair Dr. Kobayashi provided support for this initiative, and the current Chair, Dr. Ariki, also participated.

Group picture at EA Event

Support for Student Branch Activity

On November 8, the IEEE Ritsumeikan University Student Branch English Presentation Competition 2025, organized by the IEEE Kansai Section Student Branch (SB), was held at Ritsumeikan University's Biwako-Kusatsu Campus. LMAG Kansai co-

sponsored the event, and Vice Chair Dr. Ishida served as one of the judges. A total of 19 technical presentations were delivered, and four awards were presented to four participants, including the "LMAG Award" provided by LMAG Kansai.

LMAG Award presented at Ritsumeikan SB English Presentation Competition 2025

WIE Symposium 2025

On September 13, the IEEE Kansai Section WIE (Women in Engineering) Affinity Group held the 12th WIE Symposium in a hybrid format at Ritsumeikan University's Ibaraki Campus. The event aimed to introduce the activities of female researchers in engineering and information science and to highlight the appeal of careers in STEM fields. Officers from LMAG Kansai also attended the symposium.

IEEE Japan SYWL Workshop 2025

On December 13, the IEEE Japan SYWL Workshop was held in a hybrid format at Ritsumeikan University's Ibaraki Campus, bringing together representatives from Student Branches (SB), Young Professionals (YP), Women in Engineering (WIE), and Life Members (LM) from across Japan. Under the theme "Engineers, be ambitious!", participants engaged in various discussions. The Chair and Vice Chair of LMAG Kansai represented our group at this workshop.

Other Activities

LMAG Officers' Meetings and Member Events

In 2025, eight LMAG officers' meetings, two on-site and six online meetings, were conducted online to manage our activities. On March 17, we held an online welcome party for new Life Members, attended by four new members and six LMAG Kansai officers. The participants enjoyed engaging in conversations across a broad range of topics.

Furthermore, LMAG Kansai Chair Dr. Ariki participated in four R10 LMAG meetings and three JC (Japan Council) LMAG meetings held online throughout the year.

Welcoming New Life Members in 2025

Activity Plan for 2026

The 2026 officers aim to further strengthen the activities of LMAG Kansai. The current plans for 2026 are as follows:

1. Hold LMAG Kansai officers' meetings approximately every other month.
2. Organize at least three LMAG technical lecture meetings or site-visit lectures in a hybrid format.
3. Host a welcome party for new members of LMAG Kansai.
4. Co-sponsor or support events organized by YP, WIE, and Student Branches.
5. Continue supporting Educational Activities (EA) and the SB English Presentation Competition.
6. Publish the LMAG Kansai Newsletter once a year to report activities to members and encourage broader participation.

Editor's Note

I have been serving as the Secretariat of LMAG Kansai since 2025. Over the past year, I have been primarily involved in the organization of three technical lecture meetings. Each of these events not only provided valuable opportunities to gain new technical insights, but also enabled me to deepen my interactions with fellow LMAG members.

In addition to organizing technical lecture meetings, we were able to hold a substantial number of events through joint and co-sponsored activities with other affinity groups, chapters, and sections across Japan. In particular, it was a refreshing and meaningful experience this year to organize and co-host technical lecture meetings together with the LMAGs of the Tokyo and Nagoya Sections.

Looking ahead to 2026, I sincerely hope that we will continue to organize enjoyable and enriching technical lecture meetings, and that I will be able to share these activities with our readers through this Newsletter.

Mamoru Ito

Submitting Articles

We welcome articles for this newsletter, such as tales of your IEEE activity, essays on novel or interesting technical issues, and so on. Manuscripts should be written in English or Japanese. Please include your Life Grade, Member Number, and email address with your submission.

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2025 LMAG Kansai Officers

Chair:	Yasuo Ariki
Vice Chair:	Toru Ishida
	Kazuyoshi Oshima
Secretariat:	Kiyokazu Yasuda
	Mamoru Ito
Past Chair:	Yoshiaki Kushiki