MACHINE LEARNING WITH PYTHON - BEGINNER TO ADVANCED

Module	Topics	Duration
Module-1	Introduction to Machine Learning and Data Science Python Programming Basics Data Handling in Python Basic Statistics Mean, Median, Variance Percentiles Data Exploration, Validation and Cleaning	1 Week
	Project -1 Module-1 : Data Cleaning Project	
Module-2	Regression Analysis and Simple Regression Multiple Regression and Multicollinearity Logistic Regression Model Building Decision Trees Information gain Overfitting Pruning Model Validation and Selection Bias Variance Tradeoff Feature Engineering	2 Weeks
	Project-2 Machine Learning Project-1 Project-3 Machine Learning Project-2	
Module-3	Unsupervised learning Cluster Analysis Ensemble Learning Bagging Random Forests Hyperparameters in Random Forests Gradient Boosting Hyperparameters in Gradient Boosting	2 Weeks
	Project-4: Machine Learning Project-3	
Module-4	Artificial Neural networks Concept of the decision boundary	1 Week

	The non-linear decision boundary	
	Gradient Descent and Backpropagation Algorithm	
	Deep Learning Introduction	
	CNN and RNN	
	Project-5: Deep Learning Project	
Module-5	Text mining Basics Preparing text for Analysis	1-Week
	Naive Bayes Model and Sentiment Analysis	
	Word2Vec Algorithm	
	Project -6: NLP and Text mining project	
Module-6	Additional Projects Assessments Documentation of the projects Profile building	2-Weeks

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