Weekly Report: MD. Ariful Islam Shakil

Week-03 (April 07 – April 11)

1. Machine Learning specialization:

- i. Course 02: Advanced Learning Algorithms
 - a) Week-04: Decision Tree, Entropy, Information Gain, Handing Categorical Data, Random Forest, XGBoost
- ii. Course 03: Unsupervised Learning, Recommenders, Reinforcement Learning
 - a) Week 01: Clustering Algorithm, Anomaly Detection
 - b) Week 02: Recommendation System (Collaborative Filtering, Content Base Filtering)

2. Mathematics for Machine Learning: Linear Algebra

- i. Week -04: Non-squired matrix multiplication, Matrices changing basis, Transformation in changed basis, Orthogonal Matrices
- ii. Week -05: Eigenvalues, Eigenvectors, Changing to Eigenbasis.

3. Mathematics for Machine Learning: Multivariate Calculus

- Week 01: Basics of Calculus, Function, Gradiant and Derivatives,
 Product Rule, Chain Rule.
- ii. Week 02: Differentiations based on multiple variable, Partial Derivatives, Jacobian.

4. OOP Concepts

i. Merged Documentation of OOP concept.

5. Academia Research

 Lecture: How to Search & Analyze Relevant Research Papers, Blogs & Online Resources.

6. AGILE

i. Lecture 02: Detailed lecture on Agile Framework "Scrum"

7. Machine Learning

- i. Lecture: Life cycles of Machine learning project from Data collection to model evaluation and deployment as well as maintenance.
- ii. Assigned ML project on stock price prediction based onTesla_Stock_dataset

8. Research paper

- i. XGBOOST
 - a) Submitted review report