**Machine learning**

**Topics**

ML a-z and Deep Learning A-Z

**0.1 ML a-z TOPICS**

1. **Welcome to the course:**
2. Applications of Machine Learning
3. Learning Paths
4. ML vs. DL vs. AI - What's the Difference
5. Regression Types
6. Why Machine Learning is the Future
7. PDF resource
8. GET ALL THE CODES AND DATASETS
9. Presentation of the ML A-Z folder, Colaboratory, Jupyter Notebook and Spyder
10. Installing R and R Studio (Mac Linux & Windows)
11. Your Shortcut To Becoming A Better Data Scientist!
12. **Part 1: Data Preprocessing**

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| * **Data Preprocessing in Python** | * **Data Preprocessing in R** |
| 1. Make sure you have your Machine Learning A-Z folder ready 2. Getting Started 3. Importing the Libraries 4. Importing the Dataset 5. For Python learners, summary of Object-oriented programming: classes & objects 6. A short written summary of what needs to know in Object-oriented programming, e.g. class, object, and method. 7. Taking care of Missing Data 8. Encoding Categorical Data 9. Splitting the dataset into the Training set and Test set 10. Feature Scaling | 1. Welcome 2. Getting Started 3. Make sure you have your dataset ready 4. Dataset Description 5. Importing the Dataset 6. Taking care of Missing 7. Data Encoding Categorical Data 8. Splitting the dataset into the Training set and Test set 9. Feature Scaling 10. Data Preprocessing Template |

1. **Part 2: Regression**
2. Simple Linear Regression
3. Multiple Linear Regression
4. Polynomial Regression
5. Support Vector Regression (SVR)
6. Decision Tree Regression
7. Random Forest Regression
8. Evaluating Regression Models Performance
9. Regression Model Selection in Python
10. Regression Model Selection in R
11. **Part 3: Classification**
12. Logistic Regression K-Nearest Neighbors (K-NN)
13. Support Vector Machine (SVM)
14. Kernel SVM Naive Bayes
15. Decision Tree Classification Random Forest Classification Classification Model Selection in Python
16. Evaluating Classification Models Performance
17. **Part 4: Clustering**
18. K-Means Clustering Hierarchical Clustering
19. **Part 5: Association Rule Learning**
20. Apriori
21. Eclat
22. **Part 6: Reinforcement Learning -**
23. Upper Confidence Bound (UCB)
24. Thompson Sampling
25. **Part 7: Natural Language Processing**
26. **Part 8: Deep Learning............**
27. Artificial Neural Networks Convolutional Neural Networks
28. **Part 9: Dimensionality Reduction**
29. Principal Component Analysis (PCA)
30. Linear Discriminant Analysis (LDA)
31. Kernel PCA
32. **Part 10: Model Selection & Boosting**
33. Model Selection
34. XG Boost
35. Bonus Lectures

**0.2 DL a-z TOPICS**

1. Welcome to the course
2. Part 1 - Artificial Neural Networks (ANN)
3. ANN Intuition
4. Building an ANN
5. Part 2 - Convolutional Neural Networks (CNN)
6. CNN Intuition
7. Building a CNN
8. Part 3 - Recurrent Neural Networks (RNN)
9. RNN Intuition Building a RNN
10. Evaluating and Improving the RNN
11. Part 4 - Self Organizing Maps (SOM)
12. SOMs Intuition Building a SOM
13. Mega Case Study
14. Part 5 - Boltzmann Machines
15. Boltzmann Machine Intuition
16. Building a Boltzmann Machine
17. Part 6 - AutoEncoders
18. AutoEncoders Intuition
19. Building an AutoEncoder
20. Annex - Get the Machine Learning Basics
21. Regression & Classification Intuition
22. Data Preprocessing Template
23. Logistic Regression Implementation
24. Bonus Lectures

Description

Interested in the field of Machine Learning? Then this course is for you!

This course has been designed by two professional Data Scientists so that we can share our knowledge and help you learn complex *theory*, *algorithms* and *coding* *libraries* in a simple way. We will walk you step-by-step into the World of Machine Learning. With every tutorial you will develop new skills and improve your understanding of this challenging yet lucrative sub-field of Data Science.

This course is structured in a fun and exciting way, but at the same time we dive deep into Machine Learning. In this course you will learn the following algorithms:

* Linear Regression
* Multiple Linear Regression
* K-Means Clustering
* Hierarchical Clustering
* K-Nearest Neighbour
* Decision Trees
* Random Forest

Moreover, the course is packed with practical exercises which are based on live examples. So not only will you learn the theory, but you will also get some hands-on practice building your own models. And as a bonus, this course includes both R and Python code templates which you can download and use on your own projects.

What are the requirements?

Just some high school mathematics level.

What am I going to get from this course?

* Master Machine Learning on *Python* & *R*
* Have a great intuition of *many Machine Learning models*
* Make *accurate predictions*
* Make *powerful analysis*
* Make *robust Machine Learning models*
* Create strong added value to your business
* Use Machine Learning for personal purpose
* Handle specific topics like *Reinforcement* Learning, *NLP* and *Deep Learning*
* Handle *advanced* techniques like *Dimensionality Reduction*
* Know which *Machine Learning model* to choose for each *type* of *problem*
* Build an *army of powerful Machine Learning models* and know how to combine them to solve any problem

What is the target audience?

Anyone interested in Machine Learning.

Students who have at least high school knowledge in math and who want to start learning Machine Learning.

Any intermediate level people who know the basics of machine learning, including the classical algorithms like linear regression or logistic regression, but who want to learn more about it and explore all the different fields of Machine Learning.

Any people who are not that comfortable with coding but who are interested in Machine Learning and want to apply it easily on datasets.

Any students in college who want to start a career in Data Science.

Any data analysts who want to level up in Machine Learning.

Any people who are not satisfied with their job and who want to become a Data Scientist.

Any people who want to create added value to their business by using powerful Machine Learning tools.

Learning Paths:

This course is part of the following learning paths:

Data Scientist