**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**

|  |  |
| --- | --- |
| * **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