



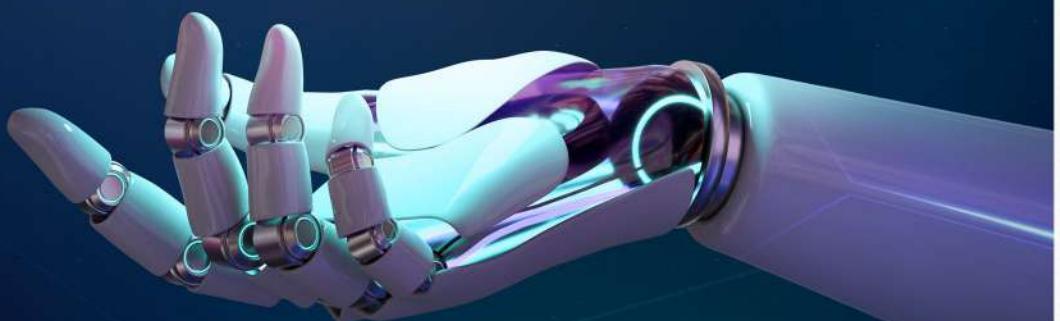
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RESEARCH LABS

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100%

JOB GUARANTEED

DATA SCIENCE PROGRAM



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INDEX

- INSIGHTS
- INNOMATICS HIGHLIGHTS
- PROGRAM HIGHLIGHTS
- PROGRAM OVERVIEW - ROADMAP
- CURRICULUM
- CAREER SUPPORT & ALUMNI NETWORK
- ALUMNI REVIEWS
- FEE STRUCTURE
- CONTACT INFORMATION



INSIGHTS

MARKET NEED

According to a recent Dice report, the demand for Business Analysts and Data Scientists in 2020 has increased by an average of 51% across Health care, Telecommunications, Media/Entertainment, Banking, Financial Services and Insurance Sectors etc.

An estimation of 2.7 Million job opportunities in Data Science and Analytics are globally declared.

India is the second-highest country next to the US to have generated the demand to recruit about 75,000 Data Scientists for 2020 and 2021.

INDUSTRY DEMAND

According to a report, in 2020, the job requirements for data analysts and business analysts is projected to boom to by 364,000 openings to 2,720,000. And according to the U.S. Bureau of Labor Statistics, 11.5 million new jobs will be created by the year 2026. and business analysts is projected to boom to by 364,000 openings to 2,720,000. And according to the U.S. Bureau of Labor Statistics, 11.5 million new jobs will be created by the year 2026.





ADVANTAGE OF BEING INNOMINION

We have trained and placed,

5000+ students | **130+** batches | **150+** Hackathons

50+ Industry Experts | **50+** meetups

500+ Industry connections.

Innomatics Research Labs is India's leading professional learning Edu-tech Company. By joining us you will be able to receive access to the extensive pool of Industry experts and dedicated career assistance.

- Lifetime LMS access with all the recorded sessions
- Learn from the top faculty with live and interactive online sessions
- Gain practical and professional skills through project based learning
- Become industry ready with exceptional mentoring sessions
- Interaction with diverse batch of peers for a rich exposure with Discord
- Build your skills with a outcome based curriculum designed by leading industry experts
- 100% Placement Guarantee with all the professional etiquettes training

PROGRAM HIGHLIGHTS



100% Placement Guarantee



450+ Hours Live & Interactive Training



50+ Hours Of Aptitude & Communication Skill Development



Free Access To 16,000+ LinkedIn Learning Courses



AMCAT & E-Litmus Exam Vouchers



One-To-One Mentoring Sessions



IBM Certification



JAINx Certificate



PROGRAM OVERVIEW (ROAD MAP)

PYTHON PROGRAMMING
WITH PROBLEM SOLVING

1

2

STATISTICS AND
DATA ANALYSIS

MACHINE LEARNING

3

ML-OPS AND
DATA ENGINEERING

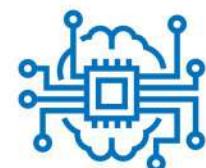
4

DEEP LEARNING

5

```
selection at the end -add  
_ob.select= 1  
ler._ob.select=1  
ntext.scene.objects.active  
("Selected" + str(modifier))  
rror._ob.select = 0  
bpy.context.selected_obi  
data.objects[one.name].sel  
int("please select exact  
- OPERATOR CLASSES -
```

TECHNOLOGIES OFFERED



1. Python
2. Numpy
3. Pandas
4. Matplotlib
5. Seaborn
6. Scikit Learn
7. Machine Learning
8. Docker
9. Kubernetes
10. Hadoop
11. Spark
12. Tensorflow
13. Keras
14. NLP
15. AWS



IBM DATA SCIENCE CURRICULUM

Introduction

- Introduction to Data Science
- Life Cycle of Data Science
- Skills required for Data Science
- Applications of Data Science in different industries

click <https://>
* `epackage_s`
* `function_exists('incode_starter_setup')`
 faults and registers support for various
 hooks into the after_setup_the
 it hook is too late for some
 things.

MODULE - 1: PYTHON PROGRAMMING WITH PROBLEM SOLVING

Basics and Data Structures

- Basic commands in Jupyter Notebook
- Understanding Python Syntax
- Variables and Strings
- Lists, Sets, Tuples and Dictionaries

Conditional Statements & Decision Control Statements

- Conditional Operators, Arithmetic Operators and Logical Operators
- If, Elif and Else Statements
- For, While and Nested Loops

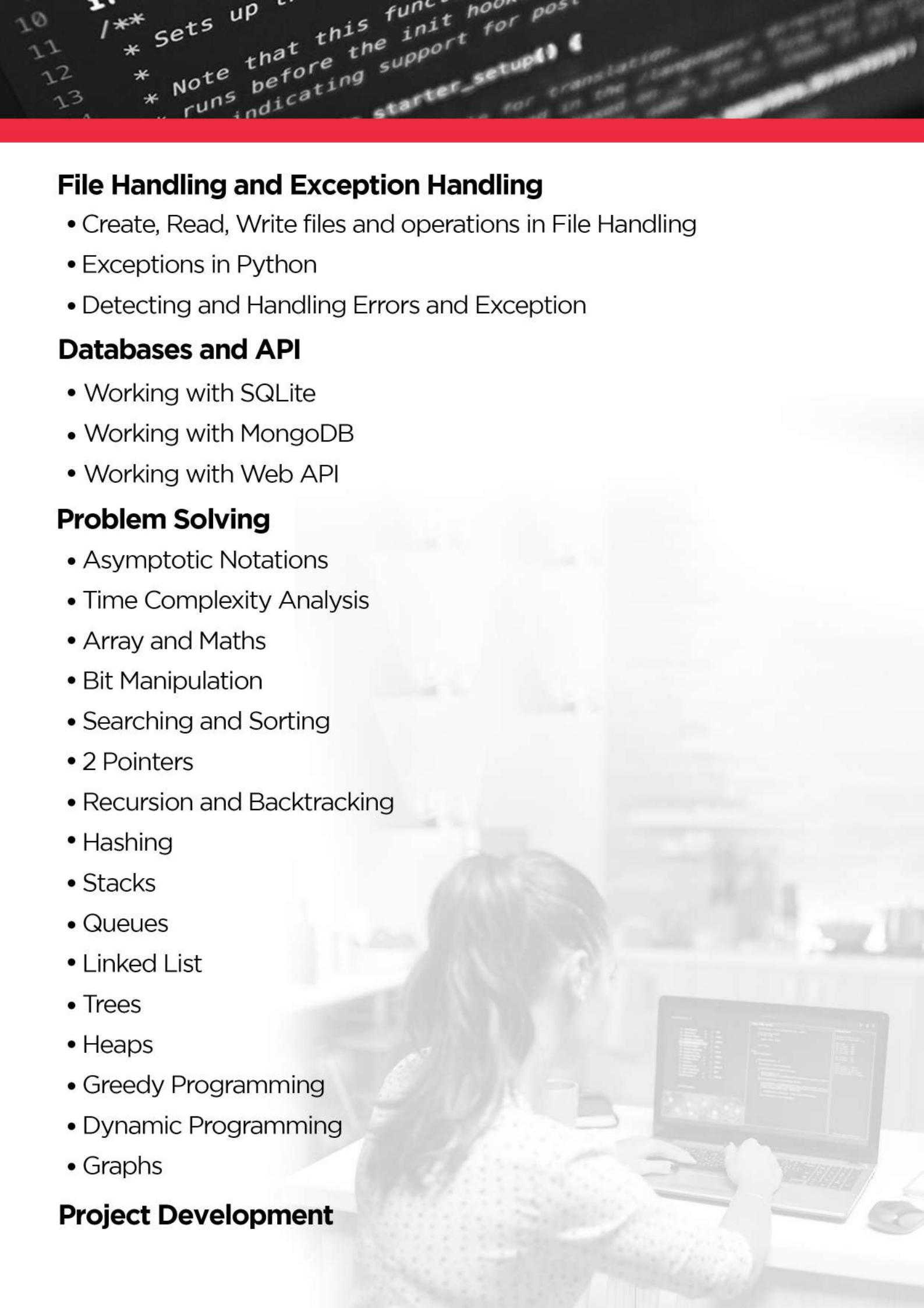
Functions and Modules

- Types of functions
- Code optimization, Argument functions and Scope
- Lambda Functions
- Map, Filter and Reduce

Object Oriented Programming

- Class Object attributes and Methods
- Overloading and OverRiding
- Inheritance, Abstraction
- Method Overloading and Method Overriding
- Operator Overloading
- Super Keyword





File Handling and Exception Handling

- Create, Read, Write files and operations in File Handling
- Exceptions in Python
- Detecting and Handling Errors and Exception

Databases and API

- Working with SQLite
- Working with MongoDB
- Working with Web API

Problem Solving

- Asymptotic Notations
- Time Complexity Analysis
- Array and Maths
- Bit Manipulation
- Searching and Sorting
- 2 Pointers
- Recursion and Backtracking
- Hashing
- Stacks
- Queues
- Linked List
- Trees
- Heaps
- Greedy Programming
- Dynamic Programming
- Graphs

Project Development



MODULE - 2 : STATISTICS AND DATA ANALYSIS

Statistics and Probability

- What is Univariate and Bi Variate Analysis?
- Measures of Central Tendencies and Dispersion
- Covariance and Correlation
- Probability - Axioms, Conditional Probability and Bayes Theorem
- Random Variables and Probability Distributions
- Discrete and Continuous Probability Distributions
- Binomial Distribution and Poisson Distribution
- Uniform and Normal Distribution
- Sampling variability and Central Limit Theorem
- Confidence Intervals
- Hypothesis Testing, Z -test, t-test and Chi - Square Test
- F -Test and ANOVA

Numpy and Data Manipulation with Pandas

- Introduction to Arrays and Basic Operations in Numpy
- Indexing and Slicing
- Mathematical Functions of Numpy and Broadcasting
- Pandas - Series and Data Frames

- Importing CSV and Excel Files
- Indexing, Slicing and filtering with Conditional Slicing
- Merging, Groupby, Pivot table and Cross tab
- String and Date Manipulations
- Missing Values and Outlier Detection

Matplotlib and Seaborn

- Introduction to Matplotlib
- Properties of plotting
- Subplots, Line Plots and Histograms
- Pie chart and Box Graphs
- Box and Violin Plots
- Scatterplot and Heatmaps

Regex and Web Scraping

- Structure and Unstructured Data
- Literals and Meta Characters
- Regular Expressions using Pandas
- Inbuilt Methods and Pattern Matching
- Data Collection or Mining
- Data Preprocessing
- Data exporting(csv,txt,excel,tsv)
- Data Analysis using visualization techniques





SQL and Tableau

- Introduction to Databases
- SQL Joins
- Filtering, Sorting and SQL Aggregations
- Subqueries and Temp Tables
- SQL Data Cleaning and Data Analysis
- Tableau Introduction
- Connect Tableau to a variety of dataset
- Analyze, Blend, Join and Calculate Data
- Visualize Data In the form of various charts, plots and maps
- Work with Data Blending in Tableau
- Adding Filters and Quick Filters
- Create Interactive Dashboards and adding actions to Dashboards

Project Development

MODULE - 3: MACHINE LEARNING

Introduction and Linear Algebra

- Supervised Versus Unsupervised Learning
- Introduction to Matrices
- Vector spaces, including dimensions, Euclidean spaces, closure properties and axioms
- Eigenvalues and Eigenvectors, including how to find Eigenvalues and the corresponding Eigenvectors

Linear Regression

- Simple Linear Regression
- Multiple Linear Regression
- Evaluating the metrics of Regression Techniques
- Polynomial Regression
- Regularization Techniques
- How gradient descent works
- Learning rate
- Types of gradient descent: batch, stochastic, mini-batch

Logistic Regression

- The Logistic Model
- Estimating the Regression Coefficients and Making Predictions
- Logit and Sigmoid functions
- Setting the threshold and understanding decision boundary
- Logistic Regression for >2 Response Classes
- Confusion Matrix, Accuracy and Error rate
- Precision and Recall, F1 Score and AUC - ROC



K-Nearest Neighbours

- K-Nearest Neighbor Algorithm and working
- Finding K - Value and Curse of Dimensionality
- Pros and Cons of KNN

Support Vector Machines

- The Maximal Margin Classifier
- Hyperplane
- Support Vector Classifiers, Hard and Soft Margin Classification
- Polynomial and Radial
- Tuning Hyper parameters for SVM

Naive Bayes

- Bayes Theorem
- Posterior probability
- Prior probability of class
- Types of Naive Bayes Classifier
- Multinomial Naive Bayes
- Bernoulli Naive Bayes and Gaussian Naive Bayes

Decision Tree

- Root Node and Terminal Node
- Advantages and Disadvantages of Trees
- Gini Index, Overfitting and Pruning
- Accuracy Estimation using Decision Trees





Ensemble Techniques

- What is Ensemble Learning?
- What is Bootstrap Aggregation Classifiers and how does it work?
- What is it and how does it work?
- Variable selection using Random Forest
- What is it and how does it work?
- Hyper parameter and Pro's and Con's

Cross Validation, Model Selection and Feature Engineering

- Cross-Validation and Types
- Bias-Variance Trade-Of or k-Fold Cross-Validation
- Model Selection Techniques
- Resampling Methods and Imputation
- Log Transformation, One-Hot Encoding.
- Scaling and Extracting Data

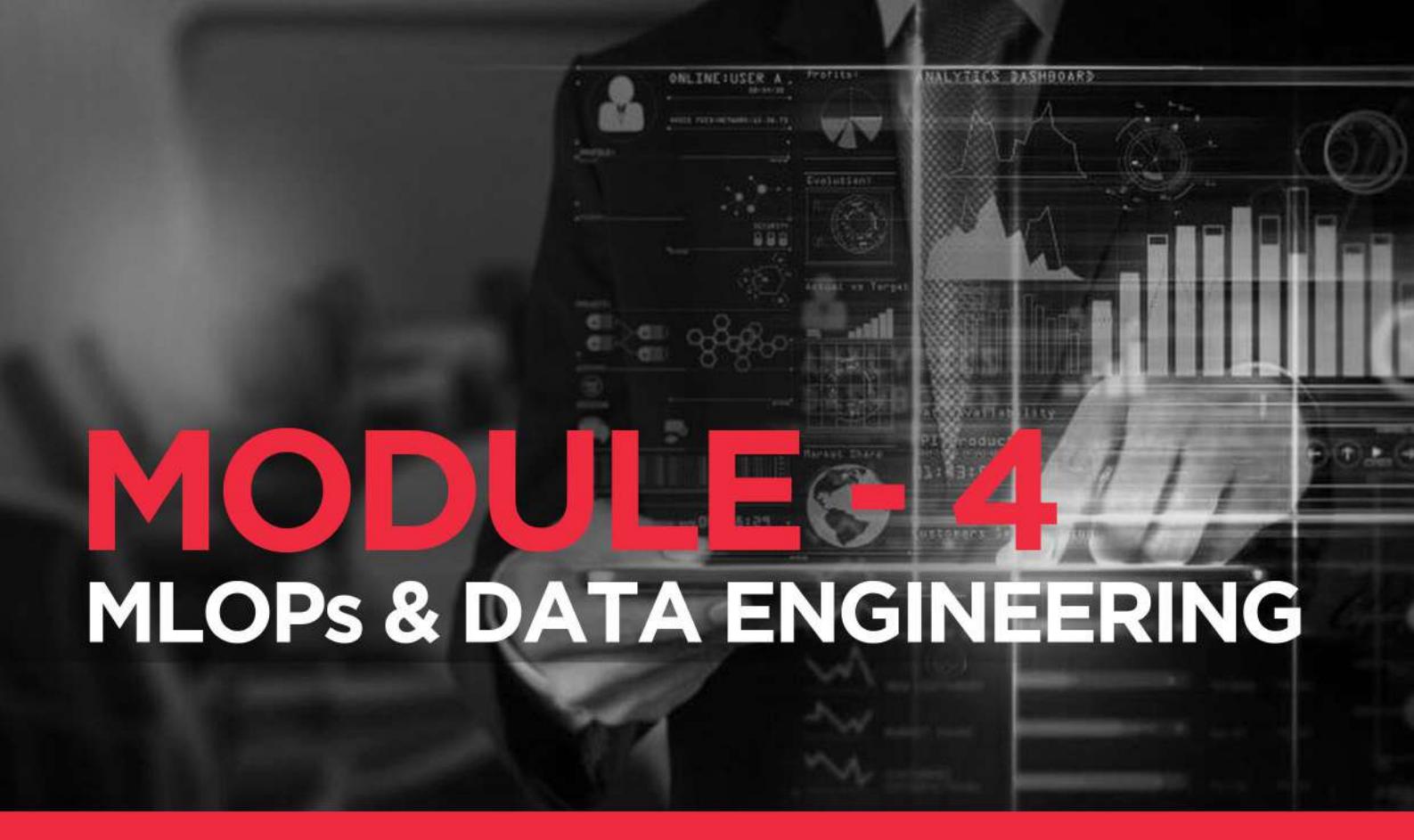
Clustering - k-Means, Hierarchical and Association Rule Mining

- Centroids and Medoids
- Deciding optimal value of 'k' using Elbow Method
- Divisive and Agglomerative Clustering
- Dendograms and their interpretation
- Applications of Clustering
- Market Basket Analysis

Dimensionality Reduction

- Introduction to Dimensionality Reduction and it's necessity
- EigenValues, EigenVectors and Orthogonality
- Transforming Eigen values into a new data set
- Proportion of variance explained in PCA





MODULE - 4

MLOPs & DATA ENGINEERING

1. Version Control

- Git and Github
- Forking
- Cloning
- Committing
- Branching and Collaborations

2. Application Development using Flask Framework

- Introduction to Flask
- Request and Response
- HTML files with Flask
- Jinja Templating and Template Inheritance
- Database and ORM (SQLAlchemy)

3. Cloud Deployment

- Introduction to cloud,
- IaaS, PaaS and SaaS
- Heroku Deployment
- AWS EC2 Deployment

4. Containerisation

- Introduction to Containerisation
- Containers vs Virtual Machines
- Introduction to Docker
- Docker container management using Kubernetes

5. Big Data

- Introduction to Big Data
- Introduction to Hadoop
- Hadoop Distributed File System
- Map Reduce
- Spark
- PySpark
- ML with PySpark
- ML Pipelines on Cloud



MODULE - 5 : DEEP LEARNING

Introduction to Deep Learning and Artificial Neural Network

- History of Deep Learning
- Artificial Neural Network
- Activation Function
- Feed Forward Neural Networks
- Training a Deep Neural Network
- Tensorflow Handson
- Training ANN using Keras

Convolution Neural Network

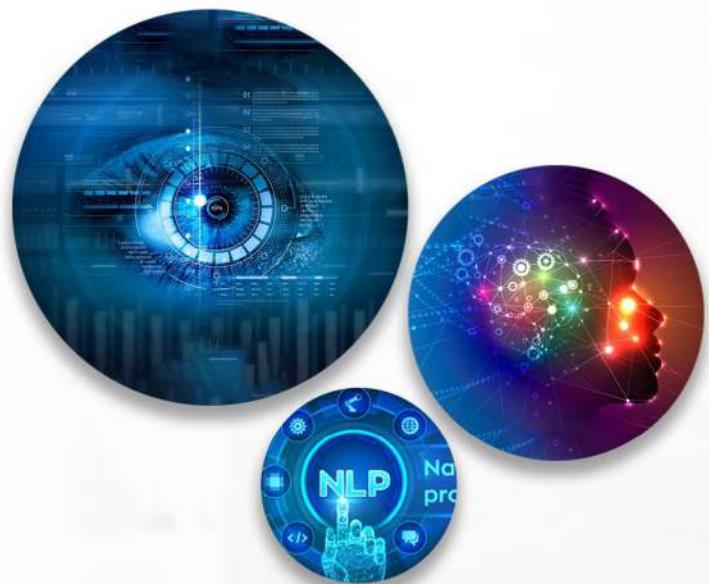
- Introduction to CNN
- Convolution Operation
- Stride
- Padding and Max Pooling
- VGG16
- Transfer Learning
- AlexNet, GoogleNet, ResNet
- Implementing CNN and Transfer Learning in Keras

Computer Vision - OpenCV, Semantic Segmentation, Object Detection

- OpenCV - Digitization, Sampling, Quantization and Working with images
- Hands On - Face Detection, Hand tracking and Pose Estimation
- Semantic Segmentation - Semantic Segmentation Process, UNET Architecture, Inception and MobileNet.
- Object Detection - Fast and Faster RCNN, Mask RCNN, YOLO and SSD
- Siamese Neural Network

Recurrent Neural Network

- Introduction to RNN
- Architecture
- Types of RNN and Training RNNs
- Bidirectional RNN
- LSTMs, GRU
- Implementation in Keras



Natural Language Processing - Word Embeddings and Transformers

- Text Preprocessing - Stop words, Tokenization, Stemming and Lemmatization
- Bag of Words and TF-IDF
- Word Embeddings - Word2vec, Glove
- POS Tagging and Named Entity Recognition (NER)
- Encoder Decoder Architecture
- Auto Encoder
- Transformers - Attention, BERT and GPT
- GANs
- Applications - Sentiment Analysis, Spam Detection, Machine Translation, Sentence Generation and Question Answering.



JOB GUARANTEE & SKILL DEVELOPMENT SUPPORT

Our JAINx & IBM Certified Post Graduation Course in Data Science is being offered with 100% placement guarantee. This means that every candidate will be put through a comprehensive and holistic placement training that will not only test your technical knowledge but also help in improving your soft skills. Our dedicated placement cell will conduct the following activities to help you land a dream job

- Resume Building Sessions
- Module-wise Technical Mock Interviews
- Intensive Interview Training Sessions
- Apply & Practice Presentation and Communication Skills
- Bi-weekly Placement Activities
- Soft Skill & Personality Development Session
- Comprehensive Professional Development
(interview etiquettes, guidance in non-tech sessions)

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making IT possible



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and more Companies



OUR ALUMNI REVIEWS



Vamshi krishna ★★★★★

Experience with Innomatics is amazing. I learned a lot from the starting to ending of concepts. For beginners, it's the best platform to start their journey for data science.

Rakesh singamaneni ★★★★★

Innomatics is one among the best institutions, which will help us in training the people who are interested in learning data science & big data. and providing with the best placement for a great opportunity... all the best and keep up the good work.

Anusha ★★★★★

Best place to learn data science n Big data at Innomatics research labs. I would like to thank everyone who made this course successful. I have learnt a lot from mentors. Their attitude was encouraging and positive. Overall a nice experience n got a good knowledge.

Prakash perumalla ★★★★★

Innomatics Research Labs is the best institute i have seen in Hyderabad, i am interested to learn Datascience & big data, joined in this institute, it gave me good knowledge and they have provided the placements and I got placed, I'm thankful to this institute for this opportunity

Murali Krishna ★★★★★

Innomatics is more than an institute. Its like a temple to me. I shaped up my career here. I never thought i will Land in an IT job that too as a data scientist. Its all because of the excellent faculty and great support from Mentors and placement team. Love Innomatics. Highly recommend



Data Science



Artificial Intelligence



Machine Learning



NLP



Azure



Staffing



Consulting



Deep Learning



Big Data



digital marketing



amazon web services



IoT



SQL



Online Training



Tableau



Expertise



Ideation Sessions



Devops



Python



NON-IT to IT
Career Transformation



Data Analytics



Product Development



Interviews



UseCases



Internship



30+ Industry
Experts



Training



Ok Google



Capstone Projects



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Chatbot



POC's



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