DEEP LEARNING USE CASE

ENERGY DISAGGREGATION USING CONVOLUTIONAL NEURAL NETWORKS

SPEAKER

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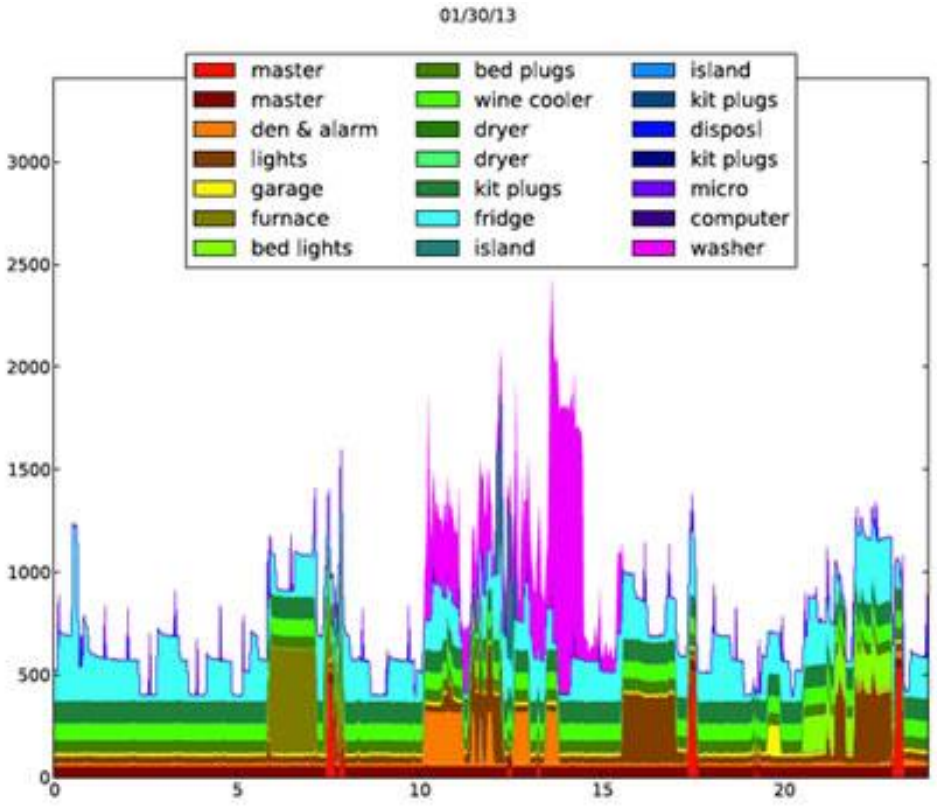
Energy Disaggregation

- **Energy disaggregation** is the problem of separating an aggregate **energy** signal into the consumption of individual appliances in a household.
- This is useful because having a breakdown of the consumption of all the devices encourages users to consume less **energy** and gives them indications on how to do so



Application of Deep Learning

- Input: Main Meters Power Consumption of a time period
- Output: Disaggregated Power Consumption of an appliance in the same time period

Residential Energy Disaggregation Dataset (REDD)

- The data were acquired from approximately 40 homes in the Boston and San Francisco metropolitan areas.
- In California, monitoring devices were installed in 30 homes over eighteen months.
- All of the data were collected for 48 different circuit breakers, with the collection period for each home typically ranging from two to four weeks.
- The researchers developed a process for data collection that details recruitment, consultation, hardware specifications, equipment installation and removal, data evaluation, and a one-hour exit interview with residents who participated.