

TECHGENX

Machine Learning/ Artificial Intelligence with Python

Please Note: All below course content will be covered in practical scenarios and regular assignments will be shared. All sessions will be recorded and shared with student for future reference (free of cost). Along with below course.

1. Applications of Machine Learning
2. Regression Types
3. Why Machine Learning is the Future
4. Presentation of the ML A-Z folder, Colaboratory, Jupyter Notebook and Spyder
5. Installing R and R Studio (Mac, Linux & Windows)
6. Data Preprocessing in Python
7. Getting Started
8. Preparation of dataset
9. Dataset Description
10. Importing the Dataset
11. Taking care of Missing Data
12. Encoding Categorical Data
13. Splitting the dataset into the Training set and Test set
14. Feature Scaling
15. Data Preprocessing Template
16. Regression
17. Simple Linear Regression
18. Simple Linear Regression Intuition - Step 1
19. Simple Linear Regression Intuition - Step 2
20. Machine Learning A-Z folder
21. Simple Linear Regression in Python - Step 1
22. Simple Linear Regression in Python - Step 2
23. Simple Linear Regression in Python - Step 3
24. Simple Linear Regression in Python - Step 4
25. Multiple Linear Regression
26. Dataset + Business Problem Description
27. Multiple Linear Regression Intuition - Step 1
28. Multiple Linear Regression Intuition - Step 2
29. Multiple Linear Regression Intuition - Step 3
30. Multiple Linear Regression Intuition - Step 4
31. Understanding the P-Value
32. Multiple Linear Regression Intuition - Step 5

33. Multiple Linear Regression in Python - Step 1
34. Multiple Linear Regression in Python - Step 2
35. Multiple Linear Regression in Python - Step 3
36. Multiple Linear Regression in Python - Backward Elimination – Assignment
37. Multiple Linear Regression in Python - Automatic Backward Elimination
38. Polynomial Regression
39. Polynomial Regression Intuition
40. Polynomial Regression in Python - Step 1
41. Polynomial Regression in Python - Step 2
42. Polynomial Regression in Python - Step 3
43. Polynomial Regression in Python - Step 4
44. R Regression Template
45. Support Vector Regression (SVR)
46. SVR Intuition (Updated!)
47. Heads-up on non-linear SVR
48. SVR in Python
49. Decision Tree Regression
50. Decision Tree Regression Intuition
51. Decision Tree Regression in Python
52. Random Forest Regression
53. Random Forest Regression Intuition
54. Random Forest Regression in Python
55. Evaluating Regression Models Performance
56. R-Squared Intuition
57. Adjusted R-Squared Intuition
58. Preparation of the Regression Code Templates
59. Demo of powerful regression module.
60. Conclusion of Part 2 – Regression
61. Regression Model Selection in Python
62. Evaluating Regression Models Performance – Assignment
63. Interpreting Linear Regression Coefficients
64. Regression
65. Classification
66. Welcome to Part 3 – Classification
67. Logistic Regression
68. Logistic Regression Intuition
69. Logistic Regression in Python - Step 1
70. Logistic Regression in Python - Step 2
71. Logistic Regression in Python - Step 3
72. Logistic Regression in Python - Step 4
73. Logistic Regression in Python - Step 5
74. R Classification Template

75. Machine Learning Regression and Classification BONUS
76. Logistic Regression- Assignment
77. Logistic Regression Practical Case Study
78. K-Nearest Neighbors (K-NN)
79. K-Nearest Neighbor Intuition
80. K-NN in Python
81. Support Vector Machine (SVM)
82. K-Nearest Neighbor- Assignment
83. SVM Intuition
84. SVM in Python
85. Kernel SVM
86. Kernel SVM Intuition
87. Mapping to a higher dimension
88. The Kernel Trick
89. Types of Kernel Functions
90. Non-Linear Kernel SVR (Advanced)
91. Kernel SVM in Python
92. Naive Bayes
93. Bayes Theorem
94. Naive Bayes Intuition
95. Naive Bayes Intuition (Challenge Reveal)
96. Naive Bayes Intuition (Extras)
97. Naive Bayes in Python
98. Decision Tree Classification
99. Decision Tree Classification Intuition
100. Decision Tree Classification in Python
101. Random Forest Classification
102. Random Forest Classification Intuition
103. Random Forest Classification in Python
104. Demo of the POWERFUL CLASSIFICATION Code Templates
105. Evaluating Classification Models Performance
106. False Positives & False Negatives
107. Confusion Matrix
108. Accuracy Paradox
109. CAP Curve
110. CAP Curve Analysis
111. Conclusion of Part 3 – Classification
112. Clustering
113. K-Means Clustering
114. K-Means Clustering Intuition
115. K-Means Random Initialization Trap
116. K-Means Selecting The Number Of Clusters

117. K-Means Clustering in Python
118. Hierarchical Clust
119. K-Means Clustering- Assignment
120. Hierarchical Clustering Intuition
121. Hierarchical Clustering How Dendrograms Work
122. Hierarchical Clustering Using Dendrograms
123. Hierarchical Clustering in Python - Step 1
124. Hierarchical Clustering in Python - Step 2
125. Hierarchical Clustering in Python - Step 3
126. Hierarchical Clustering in Python - Step 4
127. Hierarchical Clustering in Python - Step 5
128. Hierarchical Clustering- Assignment
129. Conclusion of Part 4 – Clustering
130. Association Rule Learning
131. Welcome to Part 5 - Association Rule Learning.
132. Apriori
133. Apriori Intuition
134. Apriori in Python - Step 1
135. Apriori in Python - Step 2
136. Apriori in Python - Step 3
137. Eclat
138. Eclat Intuition
139. Eclat in Python
140. Reinforcement Learning
141. Upper Confidence Bound (UCB)
142. The Multi-Armed Bandit Problem
143. Upper Confidence Bound (UCB) Intuition
144. Upper Confidence Bound in Python - Step 1
145. Upper Confidence Bound in Python - Step 2
146. Upper Confidence Bound in Python - Step 3
147. Upper Confidence Bound in Python - Step 4
148. Thompson Sampling
149. Thompson Sampling Intuition
150. Algorithm Comparison: UCB vs Thompson Sampling
151. Thompson Sampling in Python - Step 1
152. Thompson Sampling in Python - Step 2
153. Natural Language Processing
154. NLP Intuition
155. Types of Natural Language Processing
156. Classical vs Deep Learning Models
157. Bag-Of-Words Model
158. Natural Language Processing in Python - Step 1

159.	Natural Language Processing in Python - Step 2
160.	Natural Language Processing in Python - Step 3
161.	Natural Language Processing in Python - Step 4
162.	Natural Language Processing in Python - Step 5
163.	Natural Language Processing in Python - Step 6
164.	Natural Language Processing in Python - Step 7
165.	Natural Language Processing in Python - Step 8
166.	Natural Language Processing in Python - Step 9
167.	Natural Language Processing in Python - Step 10
168.	Assignment
169.	NLP BERT
170.	Deep Learning
171.	What is Deep Learning?
172.	Artificial Neural Network
173.	Plan of attack
174.	The Neuron
175.	The Activation Function
176.	How do Neural Networks work?
177.	How do Neural Networks learn?
178.	Gradient Descent
179.	Stochastic Gradient Descent
180.	Backpropagation
181.	Business Problem Description
182.	ANN in Python - Step 1
183.	ANN in Python - Step 2
184.	ANN in Python - Step 3
185.	ANN in Python - Step 4 (Last step)
186.	BONUS: ANN Case Study
187.	Convolutional Neural Networks
188.	Plan of attack
189.	What are convolutional neural networks?
190.	Step 1 - Convolution Operation
191.	Step 1(b) - ReLU Layer
192.	Step 2 – Pooling
193.	Step 3 – Flattening
194.	Step 4 - Full Connection
195.	Softmax & Cross-Entropy
196.	Dimensionality Reduction
197.	Principal Component Analysis (PCA)
198.	Principal Component Analysis (PCA) Intuition
199.	PCA in Python - Step 1
200.	PCA in Python - Step 2

- 201. PCA in Python - Step 3
- 202. Linear Discriminant Analysis (LDA)
- 203. Linear Discriminant Analysis (LDA) Intuition
- 204. LDA in Python
- 205. Kernel PCA
- 206. Kernel PCA in Python
- 207. Model Selection & Boosting
- 208. Model Selection
- 209. k-Fold Cross Validation in Python
- 210. Grid Search in Python
- 211. XGBoost
- 212. XGBoost in Python