



Specialized Panel Discussion Title:

Artificial Intelligence in Transformation of Automation and Control Engineering: Challenges and Opportunities

Tuesday, November 5, 2024
16:30 – 18:00

Introduction:

In today's world, advances in artificial intelligence and digital technologies have opened new frontiers for developing intelligent tools and systems in the fields of control engineering and automation. The Fourth and Fifth Industrial Revolutions, driven by the fusion of control systems with smart data and machine learning, have shifted the traditional boundaries of industry. Recent developments in AI, particularly with the advent of Generative AI and Large Language Models (such as ChatGPT), have introduced new opportunities to enhance the stability, efficiency, and security of systems. Given the growing importance of these advancements, a careful examination of how AI can be effectively applied in control engineering and automation is essential. In this panel, experts will discuss practical applications, challenges, and opportunities in integrating AI with control and automation tools and explore innovative methods for optimizing systems and control strategies.

Panel Discussion Questions:

1. What are AI and digital transformation, and what role do they play in national development programs?
2. Can AI be relied upon in the fields of control and automation (in terms of system stability, efficiency, and safety)?
3. What are some successful applications and examples of AI in industrial areas related to automation?
4. Can Large Language Models play an effective role in the design and implementation of control and automation systems?
5. AI is often seen as an aid to control, but can control theory also support and strengthen AI?
6. What are the key challenges of using AI in control and automation, and how can these be overcome?

Panel Members:

- ❖ Dr. Seyed Ali Akbar Safavi (Shiraz University)
- ❖ Dr. Mohammad-R Akbarzadeh-T (Ferdowsi University of Mashhad)
- ❖ Dr. Majid Zamani (University of Colorado Boulder)
- ❖ Dr. Javad Salimi Sartakhti (University of Kashan)



Panel Chair:
Dr. Seyed Ali Akbar Safavi

