Python Applied Examples

Regression/Modeling/Forecasting

1. Modeling:
   1. [Linear Regression Python Example](https://github.com/jgamel/learn_n_dev/blob/python_ds_examples/linear_regression_basic_example.ipynb) – Linear regression example in python using numpy and sklearn.linear\_model packages.
   2. [Lasso Regression Example](https://github.com/jgamel/learn_n_dev/blob/python_modeling_forecasting/Lasso_Regression_Example.ipynb) sting – Lasso regression example in python using [Lasso] sklearn.linear\_model.
   3. [Multiple Linear Regression](https://github.com/jgamel/learn_n_dev/blob/python_ds_examples/multiple_linear_regression_example.ipynb)
   4. [Polynomial Regression](https://github.com/jgamel/learn_n_dev/blob/python_ds_examples/polynomial_regression_example.ipynb)
2. Logistic Regression:
   1. [Logistic Regression With Maximum Likelihood Estimation](https://github.com/jgamel/learn_n_dev/blob/python_modeling_forecasting/Logistic_Regression_with_MLE.ipynb)
   2. [Implement Logistic Regression From Scratch in Python](https://github.com/jgamel/learn_n_dev/blob/python_modeling_forecasting/Logistic_Regression_From_Scratch.ipynb)
   3. [Introduction to Information Entropy](https://github.com/jgamel/learn_n_dev/blob/python_modeling_forecasting/information_Entropy.ipynb)
3. Time Series Forecasting:
   1. [Time Series Forecasting scikit learn Example](https://github.com/jgamel/learn_n_dev/blob/python_ds_examples/time_series_forecasting_scikit_learn.ipynb)
   2. [Time Series Analysis Example](https://github.com/jgamel/learn_n_dev/blob/python_ds_examples/Time_Series_Analysis_Example.ipynb)
4. Validation & Testing:
   1. [Train Test Split](https://github.com/jgamel/learn_n_dev/blob/python_ds_examples/train_test_split_example.ipynb)
   2. [Kfold Validation](https://github.com/jgamel/learn_n_dev/blob/python_modeling_forecasting/kfold_validation_example.ipynb)
5. Saving Model:
   1. [Save and Load Machine Learning Models in Python with scikit-learn](https://github.com/jgamel/learn_n_dev/blob/python_modeling_forecasting/save_load_model_scikit_learn.ipynb)

Web Scraping

1. [Beautiful Soup Example](https://github.com/jgamel/learn_n_dev/blob/python_web_scrapping/BeautifulSoup_example.ipynb)
2. [Feedparser Example](https://github.com/jgamel/learn_n_dev/blob/python_web_scrapping/Feedparser_example.ipynb)
3. [Google News Feeds Example](https://github.com/jgamel/learn_n_dev/blob/python_web_scrapping/GoogleNews_example.ipynb)
4. [NewCatcher Example](https://github.com/jgamel/learn_n_dev/blob/python_web_scrapping/NewsCatcher_example.ipynb)
5. [Scrapy Example](https://github.com/jgamel/learn_n_dev/blob/python_web_scrapping/scrapy_example.ipynb)
6. [Requests Example](https://github.com/jgamel/learn_n_dev/blob/python_web_scrapping/Requests_example.ipynb)
7. [Selenium Example](https://github.com/jgamel/learn_n_dev/blob/python_web_scrapping/selenium_example.ipynb)
8. [Finnews Example](https://github.com/jgamel/learn_n_dev/blob/python_web_scrapping/finnews_example.ipynb)

Data Load, Prep, Cleaning

1. [Introduction into Arrays in Python Using NumPy](https://github.com/jgamel/learn_n_dev/blob/data_prep_cleaning/NumPy_Arrays_Example.ipynb)
2. [Array saving and loading in python using NumPy](https://github.com/jgamel/learn_n_dev/blob/data_prep_cleaning/numpy_file_inout_example.ipynb)
3. [Loading, converting, saving images as arrays and arrays as images in Python](https://github.com/jgamel/learn_n_dev/blob/python_data_prep_cleaning/image_to_array_example.ipynb)
4. [How To Load Machine Learning Data in Python](https://github.com/jgamel/learn_n_dev/blob/python_data_prep_cleaning/Load_ML_Data_Python.ipynb)
5. [How to Index, Slice and Reshape NumPy Arrays for Machine Learning](https://github.com/jgamel/learn_n_dev/blob/python_data_prep_cleaning/numpy_array_reshape_index.ipynb)
6. [Sparse Matrices for Machine Learning](https://github.com/jgamel/learn_n_dev/blob/python_data_prep_cleaning/sparse_matices_for_ML.ipynb)
7. [How to Model Human Activity From Smartphone Data - Activity Recognition](https://github.com/jgamel/learn_n_dev/blob/python_data_prep_cleaning/Data_Prep_Histograms_Example.ipynb)

AI, Machine Learning

1. Neural Network
   1. [Neural Network Tutorial](https://github.com/jgamel/learn_n_dev/blob/python_machine_learning/Neural_Network_Tutorial.ipynb)
      1. [Multi-Layer Perceptron Neural Networks](https://github.com/jgamel/learn_n_dev/blob/python_machine_learning/Multi_Layer_Perceptron_Neural_Networks_Tutorial.ipynb)
      2. [Convolutional Neural Networks](https://github.com/jgamel/learn_n_dev/blob/python_machine_learning/Convolutional_Neural_Networks_Tutorial.ipynb)
      3. [Recurrent Neural Networks](https://github.com/jgamel/learn_n_dev/blob/python_machine_learning/Recurrent_Neural_Networks_Tutorial.ipynb)
      4. [Difference Between a Batch and an Epoch in a Neural Network](https://github.com/jgamel/learn_n_dev/blob/python_machine_learning/Batch_vs_Epoch_diff.ipynb)
   2. [Neural Network in Python using Keras Example 1](https://github.com/jgamel/learn_n_dev/blob/python_machine_learning/Neural_Network_Keras_Example.ipynb)
   3. [Deep Learning Project in Python with Keras Step-By-Step](https://github.com/jgamel/learn_n_dev/blob/python_machine_learning/simple_deep_learning_python_keras.ipynb)
   4. [How to Choose Loss Functions When Training Deep Learning Neural Networks](https://github.com/jgamel/learn_n_dev/blob/python_machine_learning/Choose_Loss_Functions_Example.ipynb)
   5. [Image Augmentation for Deep Learning With Keras](https://github.com/jgamel/learn_n_dev/blob/python_machine_learning/Image_Augmentation.ipynb)
2. [Introduction to Cross-Entropy for Machine Learning](https://github.com/jgamel/learn_n_dev/blob/python_machine_learning/Cross_Entropy.ipynb)
3. [Maximum Likelihood Estimation for Machine Learning](https://github.com/jgamel/learn_n_dev/blob/python_machine_learning/MLE_for_ML_Tutorial.ipynb)
4. [Calculate the KL Divergence for Machine Learning](https://github.com/jgamel/learn_n_dev/blob/python_machine_learning/KL_Divergence.ipynb)
5. [How to Make Predictions with Keras](https://github.com/jgamel/learn_n_dev/blob/python_machine_learning/make_predictions_with_keras.ipynb)
6. [How to Save and Load Your Keras Deep Learning Model](https://github.com/jgamel/learn_n_dev/blob/python_machine_learning/save_load_model_keras.ipynb)
7. [How to Visualize a Deep Learning Neural Network Model in Keras](https://github.com/jgamel/learn_n_dev/blob/python_machine_learning/Visualize_Neural_Network_Model_Keras.ipynb)
8. [Display Deep Learning Model Training History in Keras](https://github.com/jgamel/learn_n_dev/blob/python_machine_learning/Model_Visual_Keras.ipynb)
9. [How to Develop LSTM Models for Time Series Forecasting](https://github.com/jgamel/learn_n_dev/blob/python_machine_learning/LSTM_TimeSeries_Forecasting.ipynb)
10. [Adam Optimization Algorithm for Deep Learning](https://github.com/jgamel/learn_n_dev/blob/python_machine_learning/Adam_Optimization.ipynb)