**Youtube Channels**

[Krish Naik](https://www.youtube.com/@krishnaik06) [Channel where concepts are taught in an easy manner]

[Code Basics](https://www.youtube.com/@codebasics/videos) [Theory + Code. Very brief and surface level understanding of the topic]

[StatQuest](https://www.youtube.com/@statquest/videos) [Channel where math behind ml model is explained]

[Nicholas R](https://www.youtube.com/@NicholasRenotte) [Channel with Full Walkthrough of ML/DL Projects]

[CampusX](https://www.youtube.com/@campusx-official) [Channel with Very Detailed Explanation]

**Book**

[Best overall for beginner](https://drive.google.com/file/d/1iYPCX94oaOdjCbLVkmPsw2-TzCgWSu3L/view?usp=sharing)

[Data science from Scratch](https://drive.google.com/file/d/1qVnOnvW0swcHx-dc97rCFXgF6j9fP7Ug/view?usp=sharing)

**Online Foreign Uni Courses**

[CS229 || Stanford](https://docs.google.com/spreadsheets/d/1uWJ3bMTCtNU6TUx4zsvPtz3FKaQc1VNNwB91hGl7Klk/edit?pli=1&gid=0#gid=0) [Stanford - CS229 (Complete Lecture)](https://youtube.com/playlist?list=PLoROMvodv4rMiGQp3WXShtMGgzqpfVfbU&feature=shared)

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**Pre-requisite**

[Coursera - Mathematics for Machine Learning and Data Science Specialization](https://www.coursera.org/specializations/mathematics-for-machine-learning-and-data-science)

**0. Intro to Machine Learning and its types**

[What is Machine Learning?](https://youtu.be/QghjaS0WQQU?feature=shared)

[What is Machine Learning? [In under 4 minutes!]](https://youtu.be/Rh9t8CKqi-c?feature=shared)

**1. Preprocessing / Exploratory Data Analysis For Tabular Data**

In the beginning, we have to learn to work with tabular data. For that the most crucial library is Pandas. [Pandas Documentation](https://pandas.pydata.org/docs/reference/frame.html) [to know everything pandas has to offer]

[Pandas for ML Preprocessing (Collab Notebook)](https://colab.research.google.com/drive/1hJzl8sMa8gAAfAH23m3Am2vXefSzNs3o?authuser=2#scrollTo=mAQylWEc4I_u) [*following this should be enough for beginners*]

[Coursera - Course 1](https://www.coursera.org/learn/ibm-exploratory-data-analysis-for-machine-learning?specialization=ibm-machine-learning)

[YT Pandas Playlist](https://youtube.com/playlist?list=PLeo1K3hjS3uuASpe-1LjfG5f14Bnozjwy&feature=shared)

**2. Supervised Learning: Classification**

[Coursera Course 1](https://www.coursera.org/learn/supervised-machine-learning-classification?specialization=ibm-machine-learning) **[Must Watch]**

***Algorithm To Learn***: Logistic Regression, Support Vector Machine, Naive Bayes, K Nearest Neighbour, Decision Tree, Bagging Classifier, Random Forest, Ensemble Techniques.

| ***Algorithm To Learn*** | ***Video Link*** | ***Article / Book Chapter*** |
| --- | --- | --- |
| Logistic Regression | [Video 1](https://youtu.be/r8OjlgWpAI0?feature=shared)  [Theory + Code](https://youtu.be/zM4VZR0px8E?feature=shared) |  |
| Support Vector Machine | [Video 1](https://youtu.be/_YPScrckx28?feature=shared)  [Theory + Code](https://www.youtube.com/watch?v=FB5EdxAGxQg)  [More In Depth Understanding](https://youtu.be/efR1C6CvhmE?feature=shared)  [Using Kernel Trick](https://youtu.be/Toet3EiSFcM?feature=shared) |  |
| Naive Bayes | [Video 1](https://youtu.be/jS1CKhALUBQ?feature=shared)  [Theory + Code](https://youtu.be/PPeaRc-r1OI?feature=shared)  [More in Depth Understanding](https://youtu.be/O2L2Uv9pdDA?feature=shared) |  |
| K Nearest Neighbour | [Theory + Code](https://youtu.be/CQveSaMyEwM?feature=shared) |  |
| Decision Tree | [Video 1](https://youtu.be/ZVR2Way4nwQ?feature=shared)  [Theory + Code](https://youtu.be/PHxYNGo8NcI?feature=shared) |  |
| Ensemble Learning Model | [Theory 1](https://youtu.be/5TOSlFQnnPU?feature=shared)  [Theory 2](https://youtu.be/j9jGLwPa6_E?feature=shared) |  |
| Random Forest |  |  |
| Boosting |  |  |

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**3. Machine Learning Best Practices**

(i) Imbalance in Dataset and why accuracy is not a good measure:

(ii) HyperParameter Tuning:

(iii) Underfitting - Overfitting (Bias- Variance Tradeoff):

[Video 1](https://youtu.be/B01qMFMAgUQ?feature=shared)

**4. Supervised Learning: Regression**

[Coursera Course 1](https://www.coursera.org/learn/supervised-machine-learning-regression)

**5. Un-Supervised Learning [optional]**

[Coursera Course 1](https://www.coursera.org/learn/ibm-unsupervised-machine-learning?specialization=ibm-machine-learning)

**6. Advanced Topic: Deep Learning**

[YT - What is a neurone](https://youtu.be/VhRtaziEWd4?feature=shared)

[Coursera Course 1](https://www.coursera.org/learn/neural-networks-deep-learning?)