MACHINE LEARNING COURSE CURRICULUM

(70 Hrs Online + 45 Hrs Videos)

K2 Analytics
Building Skills, Building Individuals

Website : https://k2analtics.co.in
Mobile : 8939694874 | Email : info@k2analytics.co.in

About K2 Analytics

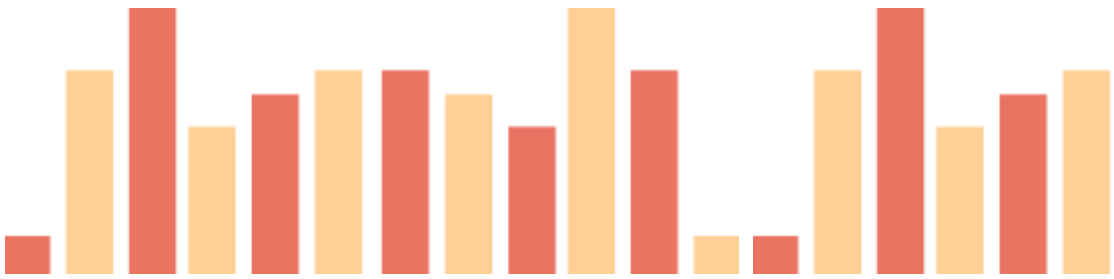
We provide Training, Placement and Consulting Services in the field of Data Science / Machine Learning

Our Website

https://k2analytics.co.in

Our Mission

“To provide training and skill development courses to individuals, make them skilled & industry ready, and create a pool of skilled resources readily available for the industry”



Our Offerings

Instructor Led Online Training

Access to Recorded Video Content

Consult with our faculty for your projects

Hands-on Project Experience

Hands-on Experiential Training

Capstone Projects

Placement Assistance

Machine Learning Course Curriculum

Instructor-led Online Session		
Sr. No	Topic	Hrs.
Tool Training		
1	Python Programming	14
Numerical Skills		
2	Statistics	24
Machine Learning Techniques		
3	Clustering	6
4	Linear Regression	8
5	Classification Tree	8
6	Logistic Regression	10
	Total Hours	**70**

Complimentary Video Access

Complimentary Six Month Access to Video Recordings		
Sr. No	Topic	Hrs.
1	R Programming	10
2	K Nearest Neighbour	1
3	Naïve Bayes	1
4	Linear Regression in R	3
5	Logistic Regression in R	12
2	Bagging (Random Forest) in R & Python	5
3	Classification Tree in R	5
4	Artificial Neural Network in R & Python (Tensorflow & Keras)	8
	Total Hours	**45**

PYTHON PROGRAMMING

COURSE DETAILS

- Introduction to Python and Anaconda
- Spyder and Jupyter Notebook
- Understanding Python Data Structures
  - List, Tuple, Dictionary, Sets
  - Mutable and immutable Objects
- Numpy and Pandas Packages in Python
  - 1D, 2D, 3D Array
  - Series and Dataframe
- Data Import – Export using PANDAS
- Data Manipulation
  - Selecting Rows / Observations
  - Selecting Columns / Fields
  - Merging Data
  - Relabeling the Column Names
  - Converting Variable Types
  - Data Sorting
  - Data Aggregation
- Matplotlib and Seaborn packages
  - Charts & Graphs

COURSE DURATION

- 14 Hours

STATISTICS

COURSE DETAILS

- Introduction to Statistics for Data Science
- Types of Variables
- Descriptive Statistics – Numerical Methods
- Measures of Central Tendency
  - Mean, Median, Mode
- Measures of Dispersion
  - Range, Interquartile Range, Standard Deviation, Variance

- Descriptive Statistics – Tabular & Graphical Methods
  - Histogram, Line Plot, Bar Plot, Pie Chart
  - Box Plot, Scatter Plot
  - Frequency Table, Crosstab

- Probability Concepts
- Distributions
  - Normal Distribution
  - Binomial Distribution
- Central Limit Theorem
- Hypothesis Testing

COURSE DURATION

- 24 Hours

UN-SUPERVISED MACHINE LEARNING

CLUSTERING

COURSE DETAILS

- Clustering
  - Why Clustering?
  - What is Clustering?
  - Measure of Similarity
  - Distance Measures
  - Hierarchical Clustering
  - K Means Clustering
  - Finding Optimal No. of Clusters

PROJECTS

- Clustering of Retail Customers

BLOG LINKS:

Hierarchical Clustering
K Means Clustering

COURSE DURATION

- 6 Hours

SUPERVISED MACHINE LEARNING

LINEAR REGRESSION

COURSE DETAILS

- Introduction to Linear Regression
- Assumptions of Linear Regression
- Simple Linear Regression
- Multiple Linear Regression
- Line of Best Fit
- Residual Error, SSE
- R-Squared & Adj, R-Squared
- Correlation & Multi-Collinearity
- Variance Inflation Factor
- Homoscedasticity & Heteroscedasticity
- Variable Transformation and its Importance

PROJECTS

- Build Linear Regression Model to Estimate Monthly Household Expense

BLOG LINK

Linear Regression blog series

COURSE DURATION

- 8 Hours

SUPERVISED MACHINE LEARNING

CLASSIFICATION TREE

COURSE DETAILS

- Introduction to Classification Tree
- CHAID, CART, C4.5
- Greedy Algorithm
- Balanced & Unbalanced Data
- CART – Gini Gain Calculation
- Binary / Multi-way Split
- Pruning
- Cross-Validation
- Overfitting
- Model Development & Evaluation
- Pros & Cons of Classification Tree Technique

PROJECTS

- Case-Study – Dormant Account Win-back Model
- Classification Tree Model Development on Balanced Dataset

BLOG LINK

Retail Banking Case-Study

COURSE DURATION

- 8 Hours

SUPERVISED MACHINE LEARNING

LOGISTIC REGRESSION

COURSE DETAILS

- Introduction to Logistic Regression
- Log Odds Concept and Logistic Function
- Development, Validation and Hold-out
- Hypothesis Testing
- Outlier Treatment & Missing Value Imputation
- Information Value
- Pattern Detection and Visualization
- Variable Transformation
- Weight of Evidence
- Multi-Collinearity & Variance Inflation Factor (VIF)
- Model Development & Validation
- Model Performance Measurement
    - KS, Rank Order, Lift Chart, AUC-ROC, Gini, Concordance, Hosmer-Lemeshow Goodness of Fit Test

PROJECTS

- Personal Loans Cross-Sell Model using Logistic Regression Technique

BLOG LINK

Logistic Regression blog series

COURSE DURATION

- 10 Hours

/ik2analytics

K2 Analytics Finishing School Private Limited

B / 18, Mirani Nagar, Kopri Colony, Thane East - 400603

k2analytics.co.in

+91 - 89396 94874