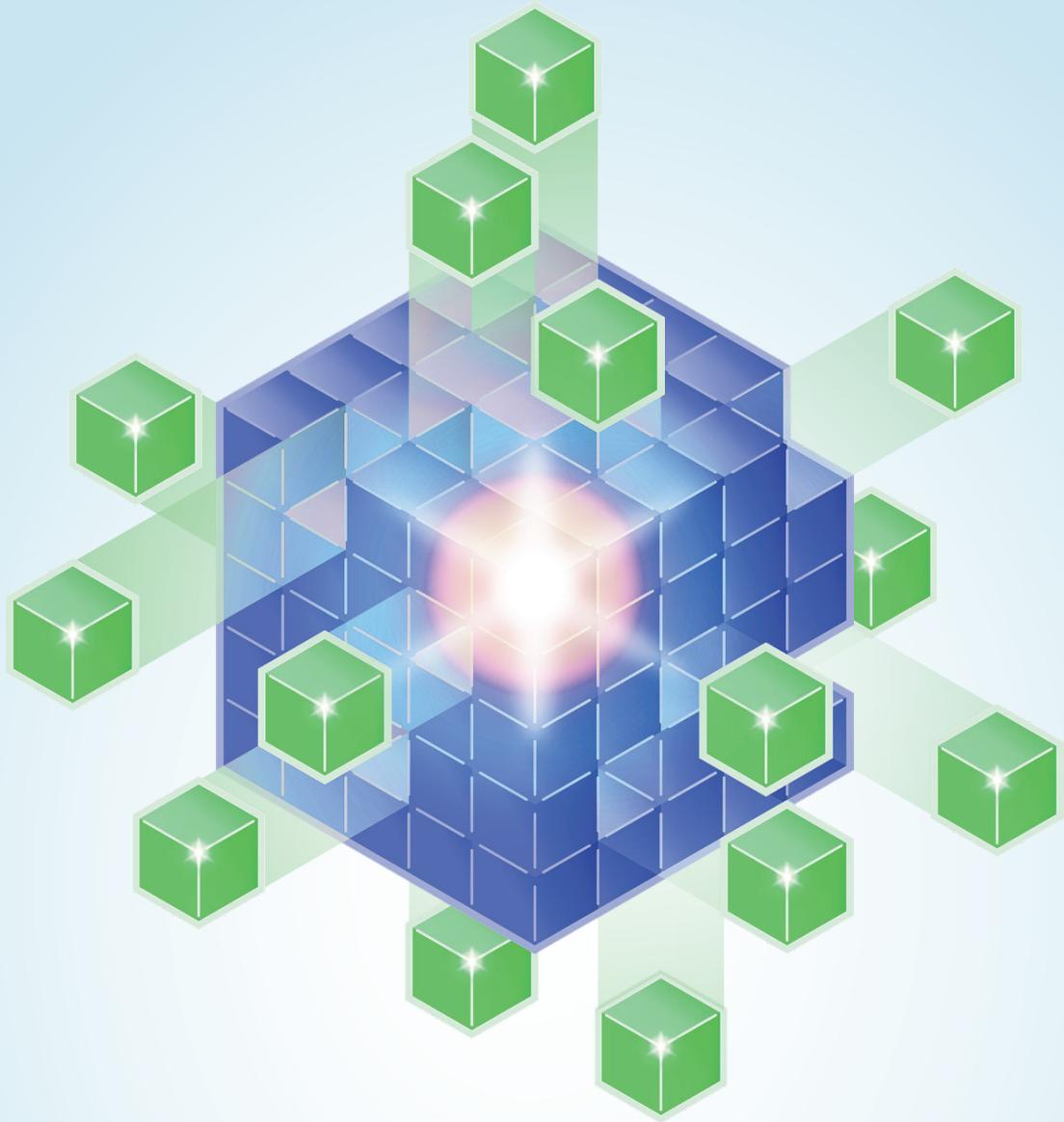


TRANSFORM DATA INTO ACTIONABLE INSIGHTS

Upskill  in

PYTHON FOR DATA SCIENCE



JOIN GRRAS FOR
JOB READY SKILLS

What is Python with Data Science?

Python with Data Science is the integration of Python programming with data science techniques to analyze, visualize, and interpret complex data. It involves using Python libraries and tools to perform tasks such as data cleaning, statistical analysis, machine learning, and data visualization. This combination allows for efficient handling of large datasets, making data-driven decisions, and deriving actionable insights from data.



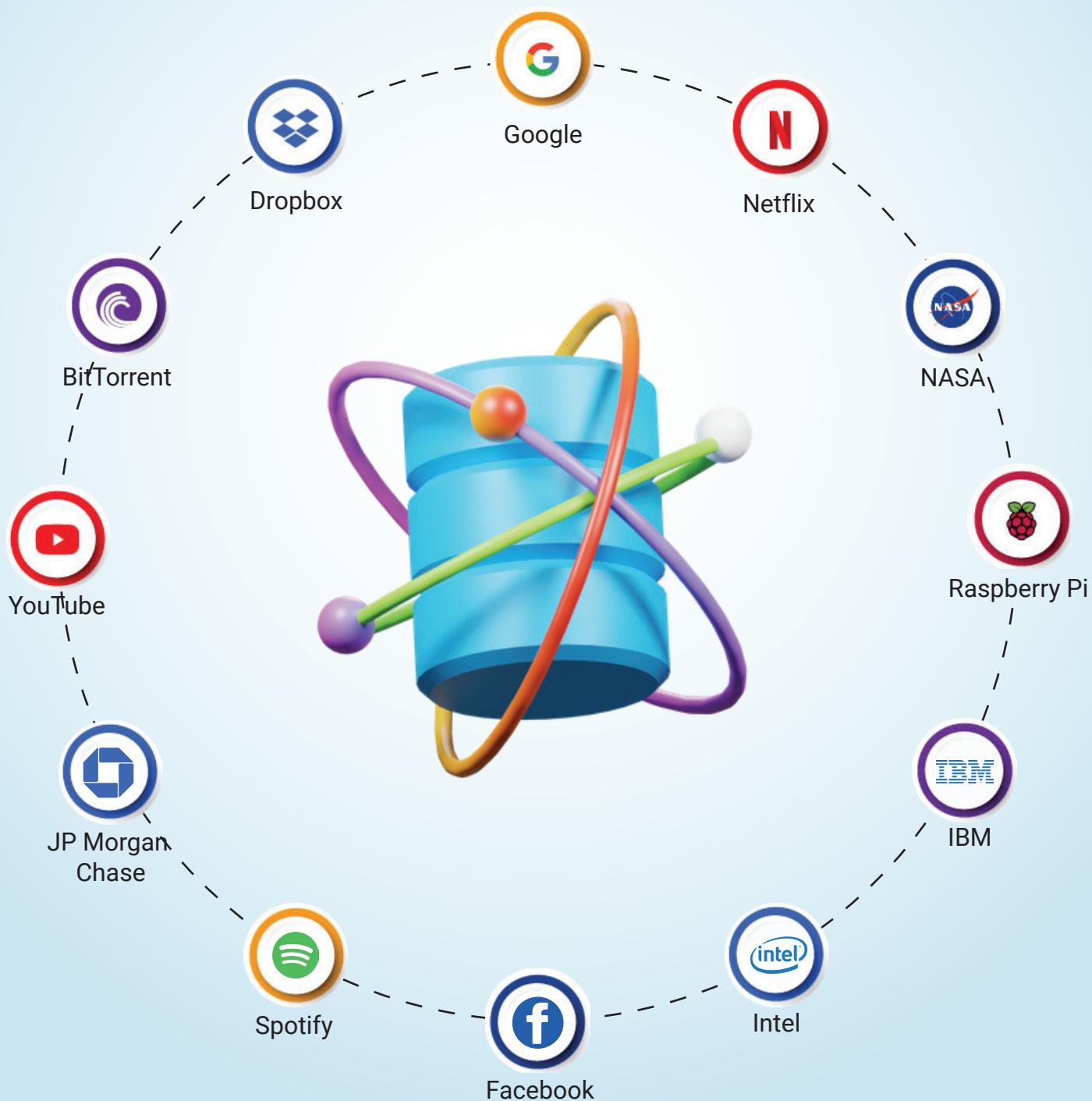
How Does Python Empower Data Science?

When combined with Python, data science becomes a powerful tool for extracting valuable insights from data, making decisions, and creating innovative solutions across various industries.

The combination of data science and Python happens due to Python's extensive libraries, ease of use, and versatility. It allows data scientists to analyze data, build predictive models, and create solutions across various industries, leading to innovation and informed decision-making.

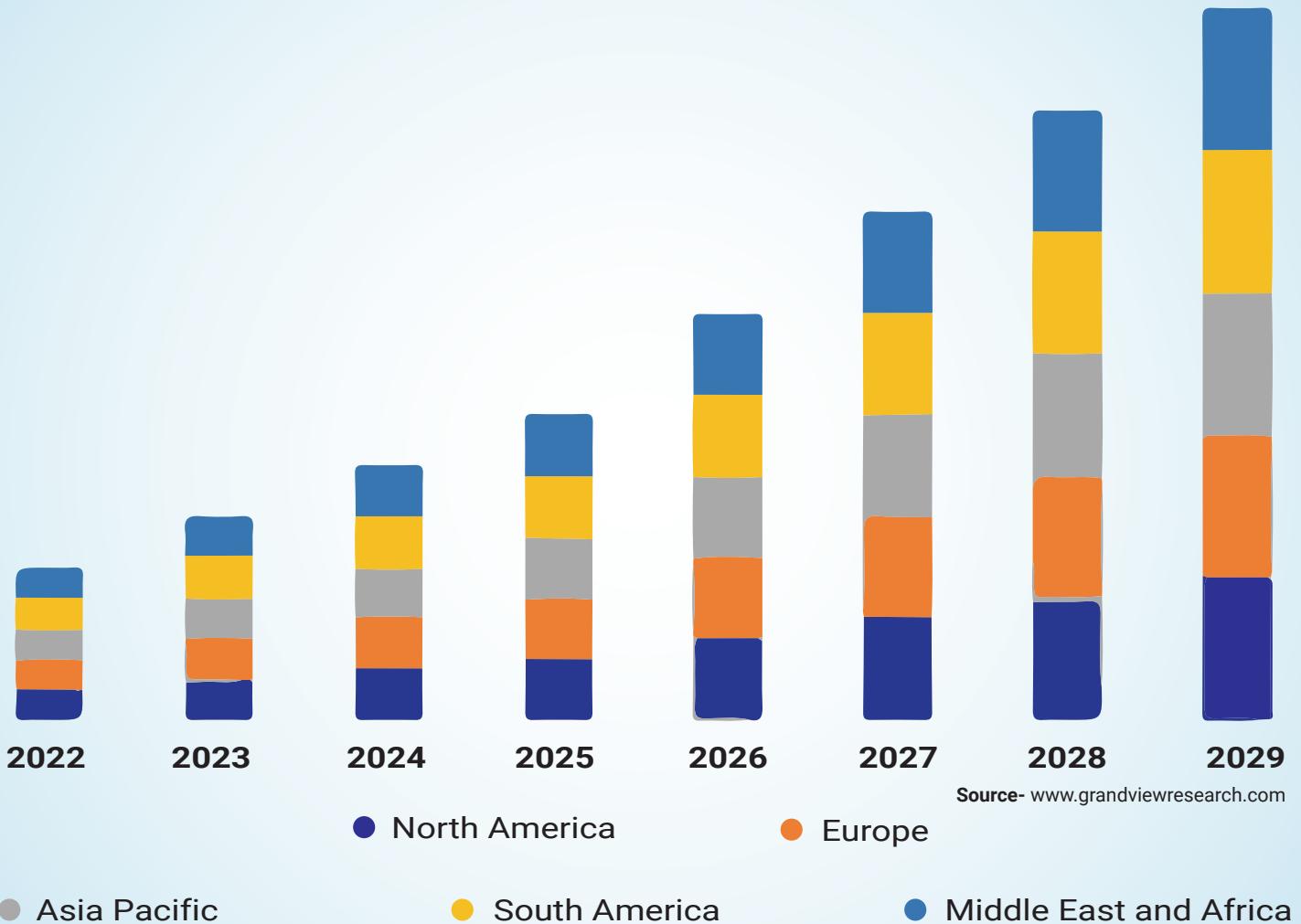
Industry Overview

Top Global organizations like **Intel, IBM, Netflix, NASA, YouTube & other** big players need candidates with strong Data Science & Machine Learning. Attractive pay packages, job opportunities and salary packages are available for the right candidate with the right skills.



Python with Data Science Market

The global market for Python with Data Science was **worth USD 7.75 million in 2021**. It is expected to grow to **USD 75.65 million by 2029**, with an annual growth rate of **32.95% from 2022 to 2029**.



What Does This Mean for You?



Growing demand for Python with Data Science



Competitive salaries with upward trends.



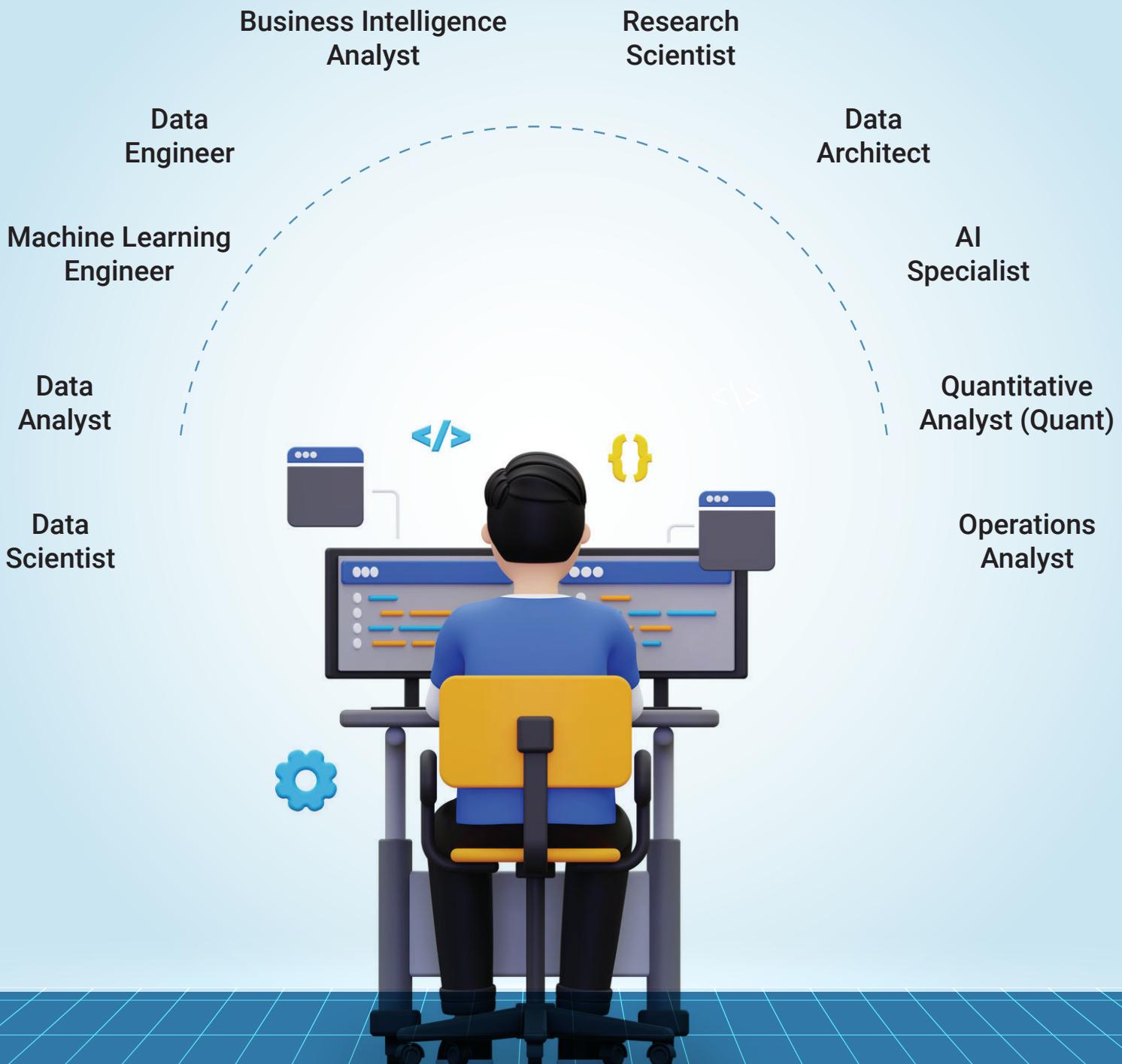
Stable career prospects with growth opportunities.



Valued skills across diverse sectors.

Future Opportunities For You

Post Completion of your program, you can apply for the following roles



Who Should Do This Course?



Aspiring Data Scientists looking to learn Python for comprehensive data analysis and machine learning.



Software Engineers interested in expanding their skills to include data science and analytics.



Students pursuing careers in data-driven fields like artificial intelligence and business analytics.



Professionals in IT and related fields aiming to integrate Python for data visualization and predictive modelling.



Anyone seeking to leverage Python's capabilities for solving real-world data challenges and advancing their career in data science.

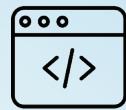
Course timeline



Recent Graduates,
Working Professionals



College Students
in Their 3rd or 4th Year



Coding Enthusiasts
Who Want to Upskill



Course Duration
24+ Weeks | 6 months



Sessions
160 live tech Session
24 Value Added Sessions



Class Format
1.5 Hours per day
Online/Offline.

Modules that we'll Cover

↳ All About Python

- Origin and History
- Scope, popularity, future of python
- Achievements of Python
- Mega Projects hosted in Python

↳ Python Installation and Environment Setup

- Flavours of python like Ipython, Cpython, PYPY etc
- Development Environment & Requirements
- Installation on windows, Linux, mac
- IDE of Python IDLE, Jupyter, PyCharm, Vscode, vim

↳ Writing first program in python

- Vim and command line creating first hello program in python
- Vscode & PyCharm as IDE
- Jupyter-Notebook and its features for fast, simple learning process

↳ Data type and Data Structures

- Numbers & Strings
- List, Tuples & Dictionary
- Sets & Frozen Sets
- Type Casting

↳ Control Statements

- Flow diagrams
- If – else
- Nested if else

↳ Looping in Python

- For & While Loops
- Break, Continue & Else with loop
- Nested Loops
- Pattern Printing

↳ Functions in Python

- Built-in Functions
- Defining Custom Functions
- Function Calling
- Scope Resolution global, local, nonlocal scope
- Recursion & Memorization
- Modular Programming & Code Reusability

↳ Advance Functions in Python

- Lambda anonymous function
- Map & Reduce function
- Filter function
- Lazy & Eager Execution

↳ Closures and Decorators in Python

- Memorization using closures
- Writing extensible functions using Decorators
- Decorators to implement oops like functionality to functions

↳ OOPS (Object Oriented Programming)

- Encapsulation, Abstraction and Data hiding
- Data Security & Access Control
- Inheritance, Polymorphism and Overriding, Operator Overloading
- Classes & Objects
- Message Passing and Share Space in OOPs

↳ Advance OOPs

- Name Mangling in OOPs
- MRO (Method Resolution Order)
- Meta Classes, Slots & Properties
- Class methods &Static methods

↳ Implementation of Data Structures in Python

- Implementing Stack
- Implementing Queue
- Implementing Link-List

↳ Generators & Iterators in Python

- Memory Optimization Techniques
- Lazy Evaluation
- Custom Generators & Decorators
- Zip like generator objects and their working

↳ Exception Handling

- Built in Exceptions
- Handling Exceptions
- else keyword with exception
- finally, keyword to define Clean Up Actions
- Custom Exception using raise keyword
- Assertion Error, assert keyword for assertions
- Creating Custom Exception Class

↳ File Handling

- Type of file formats and their significance
- File Creation and writing data to files
- Reading data from a file
- Overwriting files
- Dealing with excel sheets, csv files
- Making data persistent to create real life projects

↳ Data Serialization

- Serialization and De-Serialization
- Serializing python objects using pickle, json and shelve modules
- Deserializing Object State to read data from byte file or from network
- Storing Custom Objects to make state machines

↳ Installing Third Party Modules in Python

- Pip (Python Package Installer)
- Installing packages and modules using pip
- pypi (python package index) repository for package lookup
- Offline installation of a package using pip

↳ Database Connectivity

- Concept of Data Base Management Systems
- Using sqlite3 to store lite data in database like format
- CRUD (Create, Read, Update, Delete) Operations
- Data Base Connectivity in Python

↳ **Modules and Packages in Python**

- Module name space
- If `__name__ == "__main__"` in Python
- Defining Custom Modules
- Creating & Testing Packages
- Importing and using custom packages
- Adding custom modules to library

↳ **Standard Library in Python**

- Os and Sys Module to interact with Operating System
- Shutil Module to copy, paste and delete files
- Subprocess Module to execute commands & their output
- Zlib for data compression
- Time & Datetime Module for time management

↳ **Graphical User Interface using Tk**

- Widgets like button, label, frame, canvas, radio buttons
- Check Buttons, dropdown menus, scroll bars
- Progress Bars, message box, text box, entry widget etc
- Geometry Managers like place, grid, and pack
- Dialog box, top level window implementation

↳ **Virtual Environment**

- Difference between Production and Development Environment
- Package versions and their importance in projects
- Creating a separate virtual environment for Python Projects
- Activating & Deactivating Virtual Environment
- Installing Different Version of packages in different environments
- Requirement.txt & README file

↳ **APIs**

- Application Programming Interfaces

- Accessing Google place APIs
- Accessing Facebook Graph API
- Weather & Other APIs

↳ GitHub

- Self-Paced through video

↳ Flask Web Framework of Python

- Installation and Configuration of Flask
- Rendering Templates
- Jinja2 Template Rendering (Include and Extending)
- Handling GET and POST requests in Flask
- Integrating HTML, CSS, Flask together
- Web Forms & Cookies and Sessions in Flask
- Database Connectivity in Flask

↳ Data Engineering

Data Collection

- Fetching data using REST APIs
- Fetching data from different data resources
 - Websites
 - Online Repositories
 - Online data sources

Data Preprocessing

- Cleaning Unstructured Data into Structured Data
- One Hot Encoding
- Text Processing using Vectorization and Bag of Words
- Finding and Fixing / Removing Outliers in Data
- Dealing with semi-structured data

↳ Exploratory Data Analysis

Math's and Statistics

- Descriptive Statistics – Mean, Median, Mode,
- Percentile, Decile, Variance, Standard deviation
- Inter Quartile Range (IQR)

- Different types of Data Distribution
- Probability and Bay's Theorem

Data Preprocessing

- Cleaning Unstructured Data into Structured Data
- One Hot Encoding
- Text Processing using Vectorization and Bag of Words
- Finding and Fixing / Removing Outliers in Data
- Dealing with semi-structured data

Numpy

- Difference between list and array
- Creating, accessing and manipulating n dimensional numpy arrays
- Array Operations
- Numpy built in functions
- Manipulating images with array manipulation

Pandas

- Introduction to Pandas
- Introduction to series and operations with series.
- Dataframe and its operations
- Data Filtering row and column wise.
- Data Filtering based on conditions.
- Handling date time type data using pandas.
- Pandas built in functions.
- Drop rows/columns
- Handling null values using pandas.
- Groupby, orderby, sorting, indexing

Analysis of Data

- Introduction to data analysis
- Apply mathematics and statistics in analysis
- Find insights on real world data by applying different techniques/functions
- Sorting, Searching, Accessing, Manipulation of Data
- Groupby statements and Pivot tables
- Data Aggregation to find Insights

Data Visualization

- Plotting data to get insights from data using MATPLOTLIB, SEABORN, PLOTLY.
- Line Plot, Scatter Plot, Histograms, Box plot to understand numerical data
- Bar Chart, Pie Chart to understand categorical data
- Enhance graph using libraries
- Create multiple axes
- Plotting Live data

Report Generations

- Generating Reports to showcase insights from data using jupyter notebooks

↓ Introduction to Machine Learning

- Introduction to Machine Learning
- Supervised, Semi-Supervised, and Unsupervised Machine Learning
- Using sklearn built-in Transforms to create Data Models
- Creating Custom Transforms
- Data Pipelines to convert raw_data into Structured Data Model

↓ Natural Language Processing

- Introduction to NLP
- Regular Expressions
- Concepts of NLP like Stemming, Lemmatization, Tokenization
- Convert word to vector using methodologies like Bag of Words(BOW), TfIdf

↓ Supervised Machine Learning Models – Regression and Classification Models

- Linear Regression
- Logistic Regression
- Decision Tree
- Naïve Bays
- Support Vector Machines
- K-nearest Neighbors
- Overfitting, Underfitting and Bestfit
- Performance Evaluation Metrics for classification and regression models

↳ **Un-Supervised Machine Learning Models**

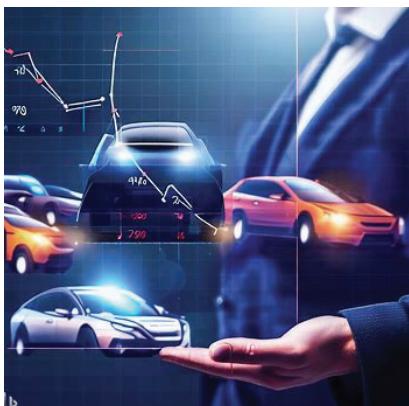
- Dimension Reduction Techniques
- K-Means Clustering
- Performance Evaluation Metrics for clustering

↳ **Model Deployment**

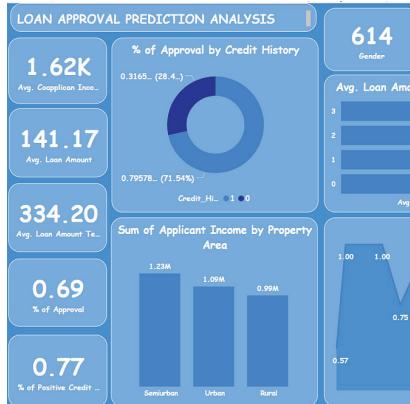
- Saving and Deploying machine learning models

PROJECTS

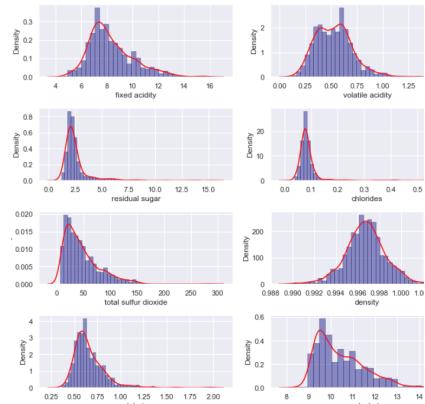
- Car Price Predictor
- Loan Prediction
- Wine Quality Prediction
- Ipl Score Prediction
- Movie Recommendation System
- Ecommerce Customers
- Diabetes Prediction
- Arrhythmia classification using ECG data



Car Price Predictor



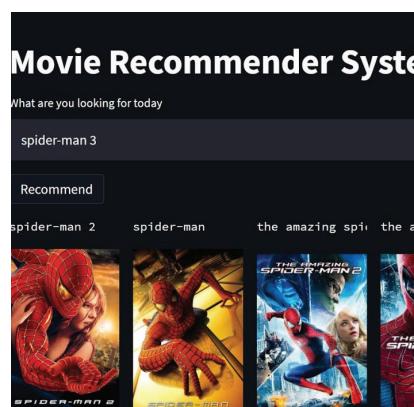
Loan Prediction



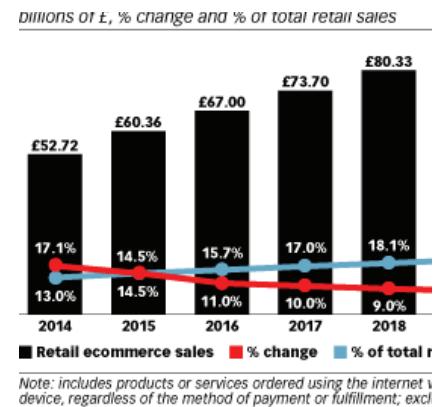
Wine Quality Prediction



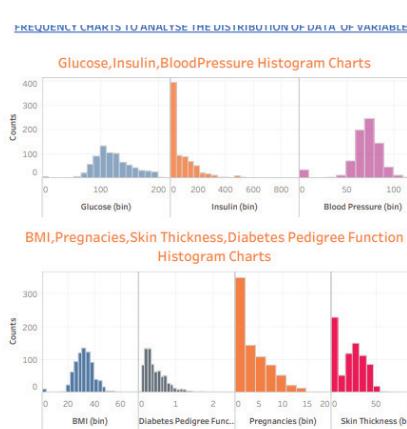
IPL Score Prediction



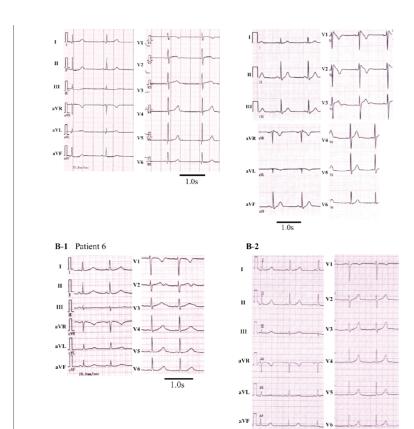
Movie Recommender System



Ecommerce Customers



Diabetes Prediction



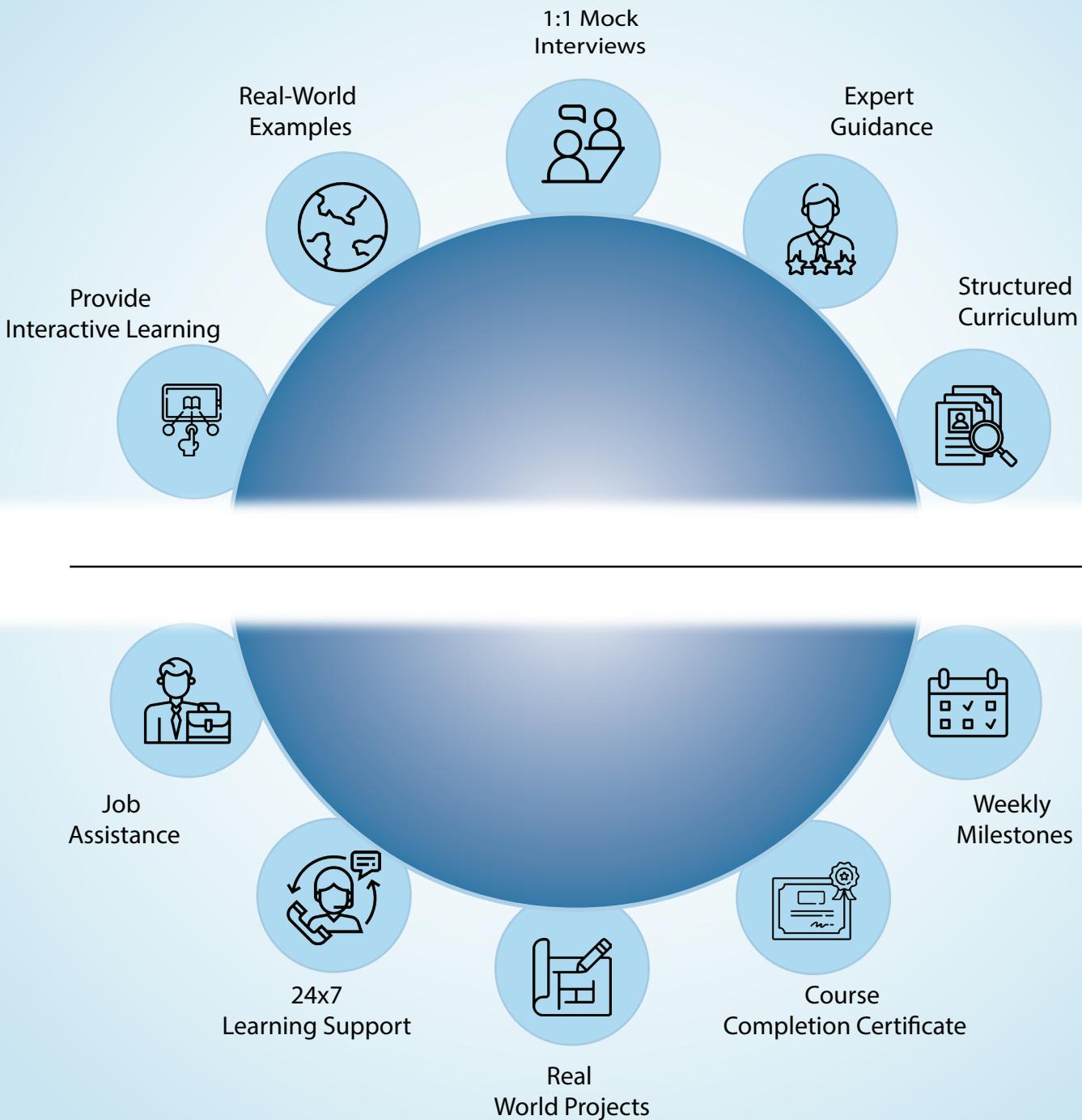
Arrhythmia classification using ECG data



House Price Prediction

Why Python with Data Science From GRRAS?

Enroll in this course to not only enhance your technical skills but also sharpen your competitive edge in today's dynamic world.



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This is one of the best institute where you can learn any technology literally from scratch. I personally enrolled in Python course and classes started from the very basic of programming. The labs are upto the mark. Timings of the classes are also suitable according to our schedule of regular classes. You are given assignments and labs for the practice purpose and all the assignments are regularly checked by respective instructor. I personally recommend you to join the institute if you want to learn something from the basis to advanced level.

Gaurav Singh |



I recently completed a Python internship at Grass Solutions, and I must say it was an incredible learning journey. Throughout my time there, I had the opportunity to gain valuable insights into the world of Python development, and I couldn't be more pleased with the overall experience.

Mentorship: One of the standout aspects of my internship was the exceptional mentorship provided by the team at Grass Solutions. From day one, I was paired with a knowledgeable and approachable mentor who guided me through

Manish Bairwa |



My experience at the Gras solution Pvt. Ltd institute is so positive and it's a great institute for the IT training and one of the best thing I like about this institute that the trainer's are very supportive and so understanding and the course material is also easy to understand with the explanation of trainer's...

Aftab Ansari |



GRRAS must be one of the best institutes in Jaipur. The kind of support and guidance they provide, it will definitely help you to grow and achieve the target you are looking for in your career. As far as my opinion is concerned, don't look for the other options

Subhashini Anamthu |



This GRRAS Solution Pvt. Ltd. Is great training center. I'm doing data science here . The trainers in GRRAS Solution is excellent and experienced . They have excellent knowledge about their courses.



Vedant Laxkar |



This GRRAS Solution Pvt. Ltd. Is great training center. I'm doing data science here. They have excellent knowledge about their courses Trainers are good experience and excellent knowalage.The trainers in GRRAS Solution is excellent and good experienced.



Priyanshu Tambi |



This GRRAS Solution Pvt. Ltd. Is great training center. I'm doing data science here . The trainers in GRRAS Solution is excellent and experienced . They have excellent knowledge about their courses
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Ayush Gupta |



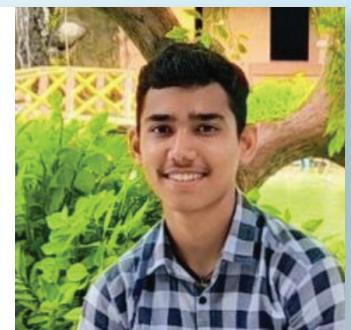
This Grras Solutions Pvt Ltd. is traning center. I'm doing data science here.The trainers in Grras solutions is great experience.Grras Solution is a great facilities and opportunity. This institute of the great job opportunities. They the great knowledge about there their courses
Trainers are experience.



Tanish Khandelwal |



I recently completed the internship in Data Science and Machine Learning using Python at GRRAS Solutions Pvt Ltd, and I couldn't be more satisfied with my experience. The curriculum was comprehensive, covering essential concepts and practical applications of data science and machine learning, which have immensely helped me in gaining a solid foundation in this field.



Nikhil Pathak |

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