



# ANNUAL CONFERENCE OF THE IEEE INDUSTRIAL ELECTRONICS SOCIETY

Chicago | Illinois, November 3-6, 2024

## Special Session on AI and Digitalization in Energy Management

Organized and co-chaired by:

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### Call for Papers

#### Technical Outline of the Session and Topics:

As energy systems grow in complexity due to expansion and the integration of renewable energy, AI and digitalization have arisen as the prime technologies to address the challenges emerging from the increased complexity. Machine learning, multi-agent simulations, optimization and game theory methods are being successfully applied to several energy management task, with the support of robotics, Internet of Things and cloud/edge computing technologies. The goal of this special session is to provide a venue for deep dive into the AI and digitalization ecosystem for energy management methods and technologies to review the state-of-the-art and identify future directions.

#### Topics of the Session include, but are not limited to:

- Energy data collection through sensors
- Energy data wrangling
- Energy data generation through simulations and digital twins
- Machine learning algorithms for energy management
- Optimization methods for energy management
- Complex system modeling for energy management
- Robotics and energy management
- AI applications for energy management
  - Solar forecasting
  - Demand forecasting
  - Power fault analysis
  - Demand response
  - Energy trading
  - Electric mobility integration
  - Predictive PV maintenance
  - Microgrid monitoring and control
  - Power conversion systems
- Next frontier
  - Federated learning for energy management
  - Quantum computing for energy management

#### Author's schedule:

Deadline for submission of special session papers	April 15, 2024
Notification of acceptance	June 10, 2024
Deadline for submission of final manuscript	July 01, 2024
Early submission is highly encouraged for early decision notifications!	



All the instructions for paper submission are included in the conference website:

[www.iecon-2024.org](http://www.iecon-2024.org)