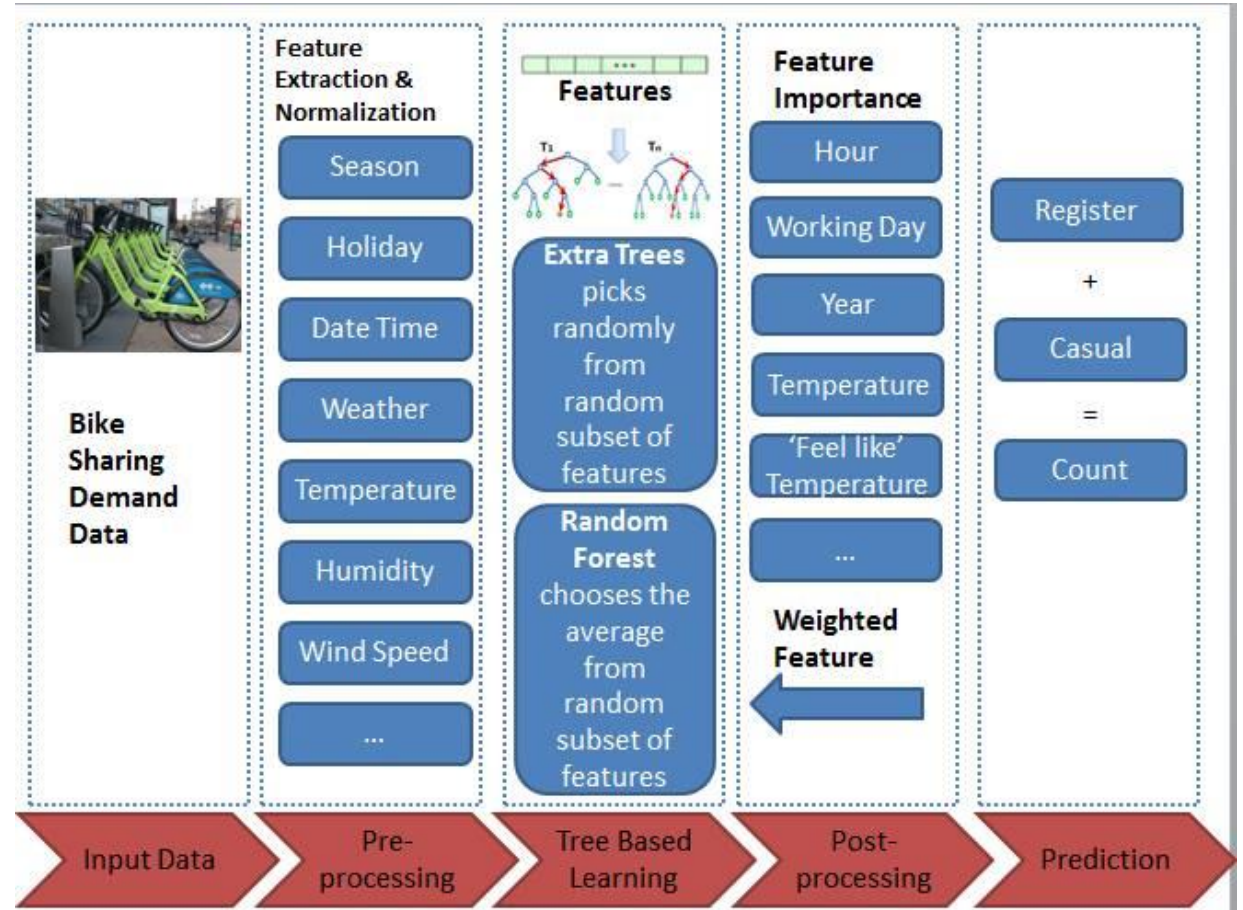


Forecasting Demand of Bike Sharing Systems

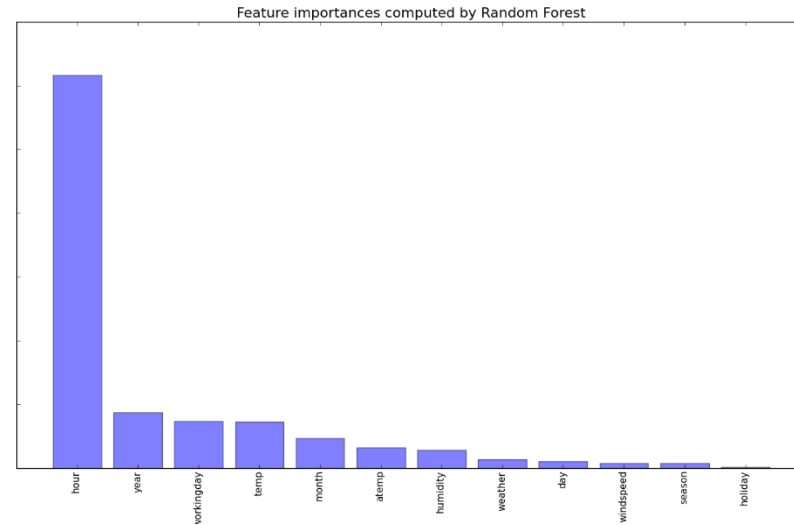
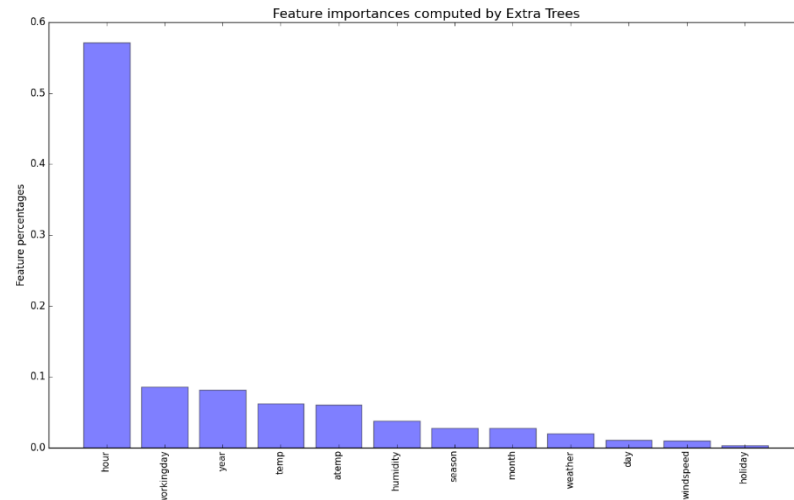
Aniruddha Rajshekar, Yongbo Qian, Funmilade Lesi

- This project seeks to use bike data to help planners assess and improve bike sharing as a viable investment.
- The data, provided by Kaggle, includes information of bike sharing systems based on weather patterns, rental counts etc.
- In order to solve the problem of bike demand, this project aims to provide the appropriate forecast on bike sharing demand using Machine Learning models, Python, Numpy, Scikit-learn and Pandas software.



Algorithm and Results

- The algorithms used were Extra Tree Regressor and Random Forest Regressor because they were found to have the best predictive power and results for the data provided.
- The features of the data which were pertinent to predicting rental counts were hour, working day, year, temperature, “feels like” temperature, humidity, season, month, weather, day, wind-speed and holiday



- After making submissions to Kaggle for both Extra Trees and Random Forest models, we obtained Root Mean Square Logarithmic Errors within the top 20% of the competition

RMSLE Timeline	Extra Trees	Random Forest
First stage (no normalization)	0.47124	0.48256
With normalization	0.46711	0.48079
Casual/Registered split	0.45459	0.48028