

# Hourly Building Energy Consumption Prediction Project

Meghan Clark  
Lizhi Zhao  
Xuliang Sun

# Data Available

Building Historical Energy Consumption data (Sampled hourly)

Building meta data

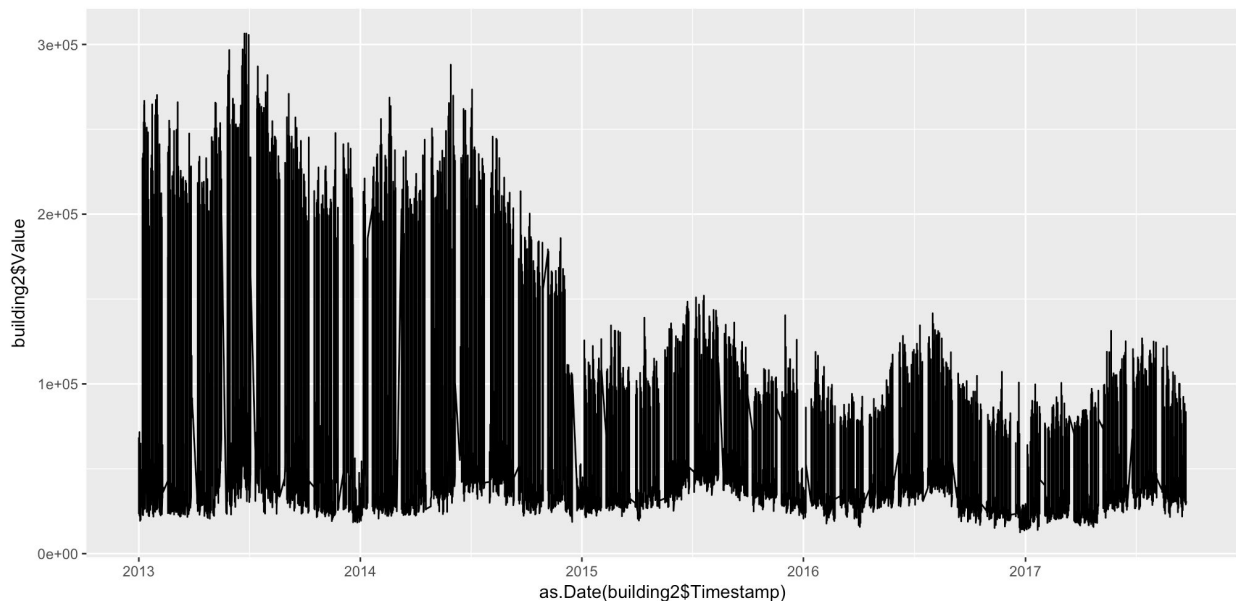
Weather data

Holiday data

Use the data available to predict the building's next hour energy consumption.

**We treat this problem as a time-series prediction and adapt Neural Network to carry out the prediction task.**

# The Data Plot



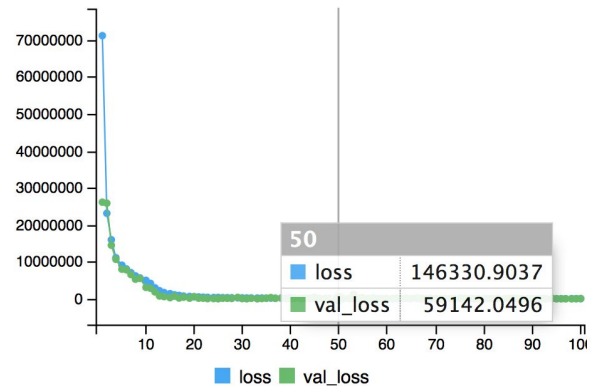
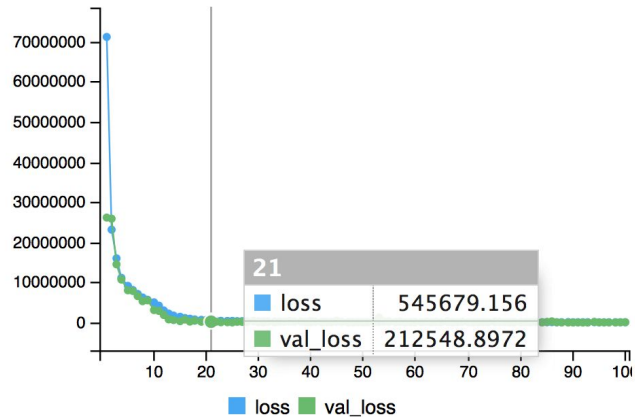
Firstly, we plan to split the data into train and tune set based on the number of missing data.

From the plot, we found that there exists high energy consumption drop from 2014 to 2015. We think the possible reason may be a technology renewal to achieve higher energy efficiency.

# Features included in the data

1. Time-series  $T_0, T_1, T_2, T_3, T_{24} \dots$
2. Basis function: set period = 24 hours
3. Building outside temperature
4. Date information(Sunday, Monday,... or Holiday)
5. Operation information(Closed?)

# Experiments Results



MSE shown in the plot

Use RMSE to evaluate the results. Around 300.

