

# Contents

- Conference Agenda
- Instructions for Keynote Speakers
- Guideline for Presentations

## Conference Agenda

Date	July 3, 2025 (Thursday)
08:00-10:00	Registration
10:00-12:00	Test
12:00-14:00	Lunch
Afternoon Session Opening Remark: 14:00-14:05	
Keynote Speeches (Session 1)	
14:05-14:35	<p><b>Keynote Speaker 1: Dr Ata Jahangir Moshayedi</b></p> <p>The School of Information Engineering of Jiangxi University of Science and Technology, IEEE Senior Member</p> <p><b>Title:</b> Service Robots in Smart Agriculture: Design Innovations, UAV Applications, and a Case Study in Corn Farming</p> <p><b>Abstract:</b> In the era of digital transformation, service robots have become a cornerstone of smart agriculture, enhancing productivity, sustainability, and precision in farming practices. This talk explores the evolving role of autonomous and semi-autonomous service robots that support tasks such as crop monitoring, soil analysis, precision irrigation, weed control, and livestock management. Special attention is given to the use of UAVs (unmanned aerial vehicles) and vision systems in corn farming, where high-resolution imaging and AI-driven analysis enable early detection of crop stress, pests, and growth variability across large fields.</p> <p>Following a review of various service robot designs, the talk will focus on one of the most recently developed systems, presented as a case study to provide a deeper analysis of its practical implementation, design considerations, and field performance. By integrating advanced technologies such as IoT sensors, AI, computer vision, and GPS, service robots enable real-time decision-making and optimize resource usage while minimizing environmental impact. Current applications, key benefits, technological challenges, and future prospects will be discussed, illustrating how service robots are reshaping modern</p>

	agriculture into a more data-driven and resilient industry.
14:35-15:05	<p><b>Keynote Speaker 2: Dr. Bin Gou</b> School of Electrical Engineering, Xi'an Jiaotong University</p> <p><b>Title:</b> A Feature Transfer Learning Method for Open-Circuit Fault Diagnosis of Single-Phase Pulse Rectifier</p> <p><b>Abstract:</b> Owing to the complexity of the operating environment, high-speed trains experience a significant proportion of open-circuit faults in pulse rectifiers, which severely impacts their safe operation. Additionally, the operational data of high-speed trains is characterized by an extremely limited number of fault samples, posing a challenge to the accuracy of data-driven fault diagnosis methods. To address these issues, this article proposes a feature transfer learning-based approach that leverages a large volume of readily available rectifier fault data to assist target rectifiers with scarce fault samples in identifying new feature space representations. This method facilitates fault classification and diagnosis, achieving promising fault diagnosis performance.</p>
15:05-15:35	<p><b>Keynote Speaker 3: Prof. Witold Pedrycz</b> Professor, Faculty of Engineering - Electrical &amp; Computer Engineering Dept, University of Alberta, Canada, IEEE Fellow</p> <p><b><u>Title: Data and Knowledge: A Synergistic Machine Learning</u></b></p> <p><b><u>Abstract:</u></b> The unprecedented progress in Machine Learning (ML) can be attributed to an efficient use of masses of data as being recently exemplified through numerous constructs of LLMs and foundation models.</p> <p>It becomes intriguing, though, that while exhibiting a heavy reliance on data, a role of knowledge in ML has not been clearly considered. In this talk, we advocate an ultimate importance of synthesizing a unified design knowledge-data (KD) of Machine Learning or KD-ML, for brief. As a new paradigm, KD-ML focuses on a prudent and orchestrated engagement of data and knowledge in the design practices in the area.</p> <p>The fundamentals of the KD environment are formulated along with a historical perspective and the key highlights are identified. The issues of origin of problem-oriented knowledge, taxonomy of knowledge and the and its main features are discussed.</p> <p>Data and knowledge arise at very different levels of abstraction with knowledge being formalized and represented at symbolic level. This constitutes a genuine challenge as data are predominantly numeric. We stress that in the development of a cohesive and unified framework of coping with data and knowledge in learning processes, one needs to reconcile highly distinct levels of abstraction (numeric-qualitative) and</p>

	<p>with this regard information granules play a pivotal role.</p> <p>We offer a taxonomy of knowledge by distinguishing between scientific and common-sense knowledge and elaborate on a spectrum of ensuing knowledge representation scheme. In the sequel, the main categories of knowledge-oriented ML design are discussed including physics-informed ML (with the reliance of scientific knowledge), an augmentation of data driven models through knowledge-oriented constraints (regularization), a development of granular expansion of the data-driven model and ways of building ML models in the presence of knowledge conveyed by rules. When analyzing the proposed categories, it is also clearly explained how the new ML environment helps avoid a detrimental effect of data blinding. Selected schemes of the KD unified environment and ensuing learning schemes are discussed including a new concept of knowledge landmarks.</p>
Oral Speeches (Session 2)	
15:40-15:50	Updating...
<b>Date</b>	<b>July 4, 2025 (Friday)</b>
09:00-10:20	Parallel Sessions
10:20 - 10:30	Tea Break
10:30 - 12:30	Poster
Lunch	
14:00 - 16:30	Parallel Sessions
16:30 - 17:00	Award/Closing Remark

## Guideline for Presentations

Tencent Meeting Link	<a href="https://meeting.tencent.com/dm/LUZNeVwBd9AD">https://meeting.tencent.com/dm/LUZNeVwBd9AD</a>
Tencent Meeting ID:	728-8146-5168

### Time Zone

- Greenwich Mean Time (GMT)+8—China Local Time
- Please set up your laptop time in advance

### Equipment Needed

- A computer with an internet connection (wired connection recommended)

- USB plug-in headset with a microphone (recommended for optimal audio quality)
- Webcam(optional): built-in or USB plug-in

## **Environment Requirement**

- Quiet Location 、 Stable Internet Connection 、 Proper lighting

## **Links to Download the Tencent Meeting (Voovmeeting)**

- Link for mainland China to download: <https://meeting.tencent.com/>
- Link for other countries except mainland China to download: <https://voovmeeting.com/>

## **Oral Presentations**

- To effectively control the time and avoid some unexpected situations, it's advised to test your presentation ahead of time to make sure it can be proceeded normally.
- Each presentation of long paper is a maximum of 20 minutes in total, including Q&A; and it's a maximum of 15 minutes in total including Q&A for short papers. Please make sure your presentation is well timed.
- Attention please: Video recording is absolutely forbidden during the conference.
- Once confirmed, the conference is to resort to legal claims.

## **Voice Control Rules during the Presentation**

- The host will mute all participants while entering the meeting.
- The host will unmute the speakers' microphone when it is turn for his or her presentation.
- Q&A goes after each speech, the participant can raise hand for questions, the host will unmute the questioner.
- After Q&A, the host will mute all participants and welcome next speaker.