Advanced Data Mining Algorithms and their Scalability for Big Data
January 2-7, 2017

Detailed Course Contents:

Day 1: January 2, 2017	
9:30am - 10:15am	Registration
10:15am -10:55am	Inaugural function followed by tea
11:00am -1:00pm	Lecture 1 **Classification: Perceptrons for linear and support vector machines for non-linear boundaries**
2:30pm - 4:30pm	**Lab (Hadoop Configuration)**
4:45pm -6:45pm	
Day 2: January 3, 2017	
9:00am -11:00am	Lecture 2 **K-means in MapReduce; Hierarchical Clustering**
11:15am -1:15pm	Lab 2 **WordCount and K-Means in MapReduce**
3:00pm - 5:00pm	Lecture 3 **Hierarchical (contd) and Density Based Clustering, cluster validation**
Day 3: January 4, 2017	
9:00am -11:00noon	Lecture 4 **Graph Data, BFS search using MapReduce**
11:15pm -1:15pm	Lab 3 **Hierarchical Clustering, Map-Reduce based algorithmic formulations for association rule mining**
2:30pm - 3:30pm	Evaluation Session
3:30pm - 5:30pm	Lecture 5 **Recap Decesion Tree; Adaboost for classification; Boosting, Bagging**
Day 4: January 5, 2017	
9:00am -11:00am	Lecture 6 **Graph Clustering Algorithms; Frequent Subgraph mining**
11:15am - 1:15pm	Lab 4 **Graph BFS using MapReduce**
2:30pm - 6:30pm	R Programming- Introduction, Environment, Data structures, Data Type, Importing and Exporting data.
Day 5: January 6, 2017	
9:00am - 11:00am	Lecture 7 **Frequent Subgraph Mining (contd), Anomaly Detection**
11:15am - 1:15pm	R Programming- Plots and graphs, Descriptive statistics
2:30pm - 5:30pm	R Programming- Cross tabulations and non parametric tests, ANOVA
5:30pm - 7:00pm	Presentations by participants
Day 6: January 7, 2017	
9:00am-1:00pm	R Programming- Regression, Neural networks
2:30pm -4:30pm	R Programming- Decision trees
4:30pm – 5:00pm	Valedictory Function