Summer Analytics IIT-G

Week 1:

Week 1	**Task 1**	**Task 2**	**Task 3**
Day 0	Download Anaconda(Window)	Download Anaconda(Mac)	Download Anaconda(Linux)
Day 1	Python Programming Tut(video 1 to 5)	NA	NA
Day 2	Python Programming Tut(video 6 to 9)	Intro to Numpy	Into to Pandas
Day 3	Data Analysis with Pandas(vdo 1- 20) optional(25-33)	Python, Numpy, Pandas (Refresher)	Ungraded Assignment
Day 4	Intro to matplotlib	Into to Seaborn and Data Visualization	Visualization with seaborn(Refresher) And Visualization with Matplotlib(Refresher)
Day 5	Data type in statistics	Measure of Central Tendency, Range and St. Deviation	Box plot and Outlier
Assignment	Week1 Assignment		

Week 2:

Week 2	**Task 1**	**Task 2**	**Task 3**
Day 1	Outlier Analysis	Handling Missing Values And Practice Handling Missing Values	What is Exploratory Data Analysis?
Day 2	**[Reading]** Chapter-1**, Page No(1-5)**	What is Machine Learning?	**Supervised** vs **Unsupervised** vs **Reinforcement Learning**
Day 3	Linear Regression Blog	Linear Regression with One Variable Videos 2.1 - 2.6	Linear Algebra Review videos(3.1 - 3.6)**[OPTIONAL]**
Day 4	Linear Regression with multiple variables videos(4.1 - 4.7)	Linear Regression without scikit learn	Linear Regression with scikit learn
Day 5	Logistics Regression videos(6.1 - 6.7)	Logistic Regression Blog	Logistic Regression with scikit learn
Assignments	week 2 Assignments		

Week 3:

Week 3	Task 1	Task 2	Task 3
Day 1	[Videos] Bias-Variance Tradeoff(1)	[Videos] Bias-Variance Tradeoff(2)	[Blog] Bias-Variance Tradeoff
Day 2	Regularization Videos(7.1 - 7.4)	L1 and L2 Regularization	Lasso and Ridge Regression
Day 3	Support Vector Machines	Support Vector Machine algorithm along with code	All Feature Transformation And Feature Transformation and Scaling
Day 4	Lable Encoding and OneHotEncoding	Guide to Encoding Categorical Values in Python	[Videos] The Confusion Matrix
Day 5	[Videos] AUC-ROC Curve	[Blog] AUC-ROC Curve	Evaluation Metrics
Assignment	Week 3 Assignment		

Week 4:

Week 4	Task 1	Task 2	Task 3
Day 1	Decision Tree Videos (41 - 44)	NA	NA
Day 2	Random Forest Videos(46 - 47)	Intro to Machine Learning[Kaggel MicroCourse]	NA
Day 3	Gradient Boosting Videos(52-56)	NA	NA
Day 4	XGBoost Videos(62 - 65)	NA	NA
Day 5	Gradient Boosting Regression	Intermediate Machine Learning[Kaggel MicroCourse]	Practical XGBoost, LightGBM, Catboost**[Optional]**
Assignment	Week 4 Assignment		

Week 5:

Week 5	Task 1	Task 2	Task 3
Day 1	Neural Networks Videos(8.1 - 9.8)	NA	NA
Day 2	Understanding Neural Network	Neural Network With Python	NA
Day 3	Regression with Keras	Classification with Keras	Neural Network with Keras

Day 4	Unsupervised Learning	K-means Clustering	NA
Day 5	Dimensionality Reduction PCA(14.1 - 14.7)	PCA using scikit learn	NA
Assignment	Week 5 Assignment		