

Full Stack Data Science Masters

Topic Name : DATA SCIENCE

Sub-topic Name : FULL STACK DATA SCIENCE

Course link : <https://ineuron.ai/course/Full-Stack-Data-Science-Masters>

Course Description :-

This program teaches students how to extract insights from data using statistical and machine learning techniques, as well as data visualization and data operational skills. Students learn to work with popular data analysis tools such as Python, SQL, and machine learning frameworks, and work on hands-on projects to apply their knowledge. Overall, the course provides students with the skills to make informed decisions based on data, relevant to a wide range of industries. You will learn all the stack required to work in data science, including machine learning operations and cloud infrastructure, as well as real-time industry projects.

Course Features :-

- => Full Stack Data Science Masters Certification
- => Job Guarantee Program
- => Self-Paced Learning
- => 150+ hours content recorded by Industry Veterans
- => 20+ hands-on industry real-time projects
- => 2 year Dashboard access
- => Doubt clearing live classes
- => Doubt clearing through mail and support team
- => Assignment in all the modules
- => Quiz in all modules
- => End-to-End Projects
- => Resume Building
- => Career Guidance
- => Interview Preparation
- => Regular Assessment
- => Job Fair & Internal Hiring
- => Mock Interview Anytime
- => Internship Portal Access
- => NeuroLabs Access

What you will learn :-

- => Python
- => Flask
- => Numpy
- => Pandas
- => Visualization
- => Databases
- => EDA
- => Linear Algebra
- => Statistics
- => Machine Learning
- => Deep learning
- => Computer vision
- => Natural language processing

Requirements :-

- => System with minimum i3 processor or better
- => At least 4 GB of RAM
- => Working internet connection
- => Dedication to learn

Instructors :-

=> krish naik :

~ Having 10+ years of experience in Data Science and Analytics with product architecture design and delivery. Worked in various product and service based Company. Having an experience of 5+ years in educating people and helping them to make a career transition.

=> Sudhanshu Kumar :

~ Having 8+ years of experience in Big data, Data Science and Analytics with product architecture design and delivery. Worked in various product and service based Company. Having an experience of 5+ years in educating people and helping them to make a career transition.

Curriculum details :-

=> Week 0 Course Introduction :

- ~ Welcome to the Course
- ~ Platform Overview

=> Week 1 Python Basic Building :

- ~ Python Keywords and identifiers
- ~ Comments, indentation and statements
- ~ Variables and data types in Python
- ~ Standard Input and Output
- ~ Operators
- ~ Control flow: if else elif
- ~ Control flow: while loop
- ~ Control flow: for loop
- ~ Control flow: break and continue

=> Week 2 Python Data Structures :

- ~ Strings
- ~ Lists, Lists comprehension
- ~ Tuples
- ~ Sets
- ~ Dictionary, Dictionary Comprehension

=> Week 3 Python Functions :

- ~ Python Built-in Functions.
- ~ Python User-defined Functions.
- ~ Python Recursion Functions.
- ~ Python Lambda Functions.

=> Week 4 Python Exception Handling, Logging And Debugging :

- ~ Exception Handling Using Try Catch Block
- ~ Custom Exception Handling
- ~ Logging With Python
- ~ Debugging With Python

=> Week 5 Python OOPS :

- ~ Python Objects And Classes
- ~ Python Constructors
- ~ Python Inheritance
- ~ Abstraction In Python
- ~ Polymorphism in Python
- ~ Encapsulation in Python

=> Week 6 Flask :

- ~ Flask Fundamentals
- ~ Building Rest API's

=> Week 7 Python Project With Deployment :

- ~ End To End Review Scraper Project With Deployment In Cloud
- ~ Weather App- Build A Web app that displays current weather conditions for a specific location using OpenWeatherMap API
- ~ Image web scraper- Build A Image Web Scraper which extracts images of Google

=> Milestone 1 :

- ~ Milestone 1 Test

=> Week 8 Python For Data Science- Numpy :

- ~ Numpy Basics to Advance
- ~ Key Operations using Numpy

=> Week 9 Python For Data Science- Pandas :

- ~ Pandas Basic To Advance- Dataframe And Series
- ~ Key Operations on DataFrames

=> Week 10 Python For Visualization :

- ~ Getting Started with Matplotlib
- ~ Getting Started with Seaborn

=> Milestone 2 :

- ~ Milestone 2 Test

=> Week 11 SQL-Basic to Intermediate :

- ~ Working with MySQL Using NeuroLabs
- ~ USE, DESCRIBE, SHOW TABLES
- ~ SELECT
- ~ INSERT
- ~ UPDATE & DELETE
- ~ CREATE TABLE
- ~ ALTER: ADD, MODIFY, DROP
- ~ DROP TABLE, TRUNCATE, DELETE
- ~ LIMIT, OFFSET
- ~ ORDER BY
- ~ DISTINCT

- ~ WHERE, Comparison operators, NULL
- ~ Logical Operators
- ~ Aggregate Functions: COUNT, MIN, MAX, AVG, SUM
- ~ GROUP BY
- ~ HAVING

=> Week 12 SQL- Intermediate To Advance :

- ~ Join and Natural Join
- ~ Inner, Left, Right and Outer joins
- ~ Sub Queries/Nested Queries/Inner Queries
- ~ SQL Primary And Foreign Key
- ~ SQL Function And Stored Procedures
- ~ SQL Window Function
- ~ CTE In SQL
- ~ Normalization In SQL

=> Week 13 SQL Interview Questions :

- ~ Discussing FAANG SQL Interview Questions
- ~ Discussing Other Top Product And Service Based Companies SQL Interview Questions

=> Week 14 Python With MongoDB :

- ~ MongoDB Tutorials With Various Operations- We will see how we can perform various database operations using MongoDB(No SQL)

=> Milestone 3 :

- ~ Milestone 3 Test

=> Week 15 Exploratory Data Analysis - 1 :

- ~ Analyzing Bike Sharing Trends.
- ~ Analyzing Movie Reviews Sentiment.
- ~ Customer Segmentation And Effective Cross Selling.

=> Week 16 Exploratory Data Analysis - 2 :

- ~ Analyzing Wine Types And Quality.
- ~ Analyzing Music Trends And Recommendations.
- ~ Forecasting Stock And Commodity Prices

=> Milestone 4 :

- ~ Milestone 4 Test

=> Week 17 Maths For Data Science(Linear Algebra 1) :

- ~ Linear Systems and Gaussian Elimination

In this module we will learn what a matrix is and what it represents. We will explore how a system of linear equations can be expressed via matrices.

- ~ Matrix- In this module, we will learn how to solve a linear system of equations with matrix algebra.

=> Week 18 Maths For Data Science(Linear Algebra 2) :

- ~ Projection And Least Square-In this module we will discuss projections and how they work. We will build on a foundation using 1D 2D projections and explore the concept in higher dimensions over time.

~ Determinant and Eigens-In this module we will learn how to compute the determinant of a matrix. Afterwards, Eigenvalues and Eigenvectors will be covered.

=> Week 19 Maths For Data Science(Probability) :

- ~ Important concepts in probability theory including random variables and independence

=> Week 20 Maths For Data Science(Calculus) :

- ~ Definition of a Derivative- What is a derivative? Calculate simple derivatives from the definition of a derivative.
- ~ Product and Chain Rule-Use the product and chain rules to calculate the derivatives of more complicated functions.
- ~ Using Derivatives to Graph Functions-Use where derivatives are positive and negative to help graph a function.
- ~ Finding Maximums and Minimums-Use derivatives to find the maximum and minimum values of functions.

=> Week 21 Statistics 1 :

~ Introduction & Descriptive Statistics- In this module, you will learn about the fundamentals of descriptive statistics, which include mean, median, mode, variance, and standard deviation. The module aims to demonstrate the importance of measures of central tendency and dispersion for various levels of measurement. You will gain an understanding of how these statistical tools are used to analyze and interpret data accurately. The module will cover the basics of mean, median, mode, variance, and standard deviation and provide examples of their practical applications. By the end of the module, you will be equipped with the knowledge to use these measures for data analysis effectively.

=> Week 22 Statistics 2 :

- ~ Introduction to Probability Distributions- In this module, we will cover various distributions and understand pdf, pmf and cdf

=> Week 23 Statistics 3 :

~ Hypothesis Testing-This module aims to equip you with the necessary knowledge to choose the appropriate test when analyzing data and determining their relationships. It will provide a detailed explanation of the assumptions underlying each test and teach you how to interpret the results of a hypothesis test accurately.

=> Milestone 5 :

- ~ Milestone 5 Test

=> Week 24 Feature Engineering :

- ~ Feature Selection
- ~ Handling missing values
- ~ Handling imbalanced data
- ~ Handling outliers
- ~ Encoding
- ~ Feature Scaling

=> Week 25 Machine Learning (Supervised - 1) :

- ~ AI Vs ML Vs DL Vs DS
- ~ Types Of ML Techniques
- ~ Supervised vs unsupervised and semi-supervised and reinforcement learning
- ~ Linear Regression
- ~ End To End Project With Deployment

=> Week 26 Machine Learning (Supervised - 2) :

- ~ Logistic Regression

- ~ Task- End To End Project With Deployment
- ~ Support Vector Machines
- ~ Naive Bayes
- ~ Task- End To End Project With Deployment

=> Week 27 Machine Learning (Supervised - 3) :

- ~ Decision Tree
- ~ Gradient Boosting
- ~ Xgboost
- ~ Task- End To End Project With Deployment

=> Week 28 Machine Learning (Unsupervised) :

- ~ PCA
- ~ Kmeans Clustering
- ~ Hierarchical Clustering
- ~ DbSCAN Clustering
- ~ Performance Metrics In Clustering

=> Week 29 Machine Learning (Time Series) :

- ~ Time Series Using fbprophet
- ~ Time Series Using AutoTs
- ~ Time Series Using Darts

=> Week 30 End To End ML Projects With Deployment :

- ~ Developing a Comprehensive Image Scraper with Python
- ~ Machine Learning-Based Fault Prediction for Industrial Sensors End To End Project
- ~ Developing an Advanced Review Scraper with Python and Data Visualization

=> Week 31 End To End ML Projects With Deployment :

- ~ ShipSage: Machine Learning for Smart Shipment Price Prediction
- ~ GreenVision: AI-driven Forest Cover Type Classification System
- ~ Customer Categorizer: Leveraging Machine Learning to Uncover Hidden Market Segments
- ~ PhishFinder: Machine Learning-Based Phishing Detection and Classification With Bento ML and MLFOW

=> Milestone 6 :

- ~ Milestone 6 Test

=> Week 32 Interview Preparation :

- ~ Resume Discussion And Resume Preparation
- ~ Python Interview Questions Discussion
- ~ Stats Interview Questions Discussion
- ~ Machine Learning Interview Questions Discussion
- ~ How To Explain End to Projects To Interviewer

=> Week 33 Deep Learning ANN :

- ~ Artificial Neural Network Working
- ~ Back Propagation In ANN
- ~ Chain Rule Of Derivatives
- ~ Vanishing Gradient Problem
- ~ Exploding Gradient Problem

=> Week 34 Deep Learning Fundamentals :

- ~ Different Activation functions
- ~ Different types of Loss Function
- ~ Different types Of Optimizers
- ~ Weight Initialization Techniques
- ~ Drop Out Layer
- ~ Batch Normalization

=> Week 35 Deep Learning Frameworks :

- ~ Working With Tensorflow Keras
- ~ Working With Pytorch

=> Week 36 Deep Learning (Computer Vision Fundamentals) :

- ~ CNN Fundamentals
- ~ Lenet-5 Variants With Research Paper And Practical
- ~ Alexnet Variants With Research Paper And Practical

=> Week 37 Deep Learning (Image Classification & Transfer Learning) :

- ~ GoogLeNet Variants With Research Paper And Practical
- ~ VggNet Variants With Research Paper And Practical
- ~ ResNet Variants With Research Paper And Practical

=> Week 38 Deep Learning (Computer Vision - Object Detection) :

- ~ Object Detection(In this module we will discuss various advanced algorithms which will help us perform object detection)

=> Week 39 Deep Learning (Computer Vision - Segmentation Tracking) :

- ~ Image Segmentation(In this module we will discuss various advanced algorithms which will help us perform image segmentation)
- ~ Object Tracking (In this module we will discuss various advanced algorithms which will help us perform object tracking)

=> Week 40 Deep Learning (NLP - 1) :

- ~ NLP With Machine Learning- In this module, we will discuss how we can apply different NLP techniques in text and work with ML algorithms
- ~ NLP With Recurrent Neural Network and Its variants

=> Week 41 Deep Learning (NLP - 2) :

- ~ NLP with Sequence Models- In this module, we will discuss about various Sequence Models in Deep Learning
- ~ NLP With Attention Models- In this module, we will discuss Transformers,BERT, and GPT models

=> Week 42 End To End Deep Learning Projects With Deployment :

- ~ Developing an Audio Classification System for Accurate Speech Recognition
- ~ Developing a Robust Helmet Detection System using Computer Vision

=> Week 43 End To End Deep Learning Projects With Deployment :

- ~ Developing an AI-Driven Text Summarization System with Deep Learning Techniques

~ *Developing an AI Model for Automated Lungs Disease Diagnosis Using Bento ML and MLFLOW*

=> Week 44 End To End Deep Learning Projects With Deployment :

~ *Developing a High-Quality Text-to-Speech System with Advanced NLP Techniques*

~ *AI-Enabled Object Detection for Improved Industrial Safety*

=> Milestone 7 :

~ *Milestone 7 Test*

=> Week 45 Big Data - Hadoop :

~ *Hadoop*

=> Week 46 Big Data - Spark :

~ *Spark*

=> Milestone 8 :

~ *Milestone 8 Test*

=> Week 47 Data Analytics - PowerBi :

~ *PowerBI*

=> Week 48 Data Analytics - Tableau :

~ *Tableau*

=> Milestone 9 :

~ *Milestone 9 Test*

=> Week 49 - 52 Interview Preparation :

~ *Resume Discussion And Resume Preparation*

~ *Computer Vision Interview Preparation*

~ *NLP Interview Preparation*

~ *Internship Tasks For Deep Learning*

~ *Mock Interview Sessions*

~ *Industry Expert Talks*

~ *How To Build Analytical Thinking*

~ *Discussing Different Project Architectures*

~ *Project Building End to END*

Tableau Foundation Course

Topic Name : DATA ANALYTICS

Sub-topic Name : TABLEAU

Course link : <https://ineuron.ai/course/Tableau-Foundation-Course>

Course Description :-

Tableau enables critical decision-makers to learn how to display data and uncover data patterns such as customer purchase behavior, sales trends, or production bottlenecks. This course will cover all of Tableau's capabilities that allow you to explore, experiment with, prepare, and present data fast and beautifully throughout an organisation, and we'll walk you through the entire process so you can make an impact and join the industry.

Course Features :-

- => Course Materials
- => Self Paced Learning
- => Lifetime Dashboard Access
- => Completion Certificate

What you will learn :-

- => Tableau desktop installation
- => Connecting Tableau with a variety of data sources, including excel and CSV files.
- => Creating interactive dashboard
- => Creating data stories
- => Generating business insights
- => Sorting, Filtering
- => Marks Card
- => Formatting in Tableau
- => Lines and Bands
- => Charts in Tableau

Requirements :-

- => System with minimum i3 processor or better
- => At least 4 GB of RAM
- => Working internet connection
- => Dedication to learn

Instructors :-

=> Dr Nishtha Jain :

~ I am a doctor by profession but a teacher by passion. I have been into the teaching profession for the last 3 years. I have been and am still a mentor for various courses which include technical as well as non-technical ones. These include MS-Excel, Tableau, Computer basics, Biology, English, etc. I love to learn, explore and share my knowledge to whatever extent possible. Being an ardent educator, I have always helped all my students and will continue to do the same.

Curriculum details :-

- => Introduction :
 - ~ Introduction - BI and Data Visualization
- => Tableau - Introduction and Architecture :
 - ~ Tableau suite and system requirements
 - ~ Tableau architecture and Why Tableau
 - ~ Tableau installation
- => Data in Tableau :
 - ~ Datatypes and Desktop UI
 - ~ Live vs Extract connection
 - ~ Dimensions, Measures, Continuous and Discrete
- => Sets in Tableau :
 - ~ Sets in Tableau
- => Sorting, Filtering :
 - ~ Sorting and Filtering
 - ~ Advanced filtering
- => Parameters :
 - ~ Parameters in Tableau
- => A few basics :

~ *Hide, Unhide, Rename, Copy, Split*

=> Groups, Folders and Hierarchies :

~ *Groups and Folders*
~ *Hierarchies*

=> Marks Card :

~ *Marks card, Part 1*
~ *Marks card, Part 2*

=> Views :

~ *Views in Tableau*

=> Highlighting :

~ *Highlighting in Tableau*

=> Formatting in Tableau :

~ *Formatting - Font*
~ *Formatting - Alignment, Shading*
~ *Formatting - Border, Lines, Fields, Title, Caption*

=> Lines and Bands :

~ *Reference lines, bands, distribution*
~ *Zero lines and Drop lines*

=> Tableau Worksheets :

~ *Working on worksheets*

=> Charts in Tableau - Part 1 :

~ *Charts' Introduction*
~ *Bar (Column) Charts*
~ *Pie Charts*
~ *Treemap*
~ *Packed bubbles*

=> Calculated fields :

~ *Calculated fields*

=> Charts in Tableau - Part 2 :

~ *Wordmaps or Wordclouds*
~ *Bins and Histogram*
~ *Line Charts*
~ *Scatter Plot*
~ *Text tables*
~ *Maps*
~ *Dual Axes charts, Part 1*
~ *Dual Axes charts, Part 2*

=> Aggregation and Granularity :

~ *Aggregation and Granularity*

=> Conditional formatting :

~ *Conditional formatting, Part 1*
~ *Conditional formatting, Part 2*

=> Charts in Tableau - Part 3 :

~ *Funnel chart and types*
~ *Gantt and Waterfall Charts*
~ *Donut and multiple Donut Charts*
~ *Calendar Chart*
~ *Dumbbell Chart*

=> Charts in Tableau Part - 4 :

~ *Animation charts*
~ *Heatmaps*
~ *Bullet graphs*
~ *Bump Chart*

=> Database Functions in Tableau :

~ *Database Functions in Tableau*

=> Box and Whisker Plot :

~ *Box and Whisker, Part 1*
~ *Box and Whisker, Part 2*

=> Table Calculations and Pareto :

~ *Table calculations*
~ *Running total and Pareto Chart*

=> Analytics Pane :

~ *Analytics pane 1*
~ *Analytics pane 2*
~ *Analytics pane 3*

=> Time Series and Forecasting :

~ *Time series analysis and Forecasting*

Complete DSA in Python

Topic Name : DATA STRUCTURE

Sub-topic Name : DSA WITH PYTHON

Course link : <https://ineuron.ai/course/Complete-DSA-in-Python>

Course Description :-

A comprehensive chase to excel any interview for the Data Structures and Algorithms. This course has been specifically designed to provide resources that would assist you in cracking problem-solving interviews. The presented problems in the course would suffice to look on to positive outcomes in the interviews.

Course Features :-

- => Course Materials
- => Self Paced Learning
- => Lifetime Dashboard Access
- => Completion Certificate

What you will learn :-

- => Introduction to Algorithms
- => Analysis in Algorithms
- => Array Data Structure
- => Heap Data Structure
- => Recursion
- => Divide and Conquer
- => Linked List Data Structure
- => Stack and Queue
- => Hashing Data Structure
- => Tree Data Structure
- => Binary Search Tree
- => Graph Traversal Algorithms
- => Application of greedy algorithm
- => Dynamic Programming
- => Research Area- P, NP, NP-Hard and NP-Complete Problems

Requirements :-

- => System with minimum i3 processor or better
- => At least 4 GB of RAM
- => Working internet connection
- => Dedication to learn

Instructors :-

=> Priya Bhatia :

~ Expertise in data structure competitive programming and solving analytical problems and implementing data structure algorithm in multiple programming language. I have done my M.Tech in Artificial Intelligence at IIT Hyderabad and have an experience of implementation in multiple projects.

Curriculum details :-

- => Introduction to Algorithms :
 - ~ Complete DSA Roadmap
 - ~ Why DSA required
 - ~ Algorithms Introduction
 - ~ Steps to construct an algo
- => Analysis in Algorithms :
 - ~ Types of Analysis
 - ~ Asymptotic Notation - Big O Time Complexity
 - ~ Asymptotic Notation - Omega Time Complexity
 - ~ Asymptotic Notation - Theta Time Complexity
 - ~ Apriori Analysis - Time Complexity Analysis Part1
 - ~ Apriori Analysis - Time Complexity Analysis Part2
 - ~ Apriori Analysis - Time Complexity Analysis Part3
 - ~ Practice Set - Asymptotic Notations
 - ~ Complexity Classes
 - ~ Recurrence Relation Introduction
 - ~ Substitution Method - Problem 1

- ~ Substitution Method - Problem 2
- ~ Substitution Method - Problem 3
- ~ Recursive Tree Approach - Problem 1
- ~ Recursive Tree Approach - Problem 2
- ~ Recursive Tree Approach - Problem 3
- ~ Practice Set - Substitution and Recursive Tree Approach
- ~ Masters Theorem Case 1
- ~ Masters Theorem Case 2
- ~ Masters Theorem Case 3
- ~ Practice Set - Masters Theorem

=> Array Data Structure :

- ~ Introduction to Array Data Structure
- ~ Array Data Structure Implementation
- ~ Address of an element in 1D array
- ~ Address of an element in 2D array
- ~ Searching of an element - Linear Search
- ~ Searching of an element - Binary Search
- ~ Recurrence Relation of Binary Search
- ~ Implementation of Binary Search
- ~ Binary Search Interview Problem
- ~ Search a 2D Matrix
- ~ Searching of an element - Ternary Search
- ~ Recurrence Relation of Ternary Search
- ~ Implementation of Ternary Search
- ~ Sorting in an array - Comparison and Non-Comparison
- ~ Stable and Unstable sorting algorithms
- ~ Inplace and Outplace Sorting algorithms
- ~ Comparison Sort - Bubble Sort
- ~ Comparison Sort - Bubble Sort Implementation
- ~ Comparison Sort - Selection Sort
- ~ Comparison Sort - Selection Sort Implementation
- ~ Comparison Sort - Insertion Sort
- ~ Comparison Sort - Insertion Sort Implementation
- ~ FAANG Interview Question on Arrays - Best Time to Buy and Sell Stock
- ~ FAANG Interview Question on Arrays - Collinear Points
- ~ FAANG Interview Question on Arrays - Majority Element
- ~ FAANG Interview Question on Arrays - Sort Colors

=> Heap Data Structure :

- ~ Basics of Heap Sort - Full Binary Tree vs Complete Binary Tree vs Almost Complete Binary Tree
- ~ Concept of Minheap and Maxheap Tree
- ~ Insertion in Minheap or Maxheap Tree
- ~ Deletion in Minheap or Maxheap Tree
- ~ Creation of Minheap or Maxheap Tree
- ~ Time Complexity Derivation to build minheap or maxheap
- ~ Comparison Sort - Heap Sort
- ~ FAANG Interview Question on Heap - Top K frequent elements
- ~ FAANG Interview Question on Heap - K Closest Points to Origin

=> Recursion :

- ~ Introduction to Recursion
- ~ Factorial Finding using Recursion with its Implementation
- ~ Fibonacci Series using Recursion with its Implementation
- ~ Count Of number of ways to reach upstairs

=> Divide and Conquer :

- ~ Introduction to Divide and Conquer
- ~ Applications of Divide and Conquer - Finding of maxima and minima
- ~ Applications of Divide and Conquer - Implementation of finding of maxima and minima
- ~ Applications of Divide and Conquer - Finding of power of an element with its Implementation
- ~ Applications of Divide and Conquer - Binary Search
- ~ Applications of Divide and Conquer - Recurrence relation of Binary Search
- ~ Applications of Divide and Conquer - Implementation of Binary Search
- ~ FAANG Interview Question- Two Pointers Problem
- ~ Applications of Divide and Conquer - Merge Sort
- ~ Applications of Divide and Conquer - Implementation of Merge Sort
- ~ FAANG Interview Question on MergeSort - Finding of single sorted array complexity
- ~ Applications of Divide and Conquer - Quick Sort
- ~ Applications of Divide and Conquer - Implementation of Quick Sort
- ~ FAANG Interview Scenario Based Question on QuickSort complexity
- ~ Applications of Divide and Conquer - Randomized QuickSort
- ~ Applications of Divide and Conquer - Selection Procedure
- ~ Applications of Divide and Conquer - Implementation of Selection Procedure
- ~ Applications of Divide and Conquer - Count Of number of an inversions
- ~ Applications of Divide and Conquer - Strassen's Matrix Multiplication

=> Linked List Data Structure :

- ~ Introduction to Linked List
- ~ Insertion of a node in Linked List - Front
- ~ Insertion of a node in Linked List - After a given node
- ~ Insertion of a node in Linked List - End
- ~ Deletion of a node in Linked List
- ~ Searching of a node in Linked List
- ~ FAANG Interview Question - Reversal of a node in Linked List
- ~ FAANG Interview Question - Count of all nodes in Linked List
- ~ FAANG Interview Question - Floyd's Cycle Detection Algorithm
- ~ FAANG Interview Question - Merge Of two Sorted Linked List

=> Skip List Data Structure :

~ Skip List- Motivation, Build-in, Search, Insertion and Deletion skip list

=> Stack and Queue :

~ Introduction to Stack Data Structure and Push Operation in depth
~ Stack- Pop operation
~ Implementation of Stack using array and linked list
~ Queue- Insertion and Deletion operation
~ Implementation of Queue using array and linked list
~ FAANG Interview Question - Valid Parenthesis

=> Hashing Data Structure :

~ Introduction to Hashing Data Structure
~ Hash Function and its types
~ Implementation of Hash Functions
~ Open addressing - Linear Probing and Primary Clustering
~ Open addressing - Quadratic Probing and Secondary Clustering
~ Open addressing - Double Hashing
~ Chaining
~ Load Factor and Rehashing

=> Tree Data Structure :

~ Basics of Tree - Full Binary Tree vs Complete Binary Tree vs Almost Complete Binary Tree

=> Tree Traversal Algorithms :

~ Tree Traversal Algorithms- Inorder, Preorder and PostOrder
~ FAANG Interview Questions on Tree Traversal Algorithm

=> Binary Search Tree :

~ Introduction to Binary Search Tree
~ Insertion and Inorder Traversal in BST
~ FAANG Interview Question- Minimum value in BST
~ FAANG Interview Question- Find unique possible BST's
~ Searching in Binary Search Tree
~ Deletion in Binary Search Tree

=> Graph Traversal Algorithms :

~ Basics Of Graph- Simple vs Multigraph, Null vs Complete Graph, Relationship between edges and vertices in Simple Graph
~ Introduction to Graph Traversal Algorithms
~ Introduction to Depth First Search
~ DFS Psuedocode and illustration using an example
~ DFS Coding Implementation
~ BFS Intro, Psuedocode and illustration using an example
~ BFS Coding Implementation

=> Greedy Algorithm :

~ Introduction to greedy algorithm

=> Application of greedy algorithm :

~ Fractional Knapsack Problem
~ Implementation of Fractional Knapsack Problem
~ Basics Of Graph- Simple vs Multigraph, Null vs Complete Graph, Relationship between edges and vertices in Simple Graph
~ Introduction to Spanning Tree and Minimum Spanning Tree
~ Minimum Spanning Tree- Kruskal 's Algorithm
~ Minimum Spanning Tree- Prim's Algorithm
~ Single Source Shortest Path- Dijkstra's algorithm
~ Single Source Shortest Path- Dijkstra's algorithm Implementation
~ Huffman Coding
~ Optimal Merge Pattern
~ Job Sequencing with Deadline

=> Dynamic Programming :

~ Introduction to Dynamic Programming

=> Application of Dynamic Programming :

~ Fibonacci Series using Dynamic Programming
~ 0-1 Knapsack Problem

=> Research Area- P, NP, NP-Hard and NP-Complete Problems :

~ Research Area- P, NP, NP-Hard and NP-Complete Problems

=> Some ending tips for all students :

~ Some ending tips for all students

=> Detailed Interview Process to crack FAANG Companies(SDE Roles) :

~ Detailed Interview Process to crack FAANG Companies