Upflairs
...because winning takes it all

DATA SCIENCE WITH MACHINE LEARNING & AI

python™

pandas

scikit learn

matplotlib

NumPy

OOPS

SQL

Flask

seaborn

GitHub

TensorFlow

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A Brief About UPFLAIRS

UpFlairs is an innovative **educational technology** company with a clear mission to elevate the skills and employability of students throughout India.

Our dedicated team is committed to fostering the next generation of tech talent, equipping them with cutting-edge skills in emerging technologies and has educated more than 47K students all over the globe including IITs, NITs, Deemed Universities and other colleges.

We offer the courses that are most trending technologies of the recent era in the fields like **AI/ML, Data Science, Cloud Computing, DevOps, Full Stack Web Development, Embedded Systems, IoT, and Robotics.** These courses are meticulously designed to provide students with the practical skills and knowledge required to excel in tech-driven careers, making them not just job-ready but industry leaders of tomorrow.

We are not only limited to training the youth of the country but also provide Lab setups to various Colleges and Universities and Project solutions to other companies for the domains like **AI-ML, IOT , ROBOTICS AND CLOUD**.

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Career Opportunities In DATA SCIENCE with Machine Learning & AI

Data Scientist

Analyzes data to extract insights and build predictive models for informed decision-making.

Machine Learning Engineer

Develops and deploys machine learning models for real-world applications.

Data Analyst

Gathers, cleans, and visualizes data to provide actionable insights for businesses.

Business Intelligence Analyst

Creates data reports and visualizations to monitor and inform business performance.

Data Engineer

Manages data collection, cleaning, and transformation for analysis.

AI Researcher

Advances artificial intelligence by developing new algorithms and models.

NLP Engineer

Develops language algorithms for chatbots, sentiment analysis, and translation.

Python Developer

Codes, tests, and maintains software, specializing in web development, data analysis, or automation.

Who Should Go for This **DATA SCIENCE WITH MACHINE LEARNING & AI?**

College Student

Start shaping your career right from college time by learning in-demand skills like Data Science with Machine Learning & AI.

Graduate

Time for you to upskill, prepare yourself for a bright future, and kickstart a career in Data Science with Machine Learning & AI.

College Dropout/Job Seeker

Not sure which career is right for you? Not finding any jobs? Learn Data Science with Machine Learning & AI with us to land your first job.

Freelancer

Whether you're already a freelance Data Scientist or looking to launch your career in freelancing, expertise in Machine Learning & AI is the most lucrative skill set for freelancers in the data science domain.

Looking to Switch Career

Not satisfied with your current job profile? Switch to Machine Learning & AI, an easy-to-learn, most impressive, and highly-paid skill.

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Why Learn DATA SCIENCE WITH MACHINE LEARNING & AI With Upflairs Only?

Trusted by Learners

Our training and support system intrigue learners.

Expert Trainers

Professional Trainers having experience of delivering more than 30k students. We ensure the high quality training always aimed at career building.

Completely Practical-Oriented

We offer 100% practical training with regular assessment, assignment and projects.

Industry-Recognized Certification

The certificate received by the learners on course completion is valid nationally and internationally. You can easily share , add it to your resume and explore great opportunities.

Online & Offline Batches

You can upskill yourself from anywhere by joining our live training batches Also we provide classroom training in Jaipur.

Career Assistance

We help you build a great career as a developer. Our team offers you career guidance, pepares you for interview, and assists you in finding job.

Hands-On Projects

You will get to work on multiple projects during the training so that you can gain some experience.

Comprehensive Curriculum

The course includes most comprehensive Curriculum, covering all breadths and depths in detail.

DATA SCIENCE WITH MACHINE LEARNING & AI		
Duration – 45 Days/6Weeks		
Week 1 (12 Hours)	**INTRODUCTION**	• Introduction with **AI & Machine Learning** • Data Science vs Data Engineering vs Data Analysis vs AI • Use of Data in the world of AI • Connecting with Upflairs Community • Basic Linux/Windows Commands • Setting Up GITHUB & Google Colab/Kaggle
	PYTHON OVERVIEW	• Command line & Script based Python Programming • Python Keywords, Data Types, Operators • Conditional/Looping/Error Handling in Python • Comprehensions • Python User Defined Functions • Python Generators • Lambda Expressions • Python Modules: Usage and Installation • Understanding the OOP of Python • GUI Development with Python
Week 2 (12 Hours)	**Mini Project**	***Project :*** • ***"ATM simulation project"*** • ***"BMI calculator"***
	GIT & GITHUB	• What is GitHub? • Understanding repositories, commits, and branches. • Creating a GitHub account. • Creating a new repository. • Cloning a repository. • Making commits. • Pushing changes to GitHub. • Pulling changes from a repository. • Creating and switching branches.
	FLASK	• Familiarity with HTML and CSS. • What is Flask? • Setting up a Flask environment. • Creating your first Flask app ("Hello, World!"). • Understanding routes and URLs. • Dynamic routes and URL parameters. • Using route decorators • Introduction to Jinja2 templating. • Rendering HTML templates. • Passing data from Flask to templates. • Creating and processing HTML forms. • Handling POST and GET requests. • Validating form data. • Structuring a Flask project. • Implementing basic CRUD operations. • Introduction to sqlite3 or mysql.

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		• Setting up a database connection.
	Capstone Project	***Capstone Project 1: "CLI Based Chat Application"***
Week 3 (12 Hours)	**NUMPY IN PYTHON**	• What is numpy? • Why is numpy introduced on the list? • Difference between numpy and python list. • Creating numpy array 1D, 2D, 3D Array. • Accessing item from array using indexing, • Data Manipulation in Array. • Searching and filtering in Numpy array. • Function to generate quick numpy arrays like (zero, ones, linspace, random) • Aggregation functions in numpy. • Understand the difference between argmin and argmax. • Understand the difference between argsort and sort
Week 4 (12 Hours)	**PANDAS**	• What are pandas? • Overview of pandas • Installation of pandas • Data manipulation • Data transformation • Data cleaning • Missing value imputation • Redundant value handling. • Sorting, filtering • Understand about Series and Dataframe • Series: Creating, Indexing, and Basic Operations • DataFrame: Creating, Indexing, and Basic Operations • DataFrame vs. Series: Differences and Use Cases • Reading and Writing CSV, Excel, JSON, and other file formats • Functions in pandas (head(), tail(), info(), describe(),isnull(), dropna(), fillna(),loc[], iloc[],sort_values(), sort_index(),groupby(),agg(),concat(),apply(),map(),merge()
	DATA VISUALIZATION	• Data is Beautiful…!!! • Visualization Libraries in Python • MATPLOTLIB PYPLOT: line, scatter, pie, box, area etc • Decorating the plots using Matplotlib (labels, colors, markers, legend, grids, figure sizes etc) • The Subplots and axes in matplotlib: Showing Images • Pandas Visualization: Basic Plots • bar, barh, hist, box, kde, density, area, scatter, pie plots • Plotting with Missing Data • Easy and advanced Data Visualization from Seaborn
Week 5 (12 Hours)	**MACHINE LEARNING SUPERVISED**	• Understanding the concept of Machine Learning • Types of Learning and their sub-categories • Linear Regression, Polynomial Regression • Regression model evaluation metrics. • Logistic Regression • Performance metrics (model evaluation techniques) • Support Vector Machines (SVM) • Kernel Nearest Neighbors (KNN)

		• Decision Trees Classifier • Random Forest Classifier • Naive Bayes with Bayes theorem • Ensemble Learning - Voting & Bagging
	Mini Project	***Project :*** • ***Email spam & ham classification*** • ***Old bike price prediction*** • ***Disease prediction***
Week 6 (12 Hours)	**MACHINE LEARNING UNSUPERVISED**	• Introduction of unsupervised learning. • Clustering analysis. • Clustering or grouping. • Distance calculation method. • Euclidean distance method. • K-means • Model evaluation method in unsupervised • Dunn index and silhouette score.
	Capstone Project	***Capstone Project 2: "Farmer Guider AI App"***
	ARTIFICIAL NEURAL NETWORK	• Concept of Deep Learning & Neural Network • What is ANN? • The basic terminology – Layers, weights, biases, activation functions, losses, optimizers, learning rate • The Concept of Forward & Backward Propagation • Using Keras Library for ANN • Building and Compiling Sequential Neural Network Mode
	Capstone Project	***Capstone Project 3: "Loan Approval System Application"***
	COMPUTER VISION WITH CNN	• What is computer vision • Real-world use cases of computer vision. • Understanding CNN working process • Filters, activation function, pooling layers, • Flatten layers, CNN architecture, image feature extraction, • CNN architecture implementation. • Image classification. • Transfer learning techniques • Object detection: Localization using yolo.
	Mini Project	***Project :*** • ***Dog cat image classification*** • ***MNIST DATASET***
	NATURAL LANGUAGE PROCESSIN G	• What is NLP? Linguistic to Natural Language! • NLTK in Python for Text Processing • Text to Speech and Speech to Text Modules in Python • Optical character recognition (OCR): Text recognition. • Generating Word Clouds

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	NATURAL LANGUAGE PROCESSING WITH RNN	• What is RNN • How RNN is different from ANN • Types of RNN • Text cleaning steps, stemming and lemmatization, tokenization, stop words, pos tagging. Bag of words, tfidf, embedding layer. • The Concept of Long-Short-Term Memory (LSTM) • LSTM-based Neural Networks for Future Prediction!! • GRU.
	GENERATIVE AI	• What is Generative AI? • Real-world application of Generative AI. • Encoder and Decoder Based Architecture understanding, • Building a Language Translator using an encoder and decoder-based architecture using LSTM • What are LLM models? • How the LLM model works, • Learn about the LLM model working process and generate the data. • Transformers Architecture understanding • BERT and GPT model architecture • NER extraction and text summarization using a pre-trained model
	Capstone Projects	***Capstone Project:*** • ***Simple Apps using OpenAI and Ollama*** • ***Maths gpt – Solving Your Maths Problem*** • ***Chatbots with convo history*** • ***Simple App Using NIMNVIDIA***

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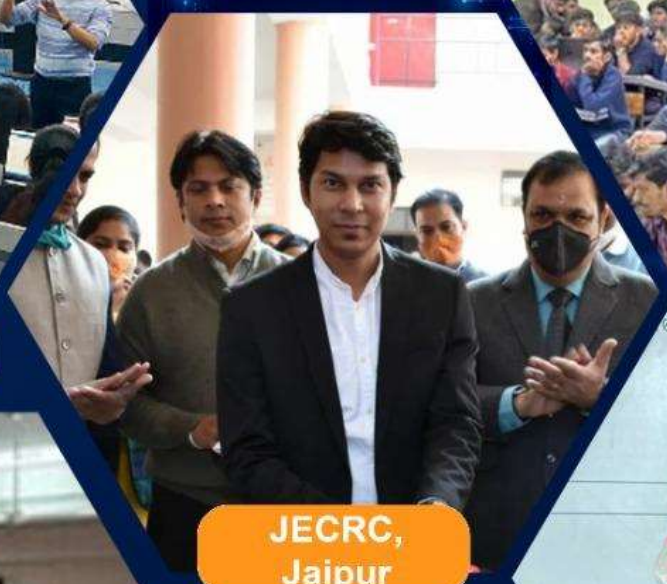
Glance Upflairs

NIT, Jalandhar

Delhi Technical University

NIFFT, Ranchi

Banasthali Vidyapith



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