

Proposal of Special Session

TITLE OF SPECIAL SESSION:

AI and IoT Based Smart Grid Challenges and Trends: A Cyber Physical System Perspective

OBJECTIVE OF THE SPECIAL SESSION

The major objective of this session is to bring in the emergence of Internet of Things and AI to transform the power grids into smart grids. This broader aspect of the energy sector can bring in high requirements of energy storage technologies, demand response modelling at the user side, renewable energy generation. In this perspective, these new era technologies can provide more intelligence and move the electric grids with dynamic control of grid assets, increase of operational safety and moreover on reduction of maintenance cost. With respect of IoT applications in this arena looks in a broad perspective of forecasting the asset failures, great deployment of smart energy management. This AI and IoT technology can provide greater interest towards electric vehicle load management, state of charge energy units. Furthermore, the privacy and cyber security are into greater concerns in regard to cyber-attacks. This special issue mainly focusses on to provide AI and IoT for smart grids with regard to network architectures, efficient power and communication networks for operation and planning with realistic case studies.

TOPICS OF THE SPECIAL SESSION

Topics to be discussed in this special session include (but are not limited to) the following:

- Machine learning and deep learning for efficient smart grid
- Security threats in smart grid
- Privacy preserving data aggregation using deep learning models in IoT enabled smart grid.
- Data Analytics perspective in smart grid IoT
- Cloud based service requirements for smart grid IoT
- Energy theft detection and deployments
- Energy Storage in Smart Grid

- Machine learning models for IoT based smart grid communications
- Big data, IoT and machine learning approaches for secure solutions for industrial IoT and internet of energy
- Data Mining for smart charging, discharging for EV's using IoT smart grid
- Integrating smart power grid and intelligent transportation systems using IoT smart grid

SESSION CHAIRS

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