Meeting Baldiri 13-9-2018

Method discussion:

* Fourier could be possible if you want to predict per week.
* The most interesting thing would be to test all three methods. What percentage accuracy do they give? For example: if Fourier gives almost the same percentage as ANN, Fourier would be better since the model explains a lot better what parameters have the most influence
* Try to predict one week with the three different methods. The training data can be longer. The goal is to compare the different models.
* Predict in the same frequency as our data
* Make two models for thermal/electricity
* Look more into the different multi-var methods --> programming wise
* Use python to program it

Tasks discussion:

* Baldiri: perfect

Subquestions:

**1 -Is it possible to accurately predict the house energy consumption with few physical building parameters and the climate data with use of multivariate regression models and neural network models?**

* Do we need to create two separate models, one for electricity and one for gas usage prediction?   
  *Baldiri: Yes, they are two different methods. Electricity has a different pattern than thermal, unless houses have heat pumps.*
* What models do we want to use (which meets our conditions the best)?
  + What is the difference in accuracy in between the models?
  + What are the advantages and disadvantages in between the models?
* What % of accuracy do we want to get?  
  *Baldiri: I don’t know yet. To answer this question, we need to look at what people have done with real data. Current training and validation is usually done on one building. We’ll have to see what happens if we use one model on different houses.*
* What’s shortest and longest time period we need to be able to predict?  
  *One week prediction with the same resolution as the data (10 seconds probably).*
* How correlated are all variables to each other?
* Multi variate analysis, what variables to use?
  + SPRINT 2: gaspower, epower, solar radiation, outside temperature

**2- Is it possible to predict the activity of people in their houses with only the smart sensor data?**

* Can we use non-intrusive load monitoring to link the smartmeter data to what hardware is being used?
  + Do we need to monitor all the home devices or do we choose a list of (high consuming) devices?