Machine Learning Workshop

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Overview of ML Workshop

- What is Machine Learning?
- Supervised and Unsupervised Learning
- Regressing and Classification
- Python Basics
- Data Preprocessing with Pandas
- Scikit-Learn
- Hands-On full Machine Learning Classification Project

Before We Start

Install anaconda

Create an environment and install these packages

pip install pandas matplotlib seaborn scikit-learn

Clone the files from GitHub

The following is a link of all the files used in this workshop

https://github.com/hemansnation/MLWorkshopWDC

What is Machine Learning?

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- Machine Learning is the field of study that makes it possible for problems to be solved by computers without requiring direct programming to be implemented.

- Pillars of Machine Learning are Statistics, Linear Algebra, Calculus and Probability

Supervised and Unsupervised Learning

Supervised Learning

Unsupervised Learning

Regression

Linear Regression

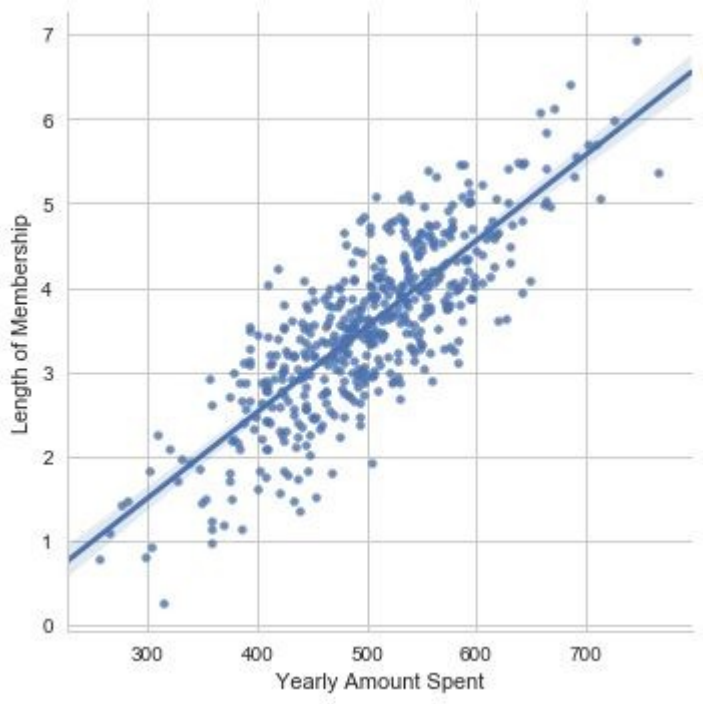
Classification

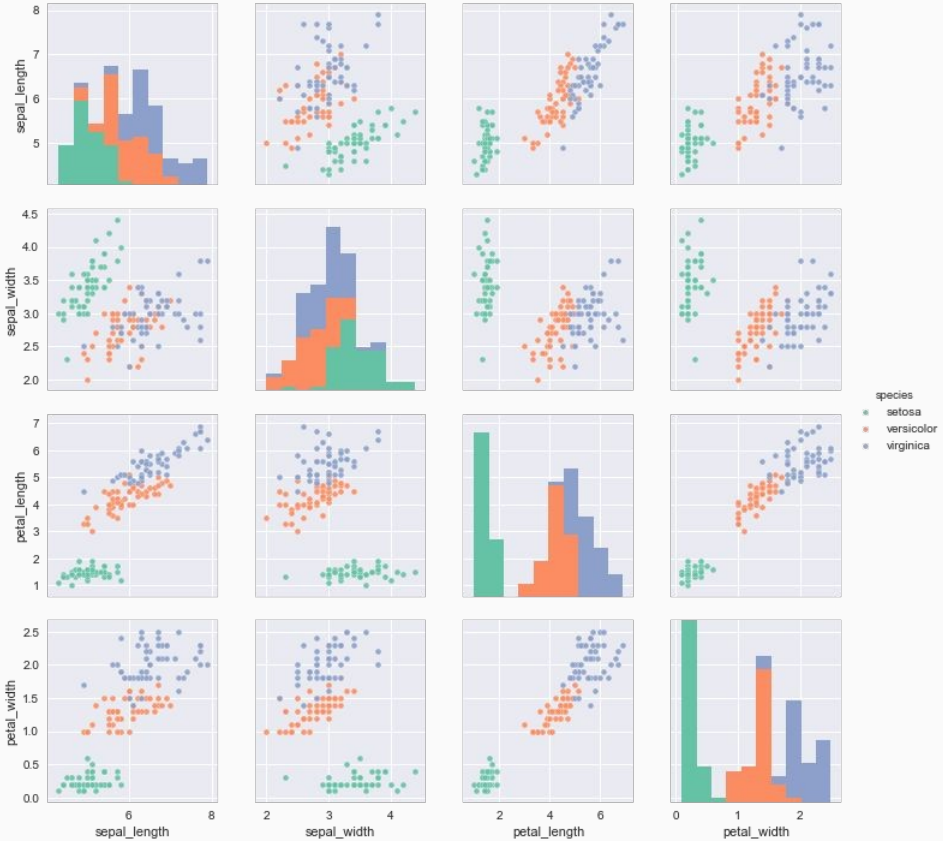
Logistic Regression

Clustering

Regression and Classification

- Regression involves trying to estimate the relationship among Variables, traditionally with statistical methods this involved ordinary least squares (OLS), Machine Learning models attempt to achieve the same, estimating the outcome for a real number.
- Classification involves determining the class of an outcome from a discrete set of possible outcomes, traditionally this was performed using logistics regression, Machine Learning models are applied to attempt to determine the class of an estimated outcome.





Examples of regression and classification problems solved using Machine Learning methods

Feature Engineering and Data Cleaning

- One of the biggest challenges in Machine Learning is getting the data in the optimal format and also extracting/encoding the information in such a way that it's optimal for the model to infer the desired outcome.

- Another challenge is dealing with noisy/erroneous data, which is often the bulk of the initial Machine Learning Work.

Lets get started !!

With
Machine Learning
Model Building