Reducing the Number of Sensors

Virtual Sensors for Estimating the Electricity Consumption on Individual Appliance Level in Large Environments

TECHNISCHE UNIVERSITÄT DARMSTADT

Motivation

Energy Efficiency

- Improve scalability electricity sensing systems
- Simplify electricity metering on level of single appliances

Challenges

Heterogenity, Concurrency, Noise

- Ubiquity of electrical appliances
- Concurrent state changes in environment
- Noise caused by non-observable loads

Contributions

Energy Management System

- In-situ training and adaption of virtual sensors
- Minimal invasive context sensors
- Tight integration of mobile sensors
- Privacy enhancements for energy recommender systems

Image source: fit.fraunhofer.de,