

mcodeLabs

MicroCodeLabs is the Best Data Science Course Online Training Institute with 100% Placement Assistance

Training Mode : **Online – Flexible Hours**

Become a data scientist with our exclusively designed data science course. The MCL data science course gives the students an extensive training on data visualisation, machine learning, Python and R etc. The 15+ real-time case study helps the learners enhance their understanding, enabling them to excel in interviews.

Highlights

Job Oriented Training

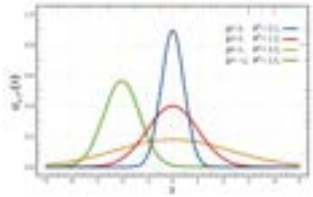
Case Study based training

100% Job Assistance

18+ years industry experience

100+ Companies tie-up for placement

Skills You Will Learn



Statistical analysis



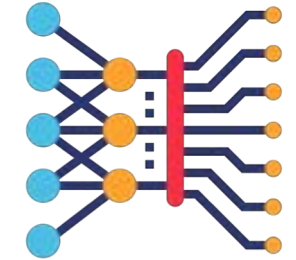
Data Analytics



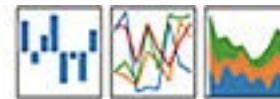
Data Visualization

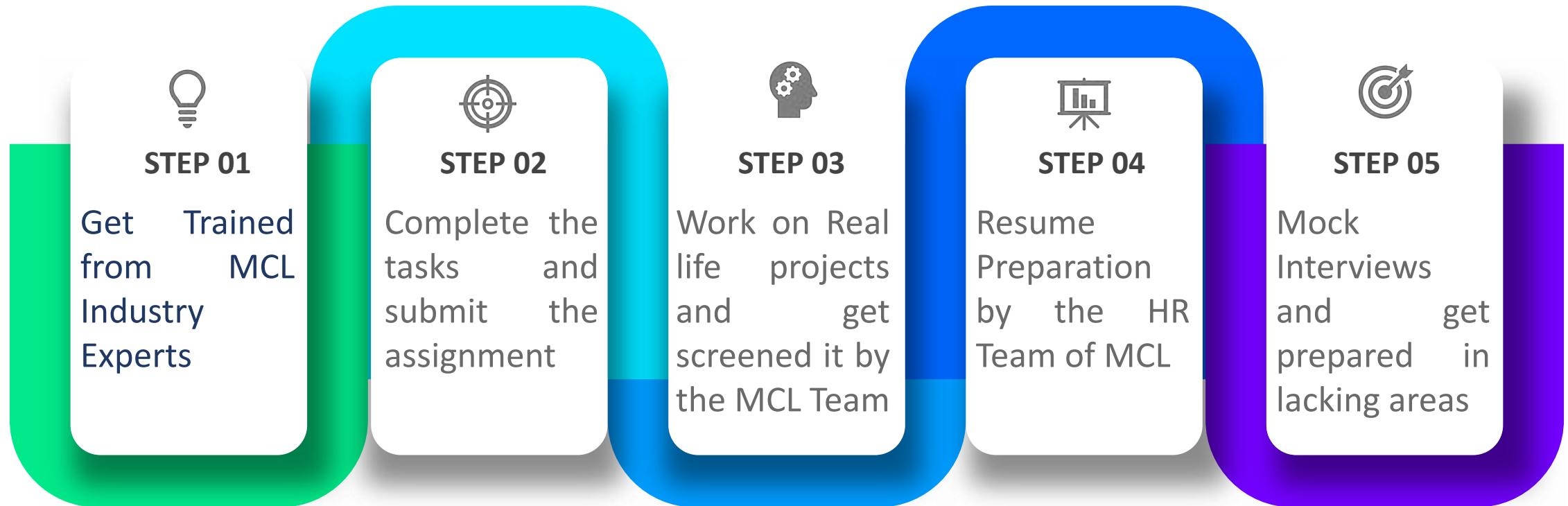


Machine Learning



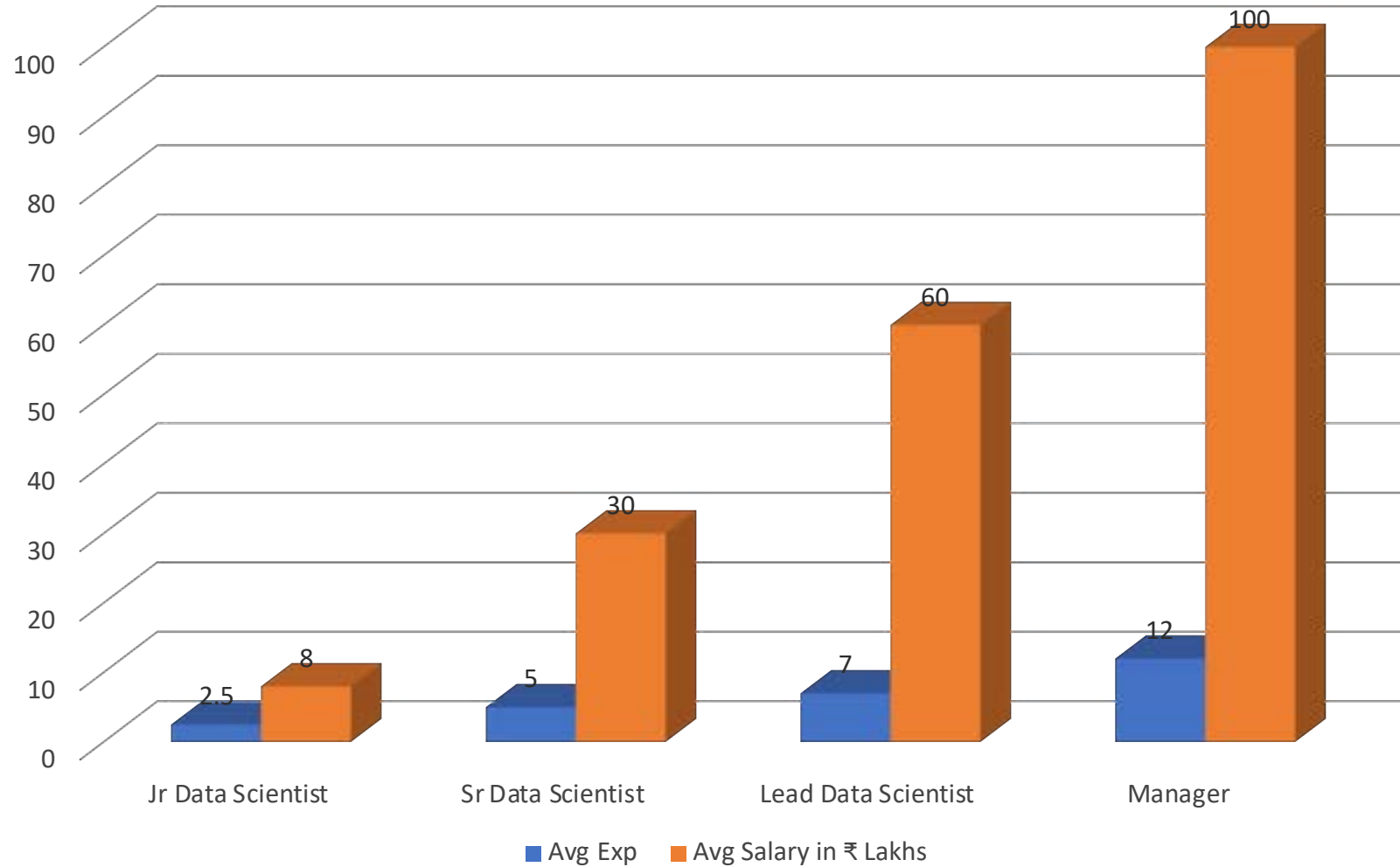
Deep Learning





Ready to face the Realtime interviews

Salary trend for DS in recent past



Introduction To Data Science

- What is Data Science
- What is Big Data
- What is Machine Learning
- What is Analytics
- What is Data analysis and Data Mining
- Analytic project life cycle
- Real life applications, projects and career paths of Data Science

Exploratory Data Analysis (EDA) and Data Visualization

- What is EDA and why is it required
- Outliner treatment
- Data distribution and transformations
- Graphs
- Bar charts
- Histograms
- Box-Whisker plot
- Variable selection
- Bubble charts
- Exam

Statistics

- Definition and computation of probability
- Sampling and Sampling distributions
- Prediction and confidence interval- Computation and Analysis
- Measurement of central tendencies and it's applications
- Spreads, distributions (Normal, Z-distributions, Binomial, Position) and various types of probability distributions (Continuous and discrete)
- Measures of shapes(Skewness and Kurtosis)
- Measures of relationship between variables(Correlation, Causation)
- Hypothesis Testing(t-testing, Chi-square, Anova)
- Measures of Dispersion(Variance, Std. deviation, Range)
- Missing Value theorem
- Contingency Table

Python Programing

- What is Python
- History
- Why is python preferred for Data Science
- Installation of I Python/Jupyter / Notebook/SPYDER

Basics of Python

- Keywords
- Built-in functions
- String Formatting
- Lists
- Loops
- Tuples
- Indexing
- Slicing
- Sequences
- Directions
- Sets
- Importing and exporting data
form Python into various formats

Error and Exception handling:

- Errors in Python
- Abnormal termination
- Exception handling methods
- Ignoring Errors
- Assertion and effective usage of assertions

Functions

- User defined functions
- Parameters
- Nested functions
- Local and Global variables
- Alternate Keys
- Lambda functions
- Shorting Lists and Dictionaries
- Sorting Collections

OOPS

- Methods and Inheritance
- Abstraction and Encapsulation
- Classes
- Walking Directory Trees
- Initialize
- Instance Methods
- Class methods
- Data static Methods
- Expressions
- Module Aliases
- Math functions
- Random numbers
- Package Installation Methods
- Introduction to Numpy, Pandas and other libraries
- Plotting in Python
- Creating Data Frames
- Data Manipulation
- Slicing and Dicing

Machine Learning

Crisp-DM Process

Supervised Learning:

- What is supervised learning
- Algorithms in Supervised learning
- Steps in Supervised learning

Reasoning & Classification:

- Regression vs classification
- Computation of co-relation coefficient and Analysis
- Performance and accuracy measurement of a Model
- Naive Baye's classifier
- Model training, Validation and Testing
- Ordinary Least squares
- Verbal selection
- R-Square coefficient and RMSE as a strength of model
- Prediction and confidence interval
- Determination and application
- Proviso of Regression
- Dummy variables
- Types of Regression: Linear and Logistic(Simple and multiple)
- Sum of least squares
- ROC and AUC curves
- Homoscedasticity and Heteroscedasticity
- Multicollinearity and vif
- Confusion matrix
- Techniques to improve accuracy and performance of regression models
- **Assignments**

Decision Trees and Random Forest Test

- Introduction to decision tree algorithms and its applications
- Classification and regression trees-CART models, ID3,C4,5
- CHAID analysis
- Building Decision Tree using R
- decision nodes and leaf nodes
- variable selection parent and child node branching
- Stopping Criterion
- Tree Pruning
- Depth of a tree
- Overfitting
- Matrix of decision tree-Gini impurity information gain, variation Reduction Regression using decision tree
- Interpretation of a decision tree using if-else
- Pros and cons of a decision tree
- Introduction to Random Forest test and its applications
- Why Random Forest test
- Tree bagging
- Models are algorithms in Random Forest test
- Training Data set, Tree grouping and decision making on majority voting
- Boosting algorithms-Gradient Boosting, Adaptive boosting-Adaboost, Xgboost(advanced)
- Accuracy estimation using cross validation

KNN-algorithm

- What is KNN and why do we use it
- KNN-algorithm and regression
- Curse of dimensionality and brief introduction to dimension reduction
- KNN outlier treatment and anomaly detection
- Cross validation
- Pros and cons of KNN

Support Vector Machines

- Linear and Non-Linear SVM's
- SVM regression
- Train time and Run time Complexities
- Kernel Methods

Unsupervised Learning

- What is unsupervised learning
- Algorithms in unsupervised learning
- Steps in unsupervised learning

Dimensionality Reduction:

- Introduction to Dimensionality Reduction and its necessity
- Principal Component Analysis (PCA)
- Singular Value Decomposition (SVD)
- Kernel – PCA
- Linear Discriminate analysis
Feature extraction
- Advantages and Applications of Dimensionality Reduction

Clustering

- Introduction to Clustering
- Real Life applications of Clustering
- Distance Measurement methods
- Hierarchical Clustering
- K-Means Clustering and skew Plot
- Assignment

Text Mining

- Introduction to Text Mining
- Applications
- Structured and unstructured data
- Extracting and unstructured text from
files and websites
- Data cleaning and reshaping
- Terminologies in Text Mining
- Text Clustering and Categorization
- Word Cloud
- N-gram charts
- Sentiment Analysis
- Twitter Analytics
- Natural Language Processing
- Assignment

Forecasting

- Introduction to forecasting
- Applications
- Data Manipulation and cleaning
- Time Series
- Time Series Forecasting
- Components of timeseries – Trend,
- Seasonality, Randomness
- Trend Analysis
- Forecasting Methods
- Smoothing Methods
- Modeling Random Components
- Modeling or stationary time series
- ETS Model
- Auto Regressive Model
- Moving Average Model
- ARIMA Model
- Anomaly Detection
- Transformations
- Growth Curve
- ARCH & GARCH models

Association Rules

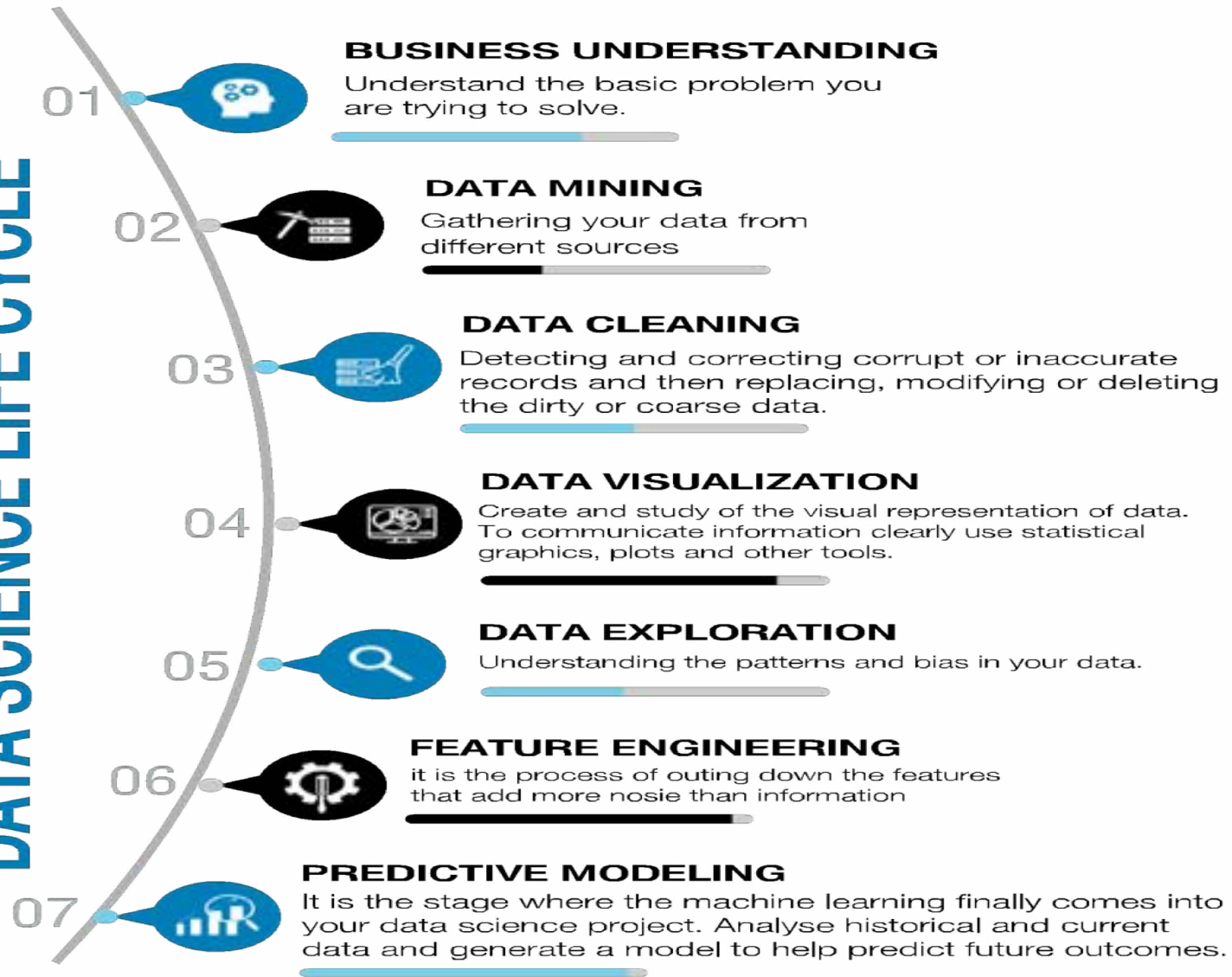
- Introduction
- Importance of Association Rules
- Metrics of rules – lift Support,
- Confidence , Conviction
- Apriority model
- Market Basket Analysis
- Algorithm Implementation and tuning
- Applications
- Assignment

Deep Learning

Introduction to Natural works

- Introduction to NN
- Basic understanding of ANN
- Basic understanding of CNN
- Basic understanding of RNN
- Basic understanding of Back propagation
- Basic understanding of Feed Forward

DATA SCIENCE LIFE CYCLE



mcodeLabs

**MicroCodeLabs #401, Level5, Plot No:190/7/B/3, Lakshmi Sai Damam,
Patrika Nagar, Hyderabad, Telangana 500081- +919848063198**

www.mcodelabs.com | holla@mcodelabs.com

THANK YOU

