Course: Introduction to Machine Learning

Course Code: noc18-cs40

Session: 2018-19

Duration: 8 Weeks

Assessment procedures: Weekly Assignment (25%) + proctored certification Exam (75%)

Curriculum of the Course:

Week 1

- Lecture 01: Introduction
- Lecture 02: Different Types of Learning
- Lecture 03: Hypothesis Space and Inductive Bias
- Lecture 04: Evaluation and Cross-Validation
- Tutorial I

Week 2

- Lecture 05 : Linear Regression
- Lecture 06 : Introduction to Decision Trees
- Lecture 07 : Learning Decision Tree
- Lecture 08 : Overfitting
- Lecture 9: Python Exercise on Decision Tree and Linear Regression
- Tutorial II

Week 3:

- Lecture 12: k-Nearest Neighbour
- Lecture 13: Feature Selection
- Lecture 14: Feature Extraction
- Lecture 15: Collaborative Filtering
- Lecture 16: Python Exercise on kNN and PCA
- Lecture 17: Tutorial III

Week 4:

- Lecture 18: Bayesian Learning
- Lecture 19: Naive Bayes
- Lecture 20 : Bayesian Network
- Lecture 21: Python Exercise on Naive Bayes
- Lecture 22: Tutorial IV

Week 5:

- Lecture 23 : Logistic Regression
- Lecture 24: Introduction Support Vector Machine
- Lecture 25: SVM : The Dual Formulation
- Lecture 26: SVM : Maximum Margin with Noise

- Lecture 27: Nonlinear SVM and Kernel Function
- Lecture 28: SVM : Solution to the Dual Problem
- Lecture 29: Python Exercise on SVM

Week 6

- Lecture 30: Introduction
- Lecture 31: Multilayer Neural Network
- Lecture 32 : Neural Network and Backpropagation Algorithm
- Lecture 33: Deep Neural Network
- Lecture 34: Python Exercise on Neural Network
- Lecture 35: Tutorial VI

Week 7:

- Lecture 36: Introduction to Computational Learning Theory
- Lecture 37: Sample Complexity : Finite Hypothesis Space
- Lecture 38: VC Dimension
- Lecture 39 : Introduction to Ensembles
- Lecture 40 : Bagging and Boosting

Week 8

- Lecture 41 : Introduction to Clustering
- Lecture 42 : Kmeans Clustering
- Lecture 43: Agglomerative Hierarchical Clustering
- Lecture 44: Python Exercise on kmeans clustering

Enrolled Students

1	Sahil Agarwal	11	Manoj Kumar
2	Rishabh	12	Mohit Sharma
3	Koushal Kumar Sharma	13	Shyam Murari
4	Anshul Kumar Garg	14	Prashant Singh Charan
5	Chandresh Joshi	15	Rajat Saini
6	Gaurav	16	Manan Saxena
7	Tarun Sharma	17	Shiwanshu Mani
8	Yash Khandelwal	18	Nitesh
9	Kuhuk Rastogi	19	Umang Vanawat
10	Sumit Maindoliya	20	Rishabh Verma