**21-Days-Of-Machine-Learning**

**Day: 1**

**Introduction of Data Science**

<https://www.youtube.com/watch?v=edZ_JYpOM8U> (30 Mins)

<https://intellipaat.com/blog/what-is-data-science/> (Blog)

<https://medium.com/@rathi.ankit/data-science-introduction-e03773919c6> (Blog)

<https://towardsdatascience.com/intro-to-data-science-531079c38b22> (Blog)

**Application in Day to Day Life**

<https://www.youtube.com/watch?v=HKcO3-6TYr0> (6 mins)

<https://www.geeksforgeeks.org/machine-learning-introduction/> (Blog)

<https://medium.com/app-affairs/9-applications-of-machine-learning-from-day-to-day-life-112a47a429d0> (Blog)

<https://data-flair.training/blogs/machine-learning-applications/> (Blog)

**Day: 2 & 3**

**Python**

<https://www.youtube.com/watch?v=YfO28Ihehbk> (7 Hrs)

<https://docs.python.org/3/tutorial/> (Official Website)

<https://www.tutorialspoint.com/python/index.htm> (Blog)

**Day: 4**

**Exercises in Python**

<https://www.w3resource.com/python-exercises/>

<https://www.hackerrank.com/domains/python>

<https://codingbat.com/python>

<https://www.practicepython.org/>

<https://pynative.com/python-exercises-with-solutions/>

<https://edabit.com/challenges/python3>

<https://exercism.io/tracks/python/exercises>

<https://programmingwithmosh.com/python/python-exercises-and-questions-for-beginners/>

**Installation of Anaconda Distribution and others**

<https://www.youtube.com/watch?v=5mDYijMfSzs> (14 mins)

<https://docs.anaconda.com/anaconda/install/> (Official Website)

<https://www.programiz.com/python-programming/first-program> (Blog)

**Day: 5**

**Numpy**

<https://www.youtube.com/watch?v=QUT1VHiLmmI> (1 Hrs)

<https://docs.scipy.org/doc/numpy/user/basics.html> (Official Website)

<https://www.w3resource.com/python-exercises/numpy/index.php> (Exercises)

<https://www.machinelearningplus.com/python/101-numpy-exercises-python/> (Exercises)

**Pandas**

<https://www.youtube.com/watch?v=ZyhVh-qRZPA&list=PL-osiE80TeTsWmV9i9c58mdDCSskIFdDS> (4 Hrs)

<https://www.youtube.com/watch?v=eMOA1pPVUc4> (Project)

<https://pandas.pydata.org/pandas-docs/stable/getting_started/10min.html> (Official Website)

<https://www.w3resource.com/python-exercises/pandas/index.php> (Exercises)

**Day: 6**

**Visualization**

**Matplotlib**

<https://www.youtube.com/watch?v=UO98lJQ3QGI&list=PL-osiE80TeTvipOqomVEeZ1HRrcEvtZB>\_ (3 Hrs)

<https://matplotlib.org/tutorials/index.html> (Official Website)

<https://www.machinelearningplus.com/plots/matplotlib-tutorial-complete-guide-python-plot-examples/> (Blog)

**Seaborn**

<https://www.youtube.com/watch?v=GcXcSZ0gQps> (2.5 Hrs)

<https://seaborn.pydata.org/introduction.html> (Official Website)

<https://elitedatascience.com/python-seaborn-tutorial> (Blog)

**Plotly**

<https://www.youtube.com/watch?v=NPznsxeL3FM&list=PLH6mU1kedUy9HTC1n9QYtVHmJRHQ97DBa> (2 Hrs)

<https://plotly.com/python/> (Official Website)

**Day: 7 & 8**

**Maths**

**Linear algebra**

**Matrix**

**Statistics**

<https://www.mathsisfun.com/data/> (Blog)

<https://www.youtube.com/watch?v=uhxtUt_-GyM&list=PL1328115D3D8A2566> (7 Hrs)

**Day: 9**

**Machine Learning and Types**

<https://www.youtube.com/watch?v=HcqpanDadyQ> (6 Mins)

<https://www.youtube.com/watch?v=xtOg44r6dsE> (20 Mins)

<https://towardsdatascience.com/machine-learning-an-introduction-23b84d51e6d0> (Blog)

**Exploratory Data Analysis**

<https://www.youtube.com/watch?v=5NcbVYhQJvw> (45 Mins)

<https://towardsdatascience.com/exploratory-data-analysis-8fc1cb20fd15> (Blog)

**Data Extraction**

<https://towardsdatascience.com/extracting-data-for-machine-learning-f90b97a97f4c> (Blog)

**Data Cleansing and Transformation**

<https://towardsdatascience.com/the-ultimate-guide-to-data-cleaning-3969843991d4> (Blog)

<https://towardsdatascience.com/data-preparation-for-machine-learning-cleansing-transformation-feature-engineering-d2334079b06d> (Blog)

<https://pediaa.com/difference-between-data-cleansing-and-data-transformation/> (Blog)

**Data Preparation**

<https://www.youtube.com/watch?v=Zi-0rlM4RDs> (7 Mins)

<https://machinelearningmastery.com/difference-test-validation-datasets/> (Blog)

<https://towardsdatascience.com/train-validation-and-test-sets-72cb40cba9e7> (Blog)

**Day: 10**

**Model**

<https://www.youtube.com/watch?v=60oFFvywKrQ> (12 Mins)

**Types of Model**

<https://machinelearningmastery.com/types-of-learning-in-machine-learning/> (Blog)

<https://towardsdatascience.com/types-of-machine-learning-algorithms-you-should-know-953a08248861> (Blog)

**Regression**

<https://www.analyticsvidhya.com/blog/2015/08/comprehensive-guide-regression/> (Blog)

<https://www.geeksforgeeks.org/regression-classification-supervised-machine-learning/> (Blog)

**Linear Regression**

<https://www.youtube.com/watch?v=E5RjzSK0fvY> (30 Mins)

<https://towardsdatascience.com/introduction-to-machine-learning-algorithms-linear-regression-14c4e325882a> (Blog)

<https://machinelearningmastery.com/linear-regression-for-machine-learning/> (Blog)

<https://towardsdatascience.com/understanding-the-ols-method-for-simple-linear-regression-e0a4e8f692cc> (Blog)

**Bias and Variance**

<https://www.youtube.com/watch?v=EuBBz3bI-aA> (7 Mins)

<https://towardsdatascience.com/understanding-the-bias-variance-tradeoff-165e6942b229> (Blog)

<https://machinelearningmastery.com/gentle-introduction-to-the-bias-variance-trade-off-in-machine-learning/> (Blog)

**Overfitting and Underfitting**

<https://machinelearningmastery.com/overfitting-and-underfitting-with-machine-learning-algorithms/> (Blog)

**MSE,MAE, R-Square**

<https://medium.com/@george.drakos62/how-to-select-the-right-evaluation-metric-for-machine-learning-models-part-1-regrression-metrics-3606e25beae0> (Blog)

**Day: 11**

**Polynomial Regression**

<https://www.youtube.com/watch?v=Qnt2vBRW8Io> (6 Mins)

<https://towardsdatascience.com/polynomial-regression-bbe8b9d97491> (Blog)

**Ridge Regression**

<https://www.youtube.com/watch?v=Q81RR3yKn30> (30 Mins)

<https://towardsdatascience.com/ridge-regression-for-better-usage-2f19b3a202db> (Blog)

**Lasso Regression**

<https://www.youtube.com/watch?v=NGf0voTMlcs> (9 Mins)

<https://towardsdatascience.com/ridge-and-lasso-regression-a-complete-guide-with-python-scikit-learn-e20e34bcbf0b> (Blog)

**Elastic Net Regression**

<https://www.youtube.com/watch?v=1dKRdX9bfIo> (6 Mins)

<https://hackernoon.com/an-introduction-to-ridge-lasso-and-elastic-net-regression-cca60b4b934f> (Blog)

<https://www.datacamp.com/community/tutorials/tutorial-ridge-lasso-elastic-net> (Blog)

**Day: 12**

**Support Vector Regression(SVR)**

<https://www.youtube.com/watch?v=Fq_mwvdzzjI> (10 Mins)

<https://towardsdatascience.com/an-introduction-to-support-vector-regression-svr-a3ebc1672c2> (Blog)

**Decision Tree Regression**

<https://www.youtube.com/watch?v=g9c66TUylZ4> (23 Mins)

<https://towardsdatascience.com/decision-tree-algorithm-explained-83beb6e78ef4> (Blog)

<https://medium.com/pursuitnotes/decision-tree-regression-in-6-steps-with-python-1a1c5aa2ee16> (Blog)

**Day: 13**

**Random Forest Regression**

<https://www.youtube.com/watch?v=D_2LkhMJcfY> (8 Mins)

<https://www.geeksforgeeks.org/random-forest-regression-in-python/> (Blog)

<https://towardsdatascience.com/random-forest-and-its-implementation-71824ced454f> (Blog)

**Ensemble Method**

<https://towardsdatascience.com/ensemble-methods-in-machine-learning-what-are-they-and-why-use-them-68ec3f9fef5f> (Blog)

<https://blog.statsbot.co/ensemble-learning-d1dcd548e936> (Blog)

**Bagging and Boosting**

<https://towardsdatascience.com/ensemble-methods-bagging-boosting-and-stacking-c9214a10a205> (Blog)

**Bootstrap**

<https://machinelearningmastery.com/a-gentle-introduction-to-the-bootstrap-method/> (Blog)

<https://towardsdatascience.com/an-introduction-to-the-bootstrap-method-58bcb51b4d60> (Blog)

**Day: 14**

**Classification**

<https://www.youtube.com/watch?v=pXdum128xww> (34 Mins)

<https://medium.com/datadriveninvestor/classification-algorithms-in-machine-learning-85c0ab65ff4> (Blog)

<https://medium.com/@Mandysidana/machine-learning-types-of-classification-9497bd4f2e14> (Blog)

**Logistic Regression**

<https://www.youtube.com/watch?v=VCJdg7YBbAQ> (1 Hrs)

<https://towardsdatascience.com/logistic-regression-detailed-overview-46c4da4303bc> (Blog)

<https://machinelearningmastery.com/logistic-regression-for-machine-learning/> (Blog)

**K-Nearest Neighbors (K-NN)**

<https://www.youtube.com/watch?v=HVXime0nQeI> (6 Mins)

<https://towardsdatascience.com/machine-learning-basics-with-the-k-nearest-neighbors-algorithm-6a6e71d01761> (Blog)

<https://www.geeksforgeeks.org/k-nearest-neighbours/> (Blog)

<https://www.analyticsvidhya.com/blog/2018/03/introduction-k-neighbours-algorithm-clustering/> (Blog)

**Precision and Recall**

<https://towardsdatascience.com/beyond-accuracy-precision-and-recall-3da06bea9f6c> (Blog)

<https://towardsdatascience.com/precision-vs-recall-386cf9f89488> (Blog)

<https://machinelearningmastery.com/precision-recall-and-f-measure-for-imbalanced-classification/> (Blog)

**F-Score**

<https://towardsdatascience.com/accuracy-recall-precision-f-score-specificity-which-to-optimize-on-867d3f11124> (Blog)

**AUC & ROC**

<https://towardsdatascience.com/understanding-auc-roc-curve-68b2303cc9c5> (Blog)

<https://machinelearningmastery.com/roc-curves-and-precision-recall-curves-for-classification-in-python/> (Blog)

**Day: 15**

**Support Vector Machine (SVM)**

<https://www.youtube.com/watch?v=efR1C6CvhmE&t=897s> (21 Mins)

<https://towardsdatascience.com/support-vector-machine-introduction-to-machine-learning-algorithms-934a444fca47> (Blog)

**Naive Bayes**

<https://www.youtube.com/watch?v=l3dZ6ZNFjo0> (45 Mins)

<https://towardsdatascience.com/naive-bayes-classifier-81d512f50a7c> (Blog)

**Principal Component Analysis (PCA)**

<https://www.youtube.com/watch?v=FgakZw6K1QQ> (22 Mins)

<https://towardsdatascience.com/a-one-stop-shop-for-principal-component-analysis-5582fb7e0a9c> (Blog)

**Cross Validation**

<https://www.youtube.com/watch?v=7062skdX05Y> (17 Mins)

<https://towardsdatascience.com/cross-validation-in-machine-learning-72924a69872f> (Blog)

<https://machinelearningmastery.com/k-fold-cross-validation/> (Blog)

**Grid Search**

<https://www.youtube.com/watch?v=HdlDYng8g9s> (17 Mins)

<https://www.youtube.com/watch?v=Ah4wsTXghwI> (8 Mins)

<https://towardsdatascience.com/grid-search-for-model-tuning-3319b259367e> (Blog)

<https://www.datacamp.com/community/tutorials/parameter-optimization-machine-learning-models> (Blog)

**UnderSampling and OverSampling**

<https://machinelearningmastery.com/random-oversampling-and-undersampling-for-imbalanced-classification/> (Blog)

<https://machinelearningmastery.com/combine-oversampling-and-undersampling-for-imbalanced-classification/> (Blog)

<https://www.kaggle.com/residentmario/undersampling-and-oversampling-imbalanced-data> (Blog)

**Balanced and InBalanced Data**

<https://medium.com/analytics-vidhya/what-is-balance-and-imbalance-dataset-89e8d7f46bc5> (Blog)

<https://www.analyticsvidhya.com/blog/2017/03/imbalanced-data-classification/> (Blog)

<https://www.kdnuggets.com/2017/06/7-techniques-handle-imbalanced-data.html> (Blog)

**Day: 16**

**Decision Tree Classification**

<https://www.youtube.com/watch?v=7VeUPuFGJHk> (20 Mins)

<https://towardsdatascience.com/decision-tree-classification-de64fc4d5aac> (Blog)

<https://www.datacamp.com/community/tutorials/decision-tree-classification-python> (Blog)

**Random Forest Classification**

<https://www.youtube.com/watch?v=D_2LkhMJcfY> (8 Mins)

<https://towardsdatascience.com/random-forest-classification-and-its-implementation-d5d840dbead0> (Blog)

<https://towardsdatascience.com/understanding-random-forest-58381e0602d2> (Blog)

**Out of Bag (OOB)**

<https://towardsdatascience.com/what-is-out-of-bag-oob-score-in-random-forest-a7fa23d710> (Blog)

**Confusion Matrix**

<https://www.youtube.com/watch?v=8Oog7TXHvFY> (36 Mins)

<https://towardsdatascience.com/understanding-confusion-matrix-a9ad42dcfd62> (Blog)

**Day: 17**

**Clustering**

<https://www.youtube.com/watch?v=UhVn2WrzMnI> (24 Mins)

<https://www.analyticsvidhya.com/blog/2016/11/an-introduction-to-clustering-and-different-methods-of-clustering/> (Blog)

<https://towardsdatascience.com/the-5-clustering-algorithms-data-scientists-need-to-know-a36d136ef68> (Blog)

**K-Means Clustering**

<https://www.youtube.com/watch?v=4b5d3muPQmA> (8 Mins)

<https://towardsdatascience.com/understanding-k-means-clustering-in-machine-learning-6a6e67336aa1> (Blog)

<https://towardsdatascience.com/k-means-clustering-algorithm-applications-evaluation-methods-and-drawbacks-aa03e644b48a> (Blog)

**Hierarchical Clustering**

<https://www.youtube.com/watch?v=7xHsRkOdVwo> (12 Mins)

<https://towardsdatascience.com/understanding-the-concept-of-hierarchical-clustering-technique-c6e8243758ec> (Blog)

**Day: 18**

**NLP**

<https://www.youtube.com/watch?v=FLZvOKSCkxY&list=PLQVvvaa0QuDf2JswnfiGkliBInZnIC4HL> (3 Hrs)

<https://towardsdatascience.com/your-guide-to-natural-language-processing-nlp-48ea2511f6e1> (Blog)

**Day: 19**

**XGBoost**

<https://www.youtube.com/watch?v=kho6oANGu_A> (22 Mins)

<https://machinelearningmastery.com/gentle-introduction-xgboost-applied-machine-learning/> (Blog)

<https://towardsdatascience.com/https-medium-com-vishalmorde-xgboost-algorithm-long-she-may-rein-edd9f99be63d> (Blog)

**Day: 20**

**Deploy Model**

<https://www.youtube.com/watch?v=-UYyyeYJAoQ> (36 Mins)

<https://towardsdatascience.com/simple-way-to-deploy-machine-learning-models-to-cloud-fd58b771fdcf> (Blog)

<https://towardsdatascience.com/a-simple-way-to-deploy-any-machine-learning-model-106d463e9a4b> (Blog)

<https://www.kdnuggets.com/2019/06/approaches-deploying-machine-learning-production.html> (Blog)

<https://www.analyticsvidhya.com/blog/2017/09/machine-learning-models-as-apis-using-flask/> (Blog)

**Day: 21**

**Projects**

<https://elitedatascience.com/machine-learning-projects-for-beginners>

<https://data-flair.training/blogs/machine-learning-project-ideas/>

<https://www.dezyre.com/article/top-10-machine-learning-projects-for-beginners/397>

<https://www.ubuntupit.com/top-20-best-machine-learning-projects-for-beginner-to-professional/>

<https://www.simplilearn.com/machine-learning-projects-for-beginners-article>

**Interview Preparation**

<https://github.com/iNeuronai/interview-question-data-science->

Learn More

**Deep Learning**

**Tableau**

**Flask**

<https://www.youtube.com/watch?v=MwZwr5Tvyxo&list=PL-osiE80TeTs4UjLw5MM6OjgkjFeUxCYH> (10 Hrs)

<https://palletsprojects.com/p/flask/> (Blog)

<https://www.fullstackpython.com/flask.html> (Blog)

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