



**GrepUp  
Academy**

Best IT Institute in India | Learn Today, Lead Tomorrow

# DATA SCIENCE WITH AI

GrepUp Academy

Course details



# About Us

At **GrepUp Academy**, we believe that quality education should be accessible, practical, and future-focused. Our mission is to empower students with the right skills and mindset needed to thrive in today's competitive tech world. Whether you're a college student, working professional, or someone switching careers, our courses are designed to take you from beginner to job-ready — with full support along the way.

At GrepUp Academy, our Data Science program helps students build strong skills in Python, statistics, machine learning, and deep learning through hands-on projects and real-world tools like Scikit-Learn and TensorFlow. With practical training, expert guidance, and career support, we prepare learners to confidently enter the Data Science field and grow in high-demand tech roles.



With over **9.5K+** students trained and many landing careers in top companies with salaries up to **₹45 LPA**, **GrepUp Academy** is proud to be a launchpad for tech talent. From interview preparation and resume building to one-on-one mentorship and career guidance, we support students every step of the way. Our vision is clear — to build India's most career-focused tech learning platform where learning is not just theoretical, but transformational.

# 11-Months Data Science & AI Curriculum

## Months 1-3: Foundational Skills

### Mathematics & Statistics:

- **Linear Algebra:** Vectors, matrices, eigenvalues/eigenvectors, singular value decomposition (SVD).
- **Calculus:** Derivatives, integrals, optimization techniques.
- **Probability & Statistics:** Probability distributions, hypothesis testing, confidence intervals, Bayesian inference.
- **Project:** Analyze a dataset (e.g., customer churn, housing prices) using basic statistical methods and visualizations.

### Programming Fundamentals:

- **Python:** Data types, control flow, functions, object-oriented programming (OOP).
- **Libraries:** NumPy, Pandas, Matplotlib, Seaborn.
- **Project:** Develop a data cleaning and exploratory data analysis (EDA) pipeline for a real-world dataset.

## Months 4-6: Machine Learning Foundations

### Supervised Learning:

- **Regression:** Linear regression, polynomial regression, decision trees, support vector machines (SVM).
- **Classification:** Logistic regression, k-Nearest Neighbors (k-NN), Naive Bayes, random forests. Model
- **Evaluation:** Metrics (accuracy, precision, recall, F1-score), cross-validation, bias-variance tradeoff.
- **Project:** Build and evaluate a classification model (e.g., spam detection, image recognition).

### Unsupervised Learning:

- **Clustering:** K-means, hierarchical clustering, DBSCAN.
- **Dimensionality Reduction:** Principal Component Analysis (PCA), t-SNE.
- **Project:** Perform customer segmentation on a dataset using clustering techniques.

## Months 7-9: Deep Learning & AI

### Neural Networks:

- **Perceptron:** Introduction to artificial neurons and basic neural networks.
- **Deep Neural Networks:** Feedforward networks, convolutional neural networks (CNNs), recurrent neural networks (RNNs).
- **TensorFlow/PyTorch:** Building and training deep learning models using popular frameworks.
- **Project:** Develop a deep learning model for image classification (e.g., using CIFAR-10, MNIST).

### Natural Language Processing (NLP):

- **Text preprocessing:** Cleaning, tokenization, stemming, lemmatization.
- **NLP techniques:** Sentiment analysis, topic modeling, machine translation.
- **Project:** Build a sentiment analysis model for social media data or perform text classification on a given dataset.



# 11-Month Data Science & AI Curriculum

## AI Ethics & Responsible AI:

- Bias in AI, fairness, accountability, transparency, privacy.
- Ethical considerations in AI development and deployment.

## Month 10: Interview Preparation

### Resume & Portfolio Building:

- Crafting a strong resume and LinkedIn profile.
- Building a portfolio of projects showcasing skills and accomplishments.

### Technical Interview Preparation:

- Practice coding challenges on platforms like LeetCode, HackerRank.
- Prepare for common data science interview questions (e.g., statistical concepts, machine learning algorithms, case studies).
- Mock interviews with industry experts.

### Behavioral Interview Preparation:

- STAR method for answering behavioral questions.
- Communication and presentation skills.

## Month 11: Soft Skills Enhancement

### Communication & Presentation:

- Effective communication (written and verbal), public speaking, storytelling with data.
- Data visualization and presentation best practices.

### Teamwork & Collaboration:

- Agile methodologies, working in teams, conflict resolution.
- Effective communication and collaboration within a team.

### Business Acumen:

- Understanding business needs and translating them into data science solutions.
- Data-driven decision making and its impact on business outcomes.

### Throughout the Curriculum:

- **Regular Projects:** Hands-on projects throughout the curriculum to reinforce learning and build a strong portfolio.
- **Industry Case Studies:** Analyze real-world case studies to understand how data science is applied in different industries.
- **Guest Lectures:** Invite industry professionals to share their experiences and insights.
- **Networking:** Opportunities to network with other data scientists and industry professionals.

# Foundational Skills

Duration 1-3 Months

## Why Foundational Skills Matter in Tech Careers

In the world of technology, having strong foundational skills is like building a solid base for a skyscraper — everything else depends on it. Whether you're learning Data Science, Web Development, or AI, you need to understand the core concepts like logic building, problem-solving, mathematics, and programming fundamentals. These basics help you think analytically, write better code, and understand how systems work under the hood. At GrepUp Academy, we ensure every student builds this foundation with confidence before moving to advanced topics — because lasting success comes from strong beginnings.



## What You Learn at the Foundational Level

Foundational learning includes essential topics like basic Python programming, data types, loops, conditionals, functions, statistics, data structures, and algorithms. These skills are crucial for every tech role, from Data Analyst to Full Stack Developer. At GrepUp Academy, we make these topics easy to understand through live sessions, quizzes, real-world examples, and practice assignments. Once you're confident with the basics, you'll find it much easier to learn tools like SQL, Power BI, Machine Learning, and more — because your mindset will be ready to solve problems logically and creatively.

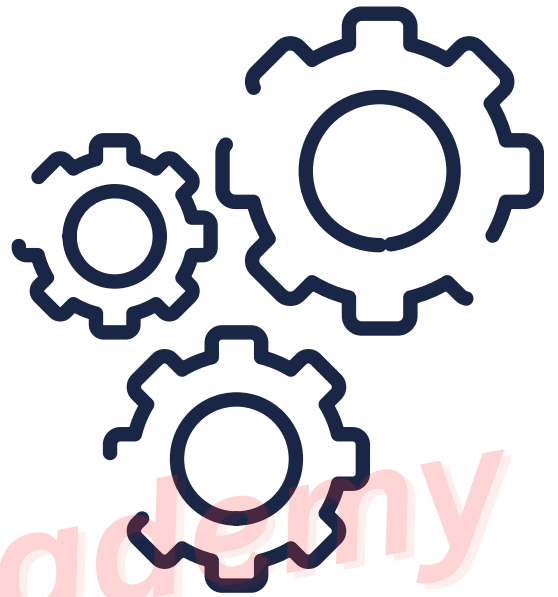


# Machine Learning Basic to Advance

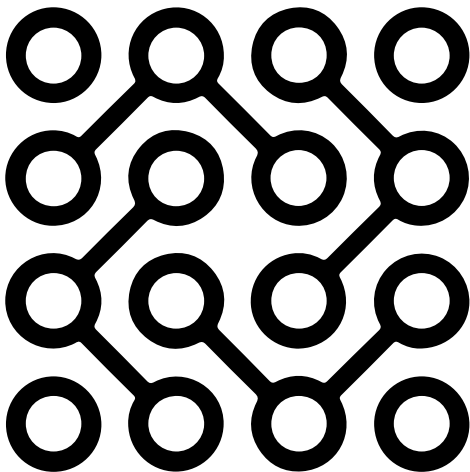
Duration 4-6 Months

## What is Machine Learning and Why It Matters

Machine Learning is a type of technology that allows computers to learn from data and improve their performance over time without being explicitly programmed. It's the driving force behind many modern tools like Google search, YouTube recommendations, self-driving cars, and chatbots. At GrepUp Academy, we make Machine Learning simple for beginners by breaking down complex concepts into easy-to-understand lessons and real-world examples that show how ML is used in industries today.



GrepUp Academy



## How We Teach Machine Learning at GrepUp

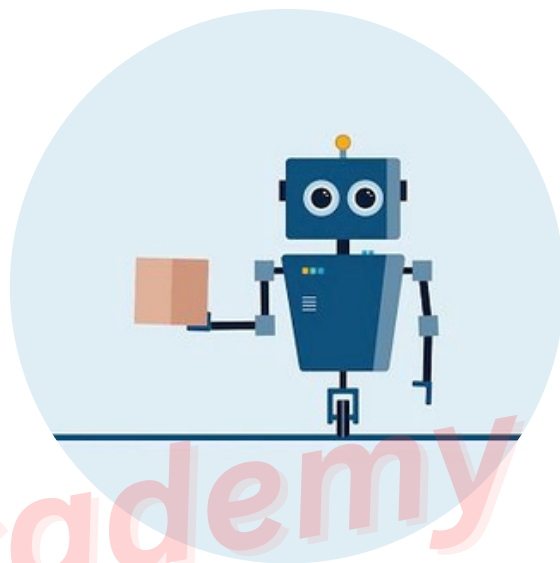
At GrepUp Academy, we focus on hands-on learning so students don't just understand theory—they actually build projects using real data. We start with the basics like supervised and unsupervised learning, then move into algorithms like linear regression, decision trees, and clustering. With tools like Scikit-Learn, Python, and Jupyter Notebooks, our students learn how to build, train, and evaluate models that solve real problems. By the end of the course, learners are job-ready and confident in using ML to build smart, data-driven applications.

# Deep Learning With AI

Duration 7-9 Months

## What is Deep Learning in Artificial Intelligence?

Deep Learning is a specialized branch of Artificial Intelligence (AI) that mimics the way the human brain learns and processes information using artificial neural networks. It powers some of the most advanced technologies today – like facial recognition, self-driving cars, voice assistants, and language translation. Unlike traditional Machine Learning, which often requires manual feature selection, Deep Learning can automatically learn complex patterns from large amounts of data. At GrepUp Academy, we introduce students to this powerful technology, helping them understand how neural networks work and how they're used to solve real-world problems.



## How We Teach Deep Learning at GrepUp Academy



Our Deep Learning module is built for clarity, confidence, and real-world application. Students start by learning the basics of neural networks – including layers, activation functions, and backpropagation – and then move on to more advanced architectures like Convolutional Neural Networks (CNNs) for image processing and Recurrent Neural Networks (RNNs) for sequential data. We use popular tools like TensorFlow and Keras to train models on real datasets, giving students practical experience in building AI systems. By the end of the course, learners can create smart models that power tasks like image classification, speech recognition, and predictive analytics – all with confidence and clarity.

# Interview Preparation

Duration 10-11 Months

Learning technical skills is only half the journey – cracking the interview is what truly gets you hired. Many talented candidates struggle in interviews not because they lack knowledge, but because they aren't prepared to explain it clearly. That's why at GrepUp Academy, we focus heavily on interview preparation, helping students build communication, confidence, and clarity. We guide them through common technical questions, behavioral rounds, and real case scenarios that companies use during hiring.



Our interview prep program includes mock interviews, resume reviews, HR round practice, technical quizzes, portfolio checks, and guidance on how to explain project work effectively. We also train students on how to handle pressure, ask smart questions, and present themselves professionally. Whether it's for roles in Data Science, Web Development, or AI, we make sure GrepUp learners walk into every interview not just skilled – but fully prepared to impress and succeed.



# Why Choose Us?

## ✓ Practical Learning That Gets You Hired

At GrepUp Academy, we focus on real-world skills — not just theory. Every course includes hands-on projects, live tools, and real datasets to make sure you're job-ready from day one. You'll build things that matter, practice industry workflows, and create a portfolio that speaks for your skills.



## 🎯 Beginner-Friendly and Mentor-Led

Our courses are designed for complete beginners as well as upskillers. You'll learn step-by-step with simple explanations and personal guidance from expert mentors. Doubts? We offer regular doubt-clearing sessions and one-on-one support to help you stay on track and grow with confidence.



## 📁 Updated Content with Industry-Relevant Tools

We teach what the industry needs. From Python and SQL to Tableau, Power BI, TensorFlow, and React — our content is always updated to reflect the latest tools, technologies, and job requirements. You won't just learn — you'll stay relevant in a fast-moving tech world.



## 🚀 End-to-End Career Support

We don't stop at teaching — we help you land the job. Our students receive complete career assistance including resume writing, mock interviews, LinkedIn optimization, and portfolio reviews. Many have gone on to secure roles with packages up to ₹45 LPA, proving our system works.



## 🌟 A Trusted Learning Community of 9.5K+ Students

With over 9,500 learners across India, GrepUp is building a strong tech education community. Students trust us for our teaching style, personalized support, and career-driven focus. When you choose GrepUp, you're joining a growing network of future-ready professionals.



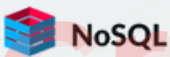
# Necessary Tools & Libraries



**Excel** is a powerful tool that helps you manage, analyze, and visualize data. Excel is one of the most essential tools for anyone working with data — from organizing and cleaning spreadsheets to analyzing trends and creating interactive dashboards, it gives you complete control over data in a simple, visual format. At GrepUp Academy, we help students master Excel from basics to advanced features through real-world practice, efficiently using functions, formulas, and dynamic dashboards.



**MySQL** is a powerful open-source database system that allows you to store, manage, and retrieve large amounts of structured data efficiently using SQL queries. At GrepUp Academy, we train students to work confidently with MySQL — from creating tables and running complex joins to building real-time database-driven applications.



**NoSQL** databases are designed to handle unstructured and large-scale data with high flexibility and speed — perfect for real-time applications, big data, and modern web development. At GrepUp Academy, we teach students how to work with NoSQL systems like MongoDB, helping them store, query, and scale data efficiently in dynamic environments.



**Tableau** is a leading data visualization tool that helps you turn raw data into interactive, insightful dashboards used by businesses worldwide for decision-making. At GrepUp Academy, we train students to master Tableau from the ground up — from basic charts to advanced visual analytics — using real-world datasets and hands-on projects that build job-ready skills.



**Power BI** is a powerful business intelligence tool by Microsoft that allows you to connect data from multiple sources, analyze it deeply, and create interactive dashboards for smarter decision-making. At GrepUp Academy, we guide students through every step — from data cleaning and modeling to building real-time reports — making them confident in using Power BI for industry-level analytics.

# Necessary Tools & Libraries



**NumPy** is a foundational Python library used for high-performance numerical computing, making it essential for data science, machine learning, and scientific analysis. At GrepUp Academy, we help students master NumPy from scratch — covering arrays, broadcasting, mathematical functions, and real-world applications — to build a strong base for advanced data processing and analytics.



**Pandas** is one of the most essential Python libraries for data manipulation and analysis, allowing users to clean, filter, group, and transform data with ease. At GrepUp Academy, we train students to master Pandas using real-world datasets — teaching everything from DataFrames and indexing to merging, aggregating, and preparing data for machine learning and reporting.



**Matplotlib** is a powerful Python library used to create clear, professional-quality visualizations such as line charts, bar graphs, histograms, and scatter plots. At GrepUp Academy, we teach students how to use Matplotlib from the basics to advanced customizations — enabling them to tell compelling stories with data, analyze trends visually, and make their projects stand out with impactful graphs.



**Seaborn** is a powerful Python visualization library built on top of Matplotlib, known for making beautiful and informative statistical graphics with just a few lines of code. At GrepUp Academy, we teach students how to use Seaborn to create heatmaps, pair plots, box plots, and more — helping them analyze data patterns, uncover insights, and enhance the visual appeal of their data science projects.



**Anaconda** is a powerful open-source platform used by data scientists and developers to easily manage Python libraries, environments, and tools all in one place. At GrepUp Academy, we help students get started with Anaconda from day one — teaching them how to set up environments, manage packages, and use tools like Jupyter Notebook for smooth, efficient, and organized coding throughout their data science journey.

# Necessary Tools & Libraries



**R Programming** is a powerful language widely used in statistics, data modeling, and research-based analytics, especially in academic and corporate environments. At GrepUp Academy, we teach R with a practical focus – covering everything from variables and data structures to advanced topics like data visualization with ggplot2, statistical testing, and building predictive models. Our hands-on approach ensures learners gain confidence in using R for real-world data science and decision-making tasks.



**Scikit-Learn** is one of the most popular Python libraries for machine learning, offering simple and efficient tools for data mining, classification, regression, and clustering. At GrepUp Academy, we train students to use Scikit-Learn to build real-world ML models – from preprocessing data and splitting datasets to training algorithms like decision trees, SVMs, and logistic regression – all with hands-on projects that prepare them for real industry tasks.



**Imbalanced-Learn** (imblearn) is a powerful Python library designed to handle imbalanced datasets, a common challenge in real-world machine learning tasks where certain classes are underrepresented. At GrepUp Academy, we teach students how to use techniques like SMOTE, RandomOverSampler, and under-sampling methods from imblearn to improve model performance, reduce bias, and build more reliable classification systems – a must-have skill for data science professionals.



**Google Data Studio** is a free, cloud-based data visualization tool that allows you to turn raw data into interactive, shareable dashboards and reports with ease. At GrepUp Academy, we teach students how to connect Data Studio with sources like Google Sheets, BigQuery, and SQL databases – and create professional, real-time dashboards that make data insights clear and impactful. It's an essential tool for aspiring data analysts, marketers, and business intelligence professionals.



**TensorFlow** is a powerful open-source library developed by Google for building and training machine learning and deep learning models – from simple neural networks to complex AI systems. At GrepUp Academy, we teach students how to use TensorFlow step-by-step, covering core concepts like tensors, layers, optimizers, and model evaluation. Through hands-on projects in image recognition, natural language processing, and predictive analytics, learners gain the skills to build smart, scalable AI solutions confidently.



# Necessary Tools & Libraries



**PyTorch** is a dynamic, open-source deep learning framework widely used in research and industry for building advanced AI models with speed and flexibility. At GrepUp Academy, we teach students how to use PyTorch to build, train, and fine-tune neural networks – covering key concepts like tensors, autograd, modules, and loss functions. Through real-world projects in image classification, NLP, and model deployment, learners develop the skills to create intelligent systems that solve complex problems in the real world.



**NLTK** (Natural Language Toolkit) is a powerful Python library used for working with human language data – ideal for tasks like text processing, tokenization, stemming, and sentiment analysis. At GrepUp Academy, we train students to use NLTK for real-world Natural Language Processing (NLP) applications such as chatbot development, language modeling, and text classification. With hands-on practice and real datasets, learners gain a strong foundation in processing and understanding text – a critical skill in today's AI-driven world.




**Statsmodels** is a powerful Python library built for performing statistical tests, regression analysis, and building explanatory models with clarity and precision. At GrepUp Academy, we teach students how to use Statsmodels to run linear and logistic regression, time series forecasting, hypothesis testing, and more – all with detailed statistical summaries. It's the perfect tool for those looking to blend data science with strong statistical reasoning, especially in finance, research, and academic data analysis.



**SAS** (Statistical Analysis System) is a powerful software suite used by enterprises and government organizations worldwide for advanced analytics, predictive modeling, and data management. At GrepUp Academy, we introduce learners to SAS fundamentals – including data manipulation, statistical procedures, and reporting – helping them understand how large-scale organizations use structured data to drive decisions. Whether you're aiming for roles in analytics, banking, or healthcare, SAS adds a valuable edge to your data career.



 **SciPy** is a powerful Python library built for scientific and technical computing, offering advanced functions for optimization, statistics, signal processing, and linear algebra. At GrepUp Academy, we help students unlock the full potential of SciPy by teaching how to solve complex mathematical problems, perform numerical simulations, and build data-driven models with precision and speed.

# Necessary Tools & Libraries



**Scrapy** is a fast, open-source Python framework used for large-scale web scraping and crawling — ideal for collecting structured data from websites automatically. At GrepUp Academy, we teach students how to build Scrapy spiders to extract data, handle pagination, manage requests, and export results efficiently. Whether you're gathering data for research, market analysis, or machine learning, mastering Scrapy gives you the power to build scalable, production-level scraping solutions.



**Flask** is a lightweight and flexible Python web framework used to build modern web applications and deploy machine learning models with ease. At GrepUp Academy, we train students to use Flask for creating dynamic websites, REST APIs, and ML model deployment — from setting up routes and templates to connecting with databases and front-end tools. It's the perfect starting point for anyone looking to turn their Python skills into full-fledged, real-world web applications.



**Hadoop** is an open-source framework used to store and process massive amounts of data across distributed computer systems — making it a core technology in Big Data. At GrepUp Academy, we teach students how Hadoop works through its key components like HDFS (storage) and MapReduce (processing), along with tools like Hive and Pig. With hands-on projects and real-world examples, learners gain the ability to manage large-scale data and understand how big tech handles data at scale.



**Apache Spark** is a lightning-fast open-source engine for big data processing and analytics — capable of handling large-scale data across clusters with ease. At GrepUp Academy, we teach students how to work with Spark using PySpark, covering core concepts like RDDs, DataFrames, Spark SQL, and real-time data streaming. With hands-on projects and real datasets, learners gain practical experience in processing and analyzing big data efficiently — a crucial skill for careers in data engineering, analytics, and machine learning at scale.



**Git** is a widely used version control system that helps developers track changes in their code, collaborate on projects, and manage different versions with ease. At GrepUp Academy, we teach students how to use Git effectively — from initializing repositories and committing code to branching, merging, and resolving conflicts. Whether you're working solo or in a team, mastering Git ensures that your code stays organized, recoverable, and ready for real-world collaboration.

# Necessary Tools & Libraries



**AWS** (Amazon Web Services) is the world's leading cloud computing platform, offering scalable and secure services for storage, computing, databases, AI, and more. At GrepUp Academy, we train students to understand the fundamentals of cloud architecture, work with core services like EC2, S3, Lambda, and deploy real-time applications in the cloud. Whether you're a data scientist, web developer, or aspiring cloud engineer, mastering AWS opens the door to top-tier career opportunities in the tech industry.



**Google BigQuery** is a powerful, serverless data warehouse that allows you to analyze massive datasets using SQL — quickly, securely, and at scale. At GrepUp Academy, we teach students how to use BigQuery to connect with cloud data sources, run lightning-fast queries, and visualize insights using tools like Looker Studio and Colab. Whether you're working on analytics, machine learning, or business intelligence, BigQuery is a must-know tool for handling real-world big data efficiently and professionally.



**Plotly** is a powerful Python library for creating interactive and highly customizable data visualizations — perfect for dashboards, reports, and web applications. At GrepUp Academy, we teach students how to use Plotly to build stunning charts like line graphs, bar plots, scatter plots, and even 3D visuals, all with interactivity that brings data to life. Whether you're working on data science projects or building analytics tools, Plotly helps you present insights in a way that's both clear and engaging.



**XGBoost** (Extreme Gradient Boosting) is one of the most powerful and widely-used machine learning algorithms for building high-performance predictive models. Known for its speed and accuracy, XGBoost is a favorite in real-world projects and Kaggle competitions. At GrepUp Academy, we teach students how to use XGBoost effectively — from understanding gradient boosting concepts to hyperparameter tuning, feature importance, and model evaluation — helping them build robust, scalable ML solutions that deliver real results.



**MongoDB** is a modern NoSQL database designed to handle unstructured and semi-structured data with high speed, flexibility, and scalability. Unlike traditional SQL databases, MongoDB stores data in dynamic JSON-like documents, making it ideal for real-time applications, big data, and fast-growing web platforms. At GrepUp Academy, we train students to work with MongoDB from the basics to advanced — including CRUD operations, schema design, indexing, and aggregation pipelines — so they can build and manage powerful database-driven applications with ease.

# Necessary Tools & Libraries

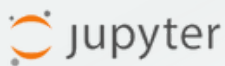


Visual Studio Code

**Visual Studio Code** (VS Code) is one of the most popular and lightweight code editors used by developers worldwide for writing clean, efficient code across multiple languages. At GrepUp Academy, we train students to use VS Code effectively – from setting up extensions, debugging code, and using integrated Git to customizing their workflow for Python, Web Development, and Data Science projects – making coding faster, smoother, and more professional.



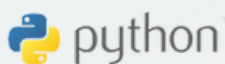
**BeautifulSoup** is a powerful Python library used for web scraping – allowing you to extract data from websites and turn unstructured HTML into clean, usable information. At GrepUp Academy, we teach students how to use BeautifulSoup step-by-step to navigate, search, and scrape web content effectively, making it an essential tool for data gathering in real-world projects like job listings, product reviews, and market research.



**Jupyter** Notebook is an interactive coding environment that lets you write, run, and visualize Python code in one place – making it ideal for learning, data analysis, and project documentation. At GrepUp Academy, we train students to use Jupyter efficiently for writing clean code, creating visualizations, adding notes, and building end-to-end data science projects that are both functional and presentation-ready.



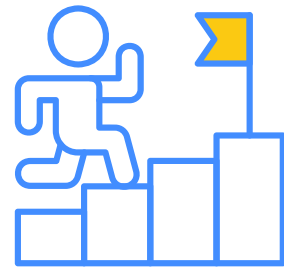
**Google Colab** is a cloud-based platform that lets you write and run Python code directly in your browser – with no installation required and free access to GPUs. At GrepUp Academy, we teach students how to use Colab for building and testing real-world data science and machine learning projects, collaborating easily, and speeding up model training with powerful hardware – making learning smooth, flexible, and efficient.



**Python** is one of the most beginner-friendly yet powerful programming languages used across Data Science, AI, Web Development, and Automation. At GrepUp Academy, we teach Python from the ground up – starting with basics like variables, loops, and functions, and progressing to advanced topics like object-oriented programming, libraries, and real-world projects. Our hands-on approach ensures that every student not only understands Python but can use it to solve real problems confidently.



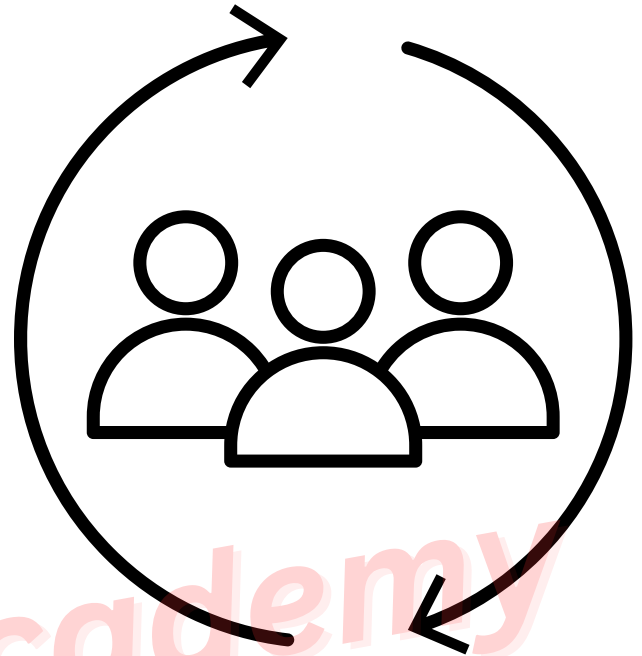
# Top Hiring Companies



*Our students at GrepUp Academy are hired by some of the most respected and fastest-growing companies in the tech, analytics, and software sectors. From established multinational firms to cutting-edge startups, employers are constantly looking for skilled professionals who can solve real-world problems using data, code, and creativity. With our hands-on training, job-focused curriculum, and interview preparation support, learners become confident and job-ready – and many go on to secure roles with impressive salary packages and long-term growth potential.*

# Contact Support

*At GrepUp Academy, we believe in supporting our students at every step of their learning journey. Whether you have questions about a course, need help choosing the right path, or want guidance on placements – our team is just a message away. You can reach out to us anytime through our official WhatsApp, email, or contact form. Your success is our priority, and we're committed to providing the mentorship, feedback, and personal support you need to grow confidently in your tech career. Let's build your future, together.*



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