



Artificial intelligence for energy management and optimization in smart buildings

PID: 2021\DSAI\008

Rapid urbanization and social developments have resulted in tremendous increase in the total energy consumption of buildings. Forecasting of building energy consumption has become an important research area in the energy management system to improve the energy efficiency of buildings and sustainable environment with reduced operational costs and environmental impact. This project aims at the development and investigation of reliable and cost-effective artificial intelligence-based energy management approaches to achieve trade-off between the energy utilities and the consumer bills while maintaining supply-demand balance and lower carbon emissions.

Task to be assigned to the intern:

- Design clustering and scheduling algorithms for consumer segmentation and load shifting.
- Develop a web-based decision-making model for the selection of suitable AI models for energy consumption and electricity price forecasting
- Build an intelligent framework to classify normal and abnormal energy users for efficient electricity fraud detection in smart grids.

Learning outcomes: The candidate will learn and apply new and existing approaches with artificial intelligence, data science, optimization and smart energy technologies.

Duration: 6 months

Skills required: Python-tensorflow, PyTorch, keras, flask, etc.

Pre-requisite courses: Artificial intelligence, machine learning, data analysis and modeling, and optimization algorithms

No. of interns required: 03