

SEADS
Smart Energy Analytics
Disaggregation Systems



SEADS

- What is SEAD?
 - Measures the I-V at the home power interface
 - Has a database of all appliance signatures
 - Detects what appliances are on based on those signatures
- What are SEAD Goals?
 - To Monitor and Control Microgrid(An Islandable part of grid)
 - Home Automation and Smart Home
 - Billing
 - Anomaly Detection

Project Categories

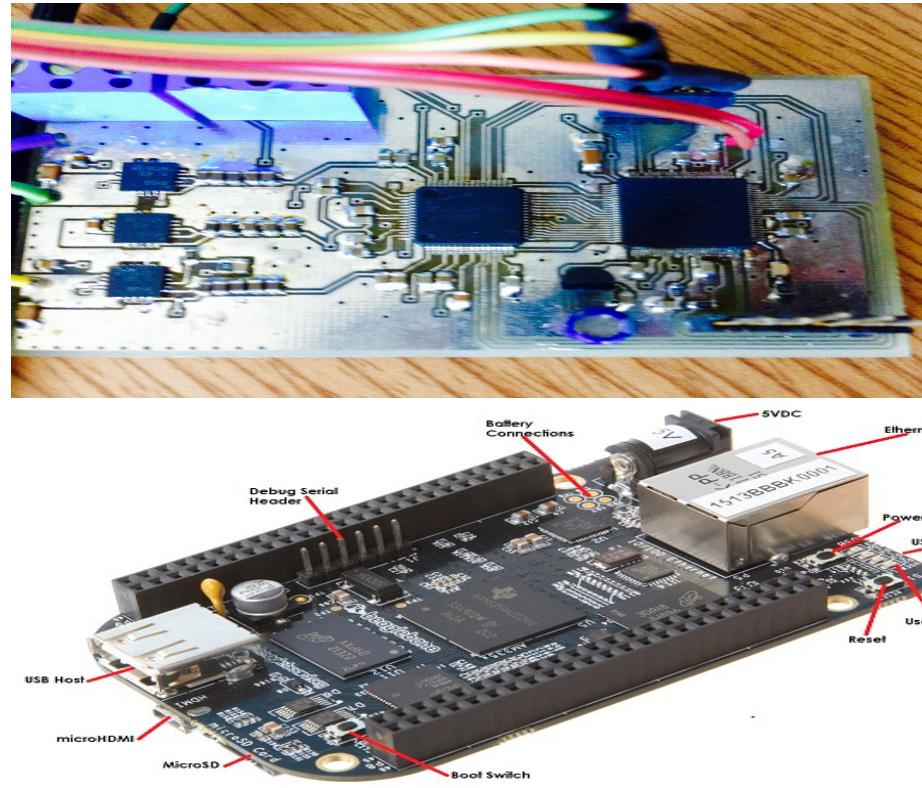
- **Front End:** UI and interface
- **Database:** Querying a signal from the data base and sort the signals based on similarities
- **Classification Data Analysis/Data Collection:** Data classification and visualization.

SEADS

SEAD Plug

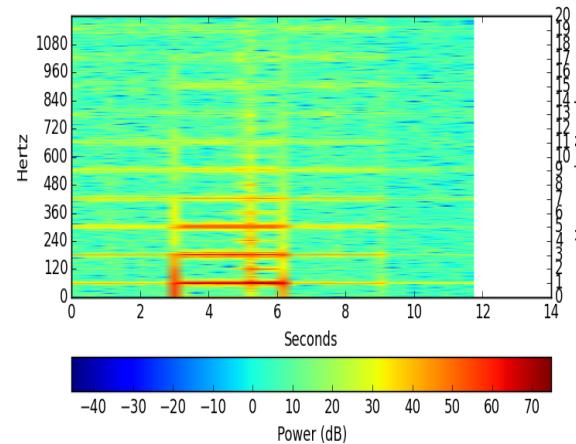
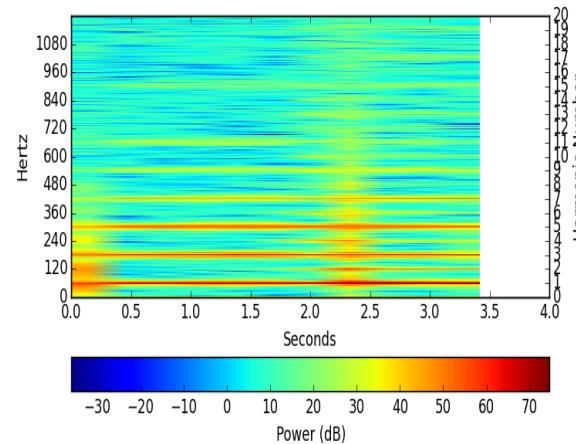
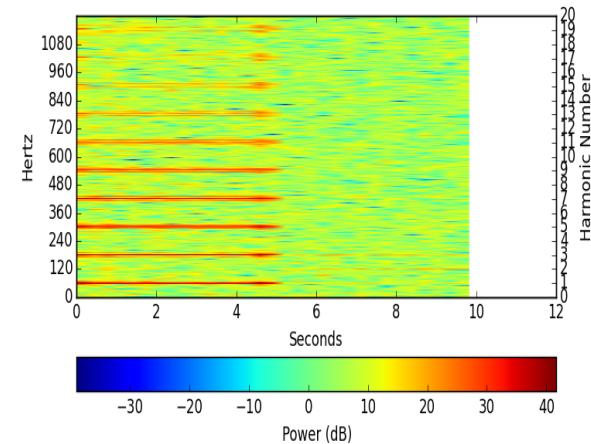
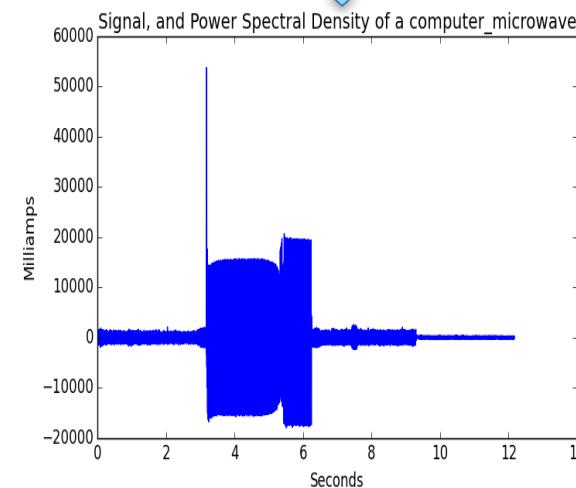
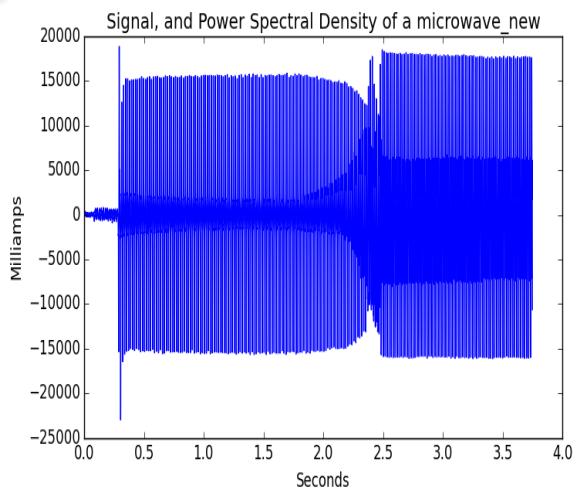
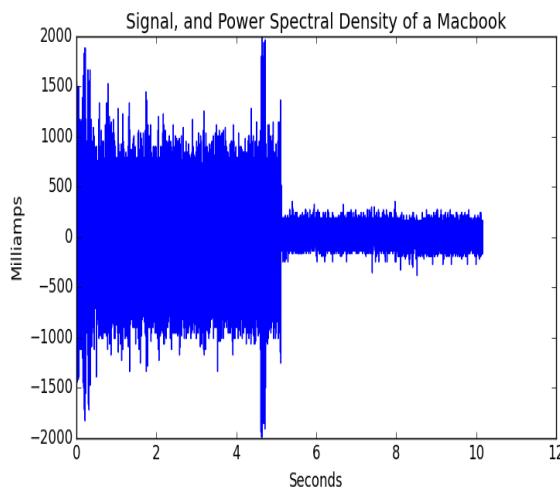
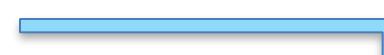


SEAD Panel

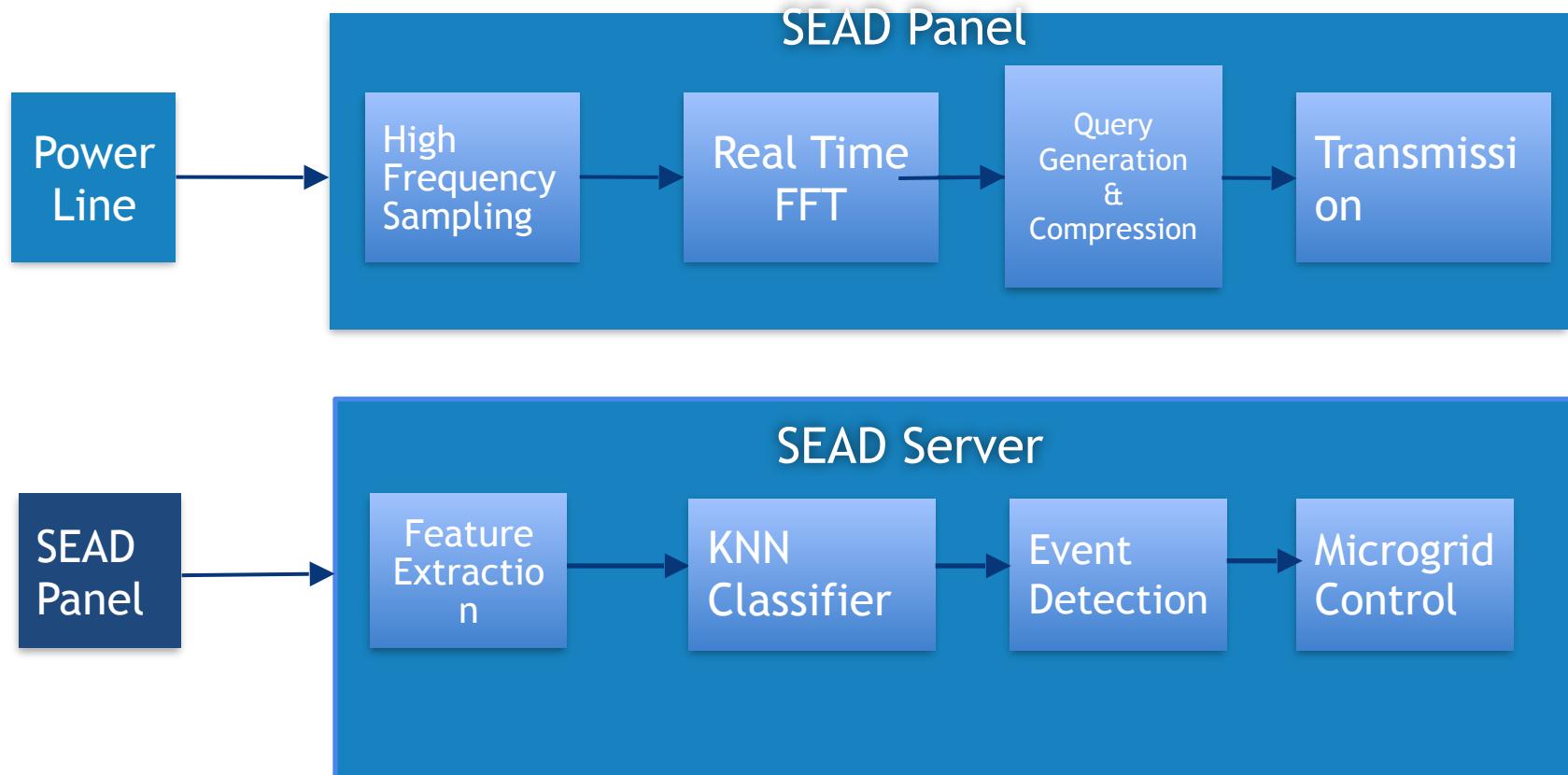


Computer + Microwave Current Harmonics

SEAD Plug

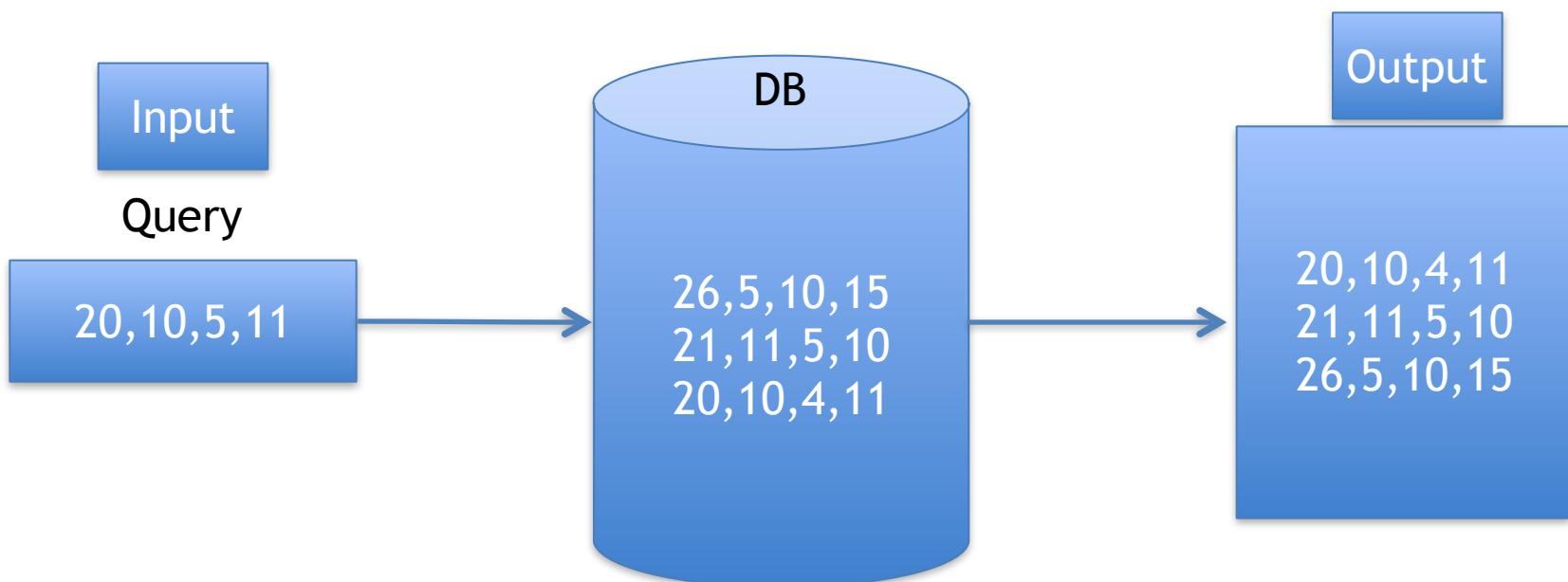


SEAD System Architecture



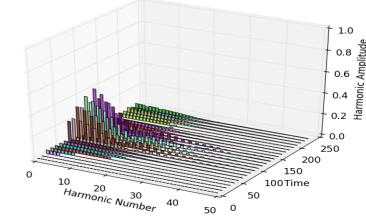
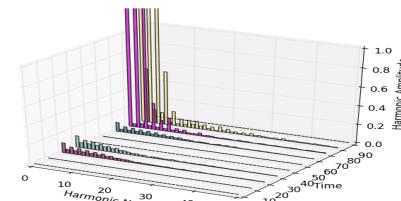
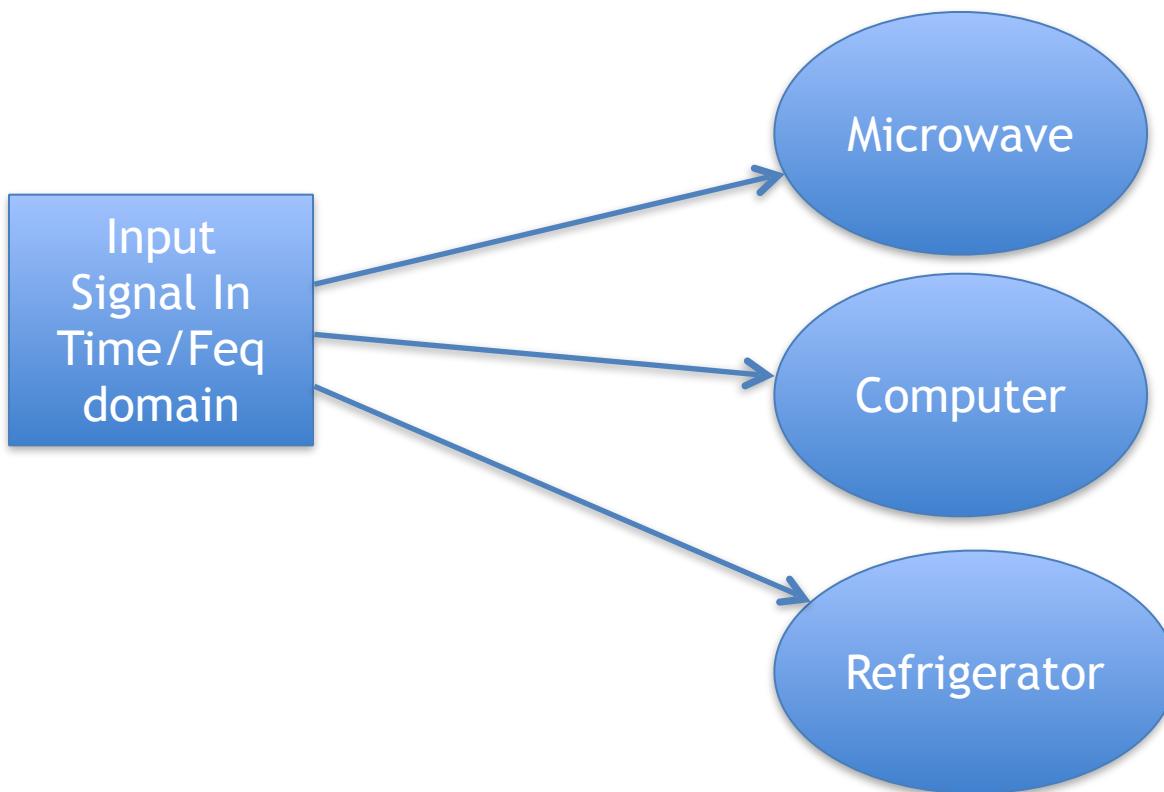
Database

- Reimplement DB API with new database.
(Currently in MySQL)
- Querying Signals from DB



Classification and Data Collection

- Data collection and analysis using Python



User Interface

- <http://www.sead.systems/> is currently made in PHP+MySQL.
- Going to be rewritten in Python.
- Real-time Visualization of Data in a user-friendly manner
- Possibly making a Desktop App