ML Code Documentation

Create_csv code:

The create_csv python file includes a function that converts a raw simulation file from Wireless Insite into a csv file in the following format:

	STATE 1	STATE 2	STATE 3	STATE 4	X coord	Y coord
0	-76.0043	-81.0154	-65.9432	-68.5936	-12.57870	9.92121
1	-72.8378	-68.7647	-68.3862	-61.5149	-4.96061	11.07280
2	-70.0689	-76.0247	-62.2038	-68.6864	-13.37590	3.98620
3	-70.9744	-74.5250	-63.8984	-72.4511	-18.42510	-1.86023
4	-70.7768	-70.5134	-63.5361	-74.7921	-14.08460	-6.20076
...	...	...	...	...	...	...
5995	-71.6203	-75.3430	-64.5372	-72.9274	-19.93270	-1.49659
5996	-77.2179	-82.5718	-67.1993	-69.9726	-14.71960	11.44190
5997	-64.3604	-76.7841	-72.4208	-67.0350	10.83330	8.07389
5998	-66.0050	-78.1314	-73.4324	-71.3553	16.50240	9.16132
5999	-70.9639	-66.4954	-65.1730	-59.1568	-4.02216	7.90854

[6000 rows x 6 columns]

This csv file is then used as an input to train the ML models in the train_model code.

Train_model:

The train model code includes functions to read in the csv file and convert coordinates into polar form.

Three sklearn models were trained, namely a linear regression model, a decision tree regressor and a random forest regressor.

The accuracy of the models was determined by taking the root mean squared error between the predicted labels and the actual label for the data.