

## **DATA ANALYTICS / MACHINE LEARNING & DEEP LEARNING IN PYTHON**

- Clear algorithm explanations that help you to understand the principles that underlie each technique.
- Quick mathematical primer for each algorithm on black-board to show you exactly how each model learns.
- Real worked examples so that you can see exactly the numbers in and the numbers out, there's nowhere for the details to hide.

### **TENTATIVE COURSE CONTENTS:**

#### **Python**

- Basics of programming, functions, conditional statements, etc..
- Numpy
- SciPy
- Pandas library, Data importing, working with DataFrame objects
- Matplotlib

#### **Machine Learning in Python**

- Review of Essential Mathematics required for Machine Learning (Probability, Statistics, Linear algebra & Matrix Calculus).
- Understanding data (statistically)
- Visualizing your data using matplotlib and Seaborn library.
- Feature Selection by data visualisation and statistical analysis.
- Deep-Dive into Scikit-Learn Package for Machine Learning: Data preprocessing, (Rescaling, Normalization, Standardization, One-Hot encoding etc..),
- Feature Selection methods in sklearn package.
- Different Performance Metrics used in Machine Learning Algorithms,
- K-fold Cross-Validation techniques.
- Implementing Classification and Regression Algorithms in actual datasets.
- Comparison of these algorithms.
- All types of Regularization methods.
- Clustering techniques in Machine learning problems.
- Using Pipelines to automate machine learning workflows.
- Using Ensemble methods (Bagging and Boosting),
- Improving the performance of models by tuning algorithm parameters.
- Finalizing your model with using pickle and joblib packages in Python and deployment.
- Some case studies.

#### **Deep Learning using Python**

- Neural Networks Basics, Keras and TensorFlow Library
- Convolutional Neural Networks, Recurrent Neural Networks,
- LSTM models, and NLP Applications
- Case studies.

Cheers!. 😊

Prashant Sahu,

+91 988 171 9501; prashant9501@gmail.com

<https://www.linkedin.com/in/prashantksahu/>