**Machine Learning Engineer Nanodegree**

**Model Evaluation and Validation**

**Project: Facial Expression Recognition**

**Install**

This project requires **Python** and the following Python libraries installed:

* [NumPy](http://www.numpy.org/)
* [Pandas](http://pandas.pydata.org/)
* [matplotlib](http://matplotlib.org/)
* [scikit-learn](http://scikit-learn.org/stable/)
* Tensorflow
* Keras

You will also need to have software installed to run and execute a [Jupyter Notebook](http://ipython.org/notebook.html)

**Dataset**

Downloaded from Kaggle Competition

<https://www.kaggle.com/c/challenges-in-representation-learning-facial-expression-recognition-challenge>

**Code**

Template code is provided in the FacialExpression.ipynb notebook file. You will also be required to use the included fer2013.csv dataset file to complete your work.

**Run**

In a terminal or command window, navigate to the top-level project directory FacialExpression/ (that contains this README) and run one of the following commands:

ipython notebook FacialExpression.ipynb

or

jupyter notebook FacialExpression.ipynb

This will open the Jupyter Notebook software and project file in your browser.

**Data**

The FER dataset consists of 35,888 Images.

**Target Variable**

We classify each image in to one of the 7 Target Variables (Anger, Disgust, Fear, Happiness, Sadness, Surprise and Neutrality)