

1. Installation

```
# set-up anaconda environment
# launch anaconda prompt
conda update -n base -c defaults conda
conda create -n datasci python=3.8
conda activate datasci
conda install -y -q -c conda-forge/label/cf2020003 numpy
conda install -y -q -c anaconda pandas
conda install -y -q -c conda-forge/label/cf202003 matplotlib
conda install -y -q -c anaconda notebook
conda install -y -q -c anaconda seaborn
conda install -y -q -c anaconda scikit-learn
conda install -y -q -c conda-forge/label/cf202003 imbalanced-learn
conda update -y -q --all
python -m ipykernel install --user --name datasci --display-name "Python (datasci)"
# navigate to folder with datafiles and notebook
Jupyter Notebook
```

2. Project Motivation

This is a Udacity Data Science nanodegree project.
There's much financial data available that minimizes wrangling and maximizes modeling.

3. File Descriptions

"GSPC.csv" is a Yahoo Finance download of S&P 500 index data.
"IBM.csv" is a Yahoo Finance download of IBM stock data.
"stock_data_build_r1.ipynb" is a Jupyter Notebook of this data study.
"Imperfect Models for Stock Trades.pdf" project blog writeup for laymen.

4. Project Interaction

- A. The test_train_split function can be run for other validation years and spans.
- B. The rest of the notebook may be run sequentially to ascertain improvements.

5. Licensing, Acknowledgments

A. References:

Yahoo Finance Downloads to CSV files for imports:

<https://finance.yahoo.com/quote/IBM/history>

<https://finance.yahoo.com/quote/%5EGSPC/history>

Hyperparameter Tuning the Random Forest in Python

<https://towardsdatascience.com/hyperparameter-tuning-the-random-forest-in-python-using-scikit-learn-28d2aa77dd74>

B. License, <https://opensource.org/licenses/MIT>

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