International Conference on Applied Energy (ICAE)

ICAE Workshop: Artificial Intelligence for Energy-Cyber-Physical Systems

Call for Paper

The capacities of societal-scale infrastructures such as smart buildings and power grids are rapidly increasing, becoming physical systems capable of cyber computation that can deliver human-centric values and energy services while enhancing efficiency and resilience. By mutually strengthening and converging technological advancements in sensing, learning, control and optimization, future energy-cyber-physical (e-CPS) systems will embody effective measures to address pressing issues such as energy crisis, climate changes and environmental pollution collectively faced by human societies.

AI plays a distinct role in these e-CPSs, from learning about the human factor and including people in the control loop, to enhancing system efficiency and resilience. Driven by the fundamental push for a sustainable and human-centric economy, this workshop focuses on using AI to achieve optimal e-CPS performance.

Potential topics:
- Human-centric learning and control in e-CPS
- (Deep) Reinforcement learning to deal with uncertainty and dynamics
- Model-based, model-guided, and model-free optimal optimization and planning
- Data-efficient learning and control for e-CPS
- Deep learning methods to deal with time-series data streams in e-CPS
- Transfer, adaptation and multitask Learning for e-CPS
- Crowdsourcing techniques and methodologies for e-CPS
- Network and system architectures and protocols for e-CPS
- Microgrid, nanogrid, and distributed energy resources control and optimization
- Data analytics for smart building, smart grid, and smart city

Key dates:
- Draft paper deadline: May 15, 2018
- Notification of acceptance: May 31, 2018
- Camera-ready version: July 15, 2018
- Workshop: Aug. 24, 2018