**Topic**: Designing Intelligent Energy Management Systems in Smart Homes

**Supervisors:** Surender Redhu (SIN), Nga Dinh (HiOF)

**Descriptions**: For a resilient and reliable operation of power grids, energy consumption needs to be predicted for end-users at different levels like smart homes, industries, etc. Home Energy Management Systems (HEMS) can help in tracking and predicting future consumption of household appliances. Thus, a method to optimize the scheduling of loads in smart home can be of great importance. Thus, this project aims at minimizing the electricity bill to end-users by scheduling the home appliances while not disturbing the user-experience..

The project consists of the following steps:

1. Doing literature review to see how (similar) works have been done in research community.
2. Proposing a new scheduling algorithm for home appliances to minimize electricity bill for end users. The proposed algorithm is expected to be comparable or better than (several) existing algorithms.

**Requirements**:

1. Basic mathematical and statical understanding.
2. Good at one of the following programming languages: C, Python, R

**Contact:** Nga Dinh, [thi.t.dinh@hiof.no](mailto:thi.t.dinh@hiof.no)