COURSE BROCHURE

Beginner to Pro | Live | Practical | AI-Powered

skillcrafto

TRAINING | PRACTICE | DEVELOPMENT

DATA SCIENCE

with AI & Generative AI

From Beginner to Pro: the complete course for a high-income data career

- Live Interactive Classes
- Latest Gen AI Tools
- Real-World Projects
- Practical Training
- Certification
- Job Assistance

Python | SQL | Machine Learning | Deep Learning | GenAI

Training | Practice | Development

www.skillcrafto.com

admin@skillcrafto.com | +91 63965 83582 | @skillcraftoofficial

00 About SkillCrafto

Training | Practice | Development

SkillCrafto is an education platform built for learners who want real, job-ready skills, not just certificates. Our flagship programme, **Data Science with AI**, takes you from beginner to professional through live teaching, hands-on practice and real-world projects.

Every module is designed around what employers and clients actually need: Python, statistics, SQL, data visualization, Power BI, machine learning, deep learning, NLP, MLOps and the latest Generative AI tools that make modern data professionals faster and more creative.

Learn it. Practice it. Get paid for it.

Our mission: make high-quality data skills practical, affordable and career-focused.

1 TRAINING

Structured live classes with expert mentors, covering the full data science pipeline step by step.

2 PRACTICE

Assignments, quizzes, case studies and live projects so every concept is applied immediately.

3 DEVELOPMENT

Portfolio building, GitHub, personal branding, communication and interview preparation.

4 CAREER SUPPORT

Resume help, mock interviews, freelancing guidance and job-assistance support.

Who is this programme for?

- Students and graduates looking for a high-demand career in data and AI
- Job seekers and career switchers entering data science and analytics
- Working professionals (IT, finance, marketing, operations) who want to upskill with data and AI
- Freelancers who want to add paid, in-demand analytics and AI services
- Business owners and managers who want to make smarter, data-driven decisions

00 Course Contents

Data Science with AI: everything inside the programme

01	Fundamentals of Data Science & AI	Page 10
02	Python Programming for Data Science	Page 11 - 13
03	Statistics, Probability & Maths for ML	Page 14 - 15
04	Excel & Google Sheets for Analysis	Page 16
05	SQL & Databases	Page 17 - 18
06	Data Wrangling & Exploratory Analysis	Page 19 - 20
07	Data Visualization & Storytelling	Page 21
08	Power BI & Tableau	Page 22 - 23
09	Machine Learning	Page 24 - 26
10	Deep Learning	Page 27 - 28
11	Natural Language Processing	Page 29 - 30
12	Time Series & Advanced Analytics	Page 31
13	Generative AI & LLMs	Page 32 - 34
14	Model Deployment & MLOps	Page 35 - 36
15	Big Data & Data Engineering Basics	Page 37
16	Portfolio, Kaggle & Case Studies	Page 38 - 39
17	Real-World Projects	Page 40 - 41
18	Interview Preparation & Internship	Page 42
19	Tools You Will Master	Page 43
20	Certification & How to Enrol	Page 44

AI is built into every module, with a dedicated Generative AI masterclass on pages 32 - 34.

00 What is Data Science?

Turning raw data into decisions, predictions and intelligent products

Data science combines programming, statistics, domain knowledge and machine learning to extract insight from data. It covers collecting and cleaning data, exploring patterns, building predictive models, communicating results and deploying solutions that businesses can actually use.

Today, Generative AI adds a new layer: faster research, automated coding and reporting, natural-language analytics and intelligent assistants built on your own data. Modern data professionals use both classical machine learning and GenAI to deliver more in less time.

Traditional reporting	Data Science with AI
Looks backwards at what happened	Predicts what will happen next
Manual spreadsheets and static reports	Automated pipelines and live dashboards
Decisions based on gut feeling	Decisions backed by models and experiments
Limited to small, structured data	Handles text, images and large-scale data
Slow, repetitive analysis work	AI-assisted coding, insights and reporting

Skills you will master

Python · Statistics · SQL · Excel · Data Cleaning · EDA · Data Visualization · Power BI · Tableau · Machine Learning · Deep Learning · NLP · Computer Vision · Time Series · Generative AI & LLMs · RAG & AI Agents · MLOps · Cloud & Big Data · Git & GitHub · Storytelling

Great data careers are built on skills, not certificates. At SkillCrafto we do not just teach what data science is. We train you to apply it, so you can build real models, land a high-paying job or start freelancing.

00

Why Data Science is the Ultimate Career

High demand, flexible paths and strong growth

Every business now collects data, and every business needs people who can turn it into decisions. From start-ups to global enterprises, organisations are investing in analytics, machine learning and AI, and many report a shortage of professionals who can do this work well.

1

In-demand skills

Python, SQL, machine learning, statistics, visualization and GenAI appear in a large share of data job listings.

2

Many career paths

Start as an analyst, then specialise in ML, AI engineering, NLP, BI or data engineering as you discover your strengths.

3

Work anywhere

Skills are universal, opening doors to jobs in India and abroad, remote roles, consulting and freelancing.

4

Faster growth

Impact is measurable, so strong performers move up quickly in product companies, start-ups and consulting firms.

5

Start your own thing

Build data products, analytics consultancies, AI tools or your own personal brand with the same skills.

6

Future-proof

AI keeps expanding across every industry, and people who can build, evaluate and explain AI stay valuable.

"Your journey in data science starts with curiosity, but with skills and dedication it can take you to extraordinary heights."

00

What Could Your Career Look Like?

Eight high-growth roles you can step into

1

Data Analyst

Cleans and analyses data, builds dashboards and reports, and helps teams make faster, better decisions.

2

Data Scientist

Builds statistical and machine learning models to predict outcomes, solve business problems and guide strategy.

3

Machine Learning Engineer

Turns models into reliable, scalable systems with pipelines, APIs and monitoring in production.

4

AI / GenAI Engineer

Builds LLM apps, RAG systems and AI agents that automate work and answer questions from company data.

5

BI Developer

Designs Power BI and Tableau dashboards and data models that leaders use every day.

6

Data Engineer

Builds the pipelines, warehouses and ETL workflows that deliver clean, trusted data at scale.

7

NLP / Computer Vision Specialist

Works on text, speech and image problems such as chatbots, document AI and visual inspection.

8

Freelancer / Consultant

Offers analytics, automation and AI services to multiple clients and builds an independent business.

00 Data Science: Scale & Scope

Every sector needs skilled data professionals

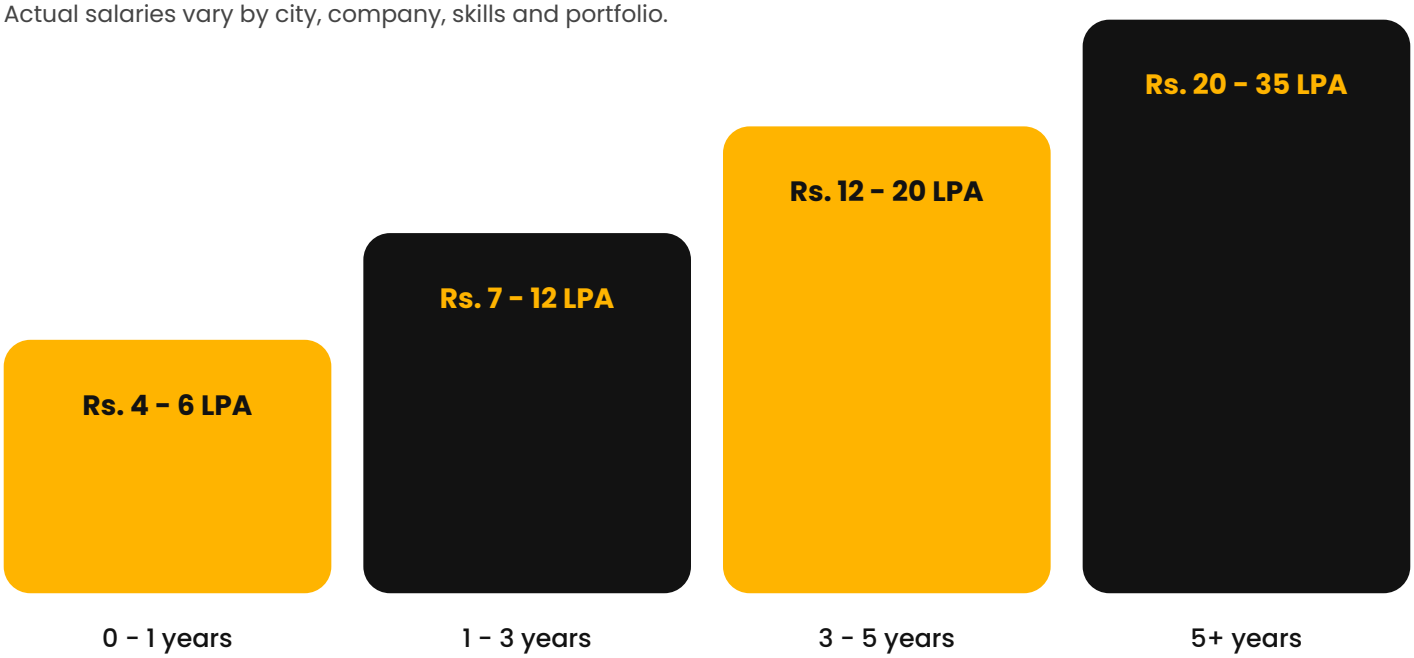
From e-commerce, healthcare and banking to education, telecom and entertainment, every industry now depends on data and AI. Data science also offers freelancing, remote work and entrepreneurship, making it one of the most flexible and future-proof careers available today.

Where data science is used

E-commerce | Banking & Finance | Healthcare | Education | Telecom | Retail | Insurance | Travel | Manufacturing | Logistics | Media & OTT | Marketing | Real Estate | Start-ups | Government

Salary growth in data science (India, indicative per year)

Actual salaries vary by city, company, skills and portfolio.



As you gain skills and experience, you move into advanced roles with greater responsibility, bigger projects and better pay. The right skills make the difference.

00

Why Choose SkillCrafto?

Practical learning approach built for results

1

Practical Learning Approach

Hands-on quizzes, assignments and real-world projects so you gain skills, not just theory.

2

Live Interactive Classes

Learn directly from industry experts in live sessions and clear doubts on the spot.

3

AI-First Curriculum

Latest Generative AI tools taught inside every module for faster, smarter data work.

4

Portfolio-Building Projects

Work on live-style projects that strengthen your GitHub and portfolio for employers and clients.

5

Career Bootcamp

Technical revision, case studies, resume building and mock interviews for job readiness.

6

Job Assistance

Complete support from resume preparation and LinkedIn to interview guidance.

7

Industry-Relevant Certification

A SkillCrafto certificate that proves your training, practice and project work.

8

Doubt Resolution

Every doubt matters. Ask mentors directly and get concepts clear throughout your journey.

00

Programme Runway

Your step-by-step journey from beginner to job-ready

1

PHASE 1

Python, Statistics & Excel

Learn Python from scratch, the statistics behind data science and spreadsheet analysis for everyday business data.

2

PHASE 2

SQL, Data Wrangling & Visualization

Query databases, clean data with pandas, explore patterns and tell stories with charts.

3

PHASE 3

Power BI, Tableau & Machine Learning

Build dashboards and train regression, classification, clustering and recommendation models.

4

PHASE 4

Deep Learning, NLP & Time Series

Work with images, text and forecasts using neural networks, transformers and statistical models.

5

PHASE 5

GenAI, MLOps & Big Data

Build RAG apps and AI agents, deploy models with Docker and APIs, and learn data pipelines at scale.

F

FINAL

Projects, Interview Prep & Certification

Complete capstone projects, join the 7-day career bootcamp, a mock placement drive and earn your certificate.

01 Fundamentals of Data Science & AI

Orientation + the strategic foundation every data professional needs

Orientation & Kickoff

- Kickstarting your journey as a data scientist
- Networking & collaboration session
- Meet your mentors, batch and learning roadmap
- Setting up your workspace: Python, Jupyter and GitHub

Data Science in the AI Era

- How AI and Generative AI are changing analytics and ML workflows
- Where AI helps (speed, ideas, scale) and where human judgement wins
- Building your personal AI toolkit from day one

Core Foundations

- Introduction to Data Science, Analytics and AI
- Data Science vs Data Analytics vs Machine Learning vs AI
- Scope of Data Science & the latest industry trends
- Exploring career opportunities and job roles
- The data science lifecycle: problem, data, model, deploy
- Structured, semi-structured and unstructured data
- Framing business problems and success metrics
- Data-driven decision making basics

Practical Work

- Case teardown: analyse how a real company uses data
- Frame a data science problem with goal, data and metrics
- Create your personal 6-month learning plan

BY THE END OF THIS MODULE

You will understand how data, statistics, ML and AI fit into one system, and be ready to frame problems with clear goals.

02

Python Programming - Getting Started

Learn the language of data science from zero, step by step

Setup & Basics

- Installing Python, Anaconda, Jupyter Notebook and VS Code
- Working in Google Colab (free GPU)
- Variables, data types and operators
- Input / output and type casting
- Comments, naming rules and good habits

Functions & Modules

- Defining functions: arguments, *args, **kwargs, return
- Variable scope
- lambda, map, filter and reduce
- Recursion basics
- Modules, packages and pip

Practice Projects

- Number guessing game
- Simple calculator and unit converter
- Challenge exercises 1 to 3 (practice tasks)

Control Flow

- if / elif / else decision making
- for and while loops, break, continue, pass
- range, enumerate and zip
- Nested loops and pattern problems
- Writing readable, bug-free logic

Data Structures

- Lists, tuples, sets and dictionaries
- Indexing, slicing and sorting
- List and dictionary comprehensions
- Strings and string methods
- Choosing the right data structure

HANDS-ON PRACTICE

Every topic is taught live with demonstrations, assignments and mentor feedback, so you practise each skill before moving on.

02

Python – OOP, Files & APIs

Write structured programs and connect to real-world data

Object-Oriented Programming

- Classes and objects
- Constructors, __init__ and self
- Inheritance and polymorphism
- Encapsulation and dunder methods
- Designing small reusable classes

Files & Data Formats

- Reading and writing TXT, CSV, JSON and Excel files
- os and pathlib for file handling
- Regular expressions (regex) for text patterns
- Working with dates and times (datetime)

APIs & Web Data

- Using the requests library
- Working with REST APIs and JSON
- Web scraping with BeautifulSoup
- Selenium basics for dynamic pages
- Ethical scraping, robots.txt and legal basics

Errors & Debugging

- try / except / finally
- Raising custom exceptions
- Logging and debugging tools
- Virtual environments and dependency management

HANDS-ON PRACTICE

Every topic is taught live with demonstrations, assignments and mentor feedback, so you practise each skill before moving on.

02

Python – Problem Solving, Clean Code & AI

Build coding confidence and ship neat, reviewable code

Clean Code & Workflow

- PEP 8 style guide and docstrings
- Git and GitHub basics: commit, push, pull
- Branching and pull requests
- Jupyter notebook best practices
- Organising a project folder

Problem Solving

- Arrays, stacks, queues and hash maps
- Time and space complexity intro
- 50+ coding challenges
- Interview-style Python questions

Mini Projects

- Expense tracker (command line, OOP)
- Web scraper that saves data to CSV
- Live API dashboard script
- Quiz app with file storage

AI-Assisted Coding

- Using ChatGPT, Claude and Copilot to write, explain and debug code
- Prompt patterns for coding tasks
- Reviewing AI code for bugs and security
- Never paste secrets or client data into AI tools

BY THE END OF THIS MODULE

You will write clean Python, solve problems with confidence and use AI as a coding partner, not a crutch.

03 Statistics & Probability – Foundations

The maths behind every model, explained in plain language

Descriptive Statistics

- Mean, median and mode
- Variance and standard deviation
- Percentiles, quartiles and IQR
- Outliers: how to spot and treat them
- Skewness and kurtosis
- Covariance and correlation

Python for Statistics

- NumPy, SciPy and statsmodels in action
- Simulating distributions and sampling
- Using AI to explain concepts and check your calculations

Probability

- Basic probability rules
- Conditional probability and Bayes theorem
- Random variables
- Permutations and combinations
- Expected value and risk

Distributions

- Normal, Binomial, Poisson, Uniform and Exponential
- Z-scores and standardisation
- Central Limit Theorem
- Sampling methods and sampling bias
- Standard error and confidence intervals

HANDS-ON PRACTICE

Every topic is taught live with demonstrations, assignments and mentor feedback, so you practise each skill before moving on.

03 Inferential Statistics, A/B Testing & Maths for ML

Make decisions from data with evidence, not guesswork

Hypothesis Testing

- Null and alternative hypotheses
- p-value and significance level
- Type I and Type II errors
- z-test, t-test and paired t-test
- Chi-square test and ANOVA
- Non-parametric tests

Maths for Machine Learning

- Vectors and matrices
- Dot product and matrix operations
- Eigenvalues and eigenvectors (intuition)
- Derivatives and gradients
- How gradient descent learns

A/B Testing & Experiments

- Designing a clean experiment
- Sample size and statistical power
- Interpreting and reporting results
- Common pitfalls: peeking and multiple testing

Practical Lab

- Run an A/B test on a marketing dataset
- Build a one-page statistical findings report

BY THE END OF THIS MODULE

You will test ideas statistically, quantify uncertainty and understand the maths that powers machine learning.

04 Excel & Google Sheets for Data Analysis

The everyday tool of every analyst, mastered properly

Excel Essentials

- Interface, formatting and cleaning data
- Sorting, filtering and data validation
- Conditional formatting
- Remove duplicates and text-to-columns
- Named ranges and tables

AI in Spreadsheets

- Using Copilot and ChatGPT to write formulas
- AI-assisted data cleaning and summaries

Practice Project

- Sales performance dashboard with KPIs

Formulas & Functions

- IF, IFS, AND, OR
- VLOOKUP, XLOOKUP and INDEX-MATCH
- SUMIFS, COUNTIFS, AVERAGEIFS
- Text, date and logical functions
- Dynamic array functions

Analysis & Dashboards

- Pivot tables, pivot charts and slicers
- Power Query for quick ETL
- What-if analysis, Goal Seek and Solver
- Building an interactive dashboard

BY THE END OF THIS MODULE

You will clean, analyse and present business data in spreadsheets quickly and accurately.

05

SQL & Databases – Core

Talk to databases and pull the exact data you need

Database Foundations

- RDBMS concepts, tables, rows and keys
- ER diagrams and relationships
- Normalisation basics
- Installing MySQL / PostgreSQL
- SQL vs NoSQL

Querying

- SELECT, WHERE, ORDER BY, LIMIT
- LIKE, IN, BETWEEN and NULL handling
- Aggregate functions
- GROUP BY and HAVING
- Aliases, DISTINCT and CASE

Joins & Subqueries

- INNER, LEFT, RIGHT, FULL, SELF and CROSS joins
- Subqueries and nested queries
- Common Table Expressions (CTEs)
- UNION, INTERSECT and EXCEPT

Data Modification

- INSERT, UPDATE and DELETE
- CREATE, ALTER and DROP
- Constraints and indexes intro
- Transactions and ACID properties

HANDS-ON PRACTICE

Every topic is taught live with demonstrations, assignments and mentor feedback, so you practise each skill before moving on.

05

SQL - Advanced Analytics

Window functions and real analytics queries

Window Functions

- ROW_NUMBER, RANK and DENSE_RANK
- LAG and LEAD
- Running totals and moving averages
- PARTITION BY and NTILE

NoSQL, Python & AI

- MongoDB basics
- SQLAlchemy and connecting databases to pandas
- Cloud warehouse intro: BigQuery
- Text-to-SQL with AI and reviewing its output

Performance & Design

- Indexes and how they speed up queries
- Reading EXPLAIN query plans
- Views and stored procedures
- Query optimisation habits

Analytics Use Cases

- Cohort and retention analysis
- Funnel analysis
- RFM customer scoring
- Top-N per group
- Year-on-year and month-on-month growth

Practical Lab

- Solve 50 interview-style SQL problems
- Complete a business case on an e-commerce database

BY THE END OF THIS MODULE

You will write confident, optimised SQL for analytics and clear any SQL interview round.

06

Data Wrangling - NumPy & Pandas

Turn messy raw data into clean, analysis-ready tables

NumPy

- Arrays, shapes and data types
- Indexing and slicing
- Vectorisation and broadcasting
- Random numbers and linear algebra functions

Data Cleaning

- Detecting and handling missing values
- Finding and removing duplicates
- Outliers with IQR and z-score
- Fixing data types and conversions
- String cleaning and regex
- Dates, times and time zones

Pandas Essentials

- Series and DataFrames
- Reading CSV, Excel, SQL and JSON
- loc, iloc and boolean filtering
- Sorting, apply, map and lambda
- groupby and pivot_table
- merge, join and concat

Practice

- Clean a messy real-world dataset end to end
- Reshape data: melt, pivot and stack
- Use AI to speed up cleaning code, then verify it

HANDS-ON PRACTICE

Every topic is taught live with demonstrations, assignments and mentor feedback, so you practise each skill before moving on.

06

Exploratory Data Analysis & Feature Engineering

Understand your data deeply before you model it

EDA Workflow

- Start from the business question
- Summary statistics
- Univariate, bivariate and multivariate analysis
- Correlation heatmaps
- Auto-profiling tools (ydata-profiling)

Feature Selection & Imbalance

- Correlation and variance filters
- RFE and tree-based importance
- PCA intro
- Class imbalance: SMOTE and class weights
- Train-test split and data leakage

Feature Engineering

- Encoding: one-hot, label and target encoding
- Scaling: standard and min-max
- Binning and date features
- Interaction and polynomial features
- Basic text features

Practical Lab

- Complete EDA on a customer churn dataset
- Present findings as a short data story
- AI-assisted EDA: faster insights, human validation

BY THE END OF THIS MODULE

You will explore any dataset systematically and build model-ready features with confidence.

07

Data Visualization & Storytelling

Make numbers speak to decision makers

Matplotlib & Seaborn

- Line, bar, histogram, box and scatter plots
- Subplots and customisation
- Heatmaps, pairplots and violin plots
- Styling for reports and presentations

AI for Visualization

- AI to suggest charts and generate plotting code
- AI-written insight narratives (verified by you)

Interactive Visualization

- Plotly and Plotly Express
- Dashboards with Plotly Dash
- Maps and geospatial plots with Folium
- Animated charts

Design Principles

- Choosing the right chart
- Colour use and accessibility
- Avoiding misleading charts
- Storytelling with data
- Writing an executive summary

Practice Project

- Build a visual story from a real dataset

BY THE END OF THIS MODULE

You will turn raw analysis into clear visuals and a narrative that drives decisions.

08

Power BI – Dashboards & DAX

Business intelligence the way companies actually use it

Getting Started

- Power BI Desktop and Service
- Connecting to Excel, SQL and web data
- Power Query transformations
- Data modelling: star schema and relationships

DAX

- Measures vs calculated columns
- CALCULATE, FILTER and ALL
- Time intelligence: YTD and MoM
- Variables and KPIs

AI in Power BI

- Copilot and AI visuals
- Natural-language Q&A on your data

Visuals & Reports

- Cards, matrix, charts and slicers
- Drill-through, tooltips and bookmarks
- Themes and professional layouts
- Row-level security
- Publish, share and schedule refresh

Practice

- Executive sales dashboard
- HR attrition dashboard

HANDS-ON PRACTICE

Every topic is taught live with demonstrations, assignments and mentor feedback, so you practise each skill before moving on.

08 Tableau & Dashboard Projects

Second tool, stronger portfolio

Tableau Essentials

- Connecting to data sources
- Dimensions, measures and marks
- Calculated fields and LOD expressions
- Parameters, filters, sets and groups
- Maps and geographic charts

Dashboards & Stories

- Dashboard actions and interactivity
- Story points
- Publishing on Tableau Public
- Performance tips

Practical Work

- Build two dashboards and publish them
- Choosing the right BI tool for the job

Business Dashboards

- Sales and revenue
- Marketing funnel
- Finance and KPI tracking
- Supply chain and operations

BY THE END OF THIS MODULE

You will design and publish decision-ready dashboards in both Power BI and Tableau.

09

Machine Learning - Foundations & Regression

Teach machines to predict numbers

ML Foundations

- What is machine learning?
- Supervised, unsupervised and reinforcement learning
- The scikit-learn workflow
- Bias-variance trade-off
- Overfitting and underfitting
- Train, validation and test sets; cross-validation

Practice Project

- House price prediction
- Use AI to explain model output in plain language

Regression Models

- Simple and multiple linear regression
- Assumptions and diagnostics
- Polynomial regression
- Ridge, Lasso and ElasticNet
- Gradient descent from scratch

Regression Metrics

- MAE, MSE, RMSE and R-squared
- Residual analysis
- Feature importance
- Basic hyperparameter tuning

HANDS-ON PRACTICE

Every topic is taught live with demonstrations, assignments and mentor feedback, so you practise each skill before moving on.

09

Machine Learning - Classification & Ensembles

Predict categories, risk and behaviour

Classification

- Logistic regression
- K-Nearest Neighbours
- Naive Bayes
- Support Vector Machines
- Decision trees

Evaluation

- Confusion matrix
- Precision, recall and F1
- ROC-AUC and PR curves
- Threshold tuning
- Handling imbalanced classes

Practice Projects

- Customer churn prediction
- Credit risk and loan approval

Ensemble Methods

- Random Forest
- Bagging and boosting
- Gradient Boosting
- XGBoost, LightGBM and CatBoost
- Stacking and voting

Tuning & Pipelines

- GridSearchCV and RandomizedSearchCV
- Optuna for smart tuning
- Pipelines and ColumnTransformer
- Saving models with joblib

HANDS-ON PRACTICE

Every topic is taught live with demonstrations, assignments and mentor feedback, so you practise each skill before moving on.

09

ML - Unsupervised, Recommenders & Explainability

Find hidden patterns and explain your models

Clustering

- K-Means, elbow method and silhouette score
- Hierarchical clustering
- DBSCAN
- Customer segmentation with RFM

Dimensionality & Anomalies

- PCA
- t-SNE and UMAP
- Anomaly detection with Isolation Forest

Recommender Systems

- Content-based filtering
- Collaborative filtering
- Matrix factorisation
- Recommendation metrics

Explainable & Responsible ML

- SHAP and LIME
- Fairness and bias
- Model cards and documentation
- Data privacy basics

Practical Lab

- AutoML with PyCaret
- Complete end-to-end ML project with a final presentation

BY THE END OF THIS MODULE

You will build, evaluate, tune and explain supervised and unsupervised models for real business problems.

10

Deep Learning - Neural Networks

How modern AI learns, from neurons to training loops

Foundations

- Perceptron and neurons
- Activation functions
- Forward and back propagation
- Loss functions
- Optimisers: SGD and Adam
- Learning rate

Frameworks

- TensorFlow and Keras
- PyTorch basics and tensors
- Writing training loops
- Using GPUs on Colab

Practice

- Handwritten digit classifier (MNIST)
- Deep learning for tabular churn data

Training Better Models

- Batch normalisation and dropout
- Regularisation
- Early stopping and callbacks
- Hyperparameter tuning
- TensorBoard

HANDS-ON PRACTICE

Every topic is taught live with demonstrations, assignments and mentor feedback, so you practise each skill before moving on.

10 Deep Learning - CNN, RNN & Transfer Learning

Teach machines to see and to follow sequences

CNN & Computer Vision

- Convolution, filters, padding and pooling
- Architectures: LeNet, VGG and ResNet
- Image classification
- Data augmentation

Transfer Learning

- Pretrained models
- Fine-tuning vs feature extraction
- Object detection with YOLO (intro)
- Image segmentation (intro)

Sequence Models

- RNN, LSTM and GRU
- Deep learning for time series
- Sequence-to-sequence models
- Attention mechanism intro

Practical Lab

- Cat vs dog image classifier
- Plant disease detection
- Deploy a vision model as a simple web app

BY THE END OF THIS MODULE

You will train, fine-tune and deploy deep learning models for images and sequences.

11 NLP – Text Analytics

Make sense of reviews, tickets, emails and documents

Text Preprocessing

- Tokenisation and stopwords
- Stemming and lemmatisation
- Regex for text cleaning
- NLTK and spaCy

Text Representation

- Bag of Words and TF-IDF
- N-grams
- Word embeddings: Word2Vec and GloVe
- Sentence embeddings

Classic NLP Tasks

- Sentiment analysis
- Text classification
- Topic modelling with LDA
- Named Entity Recognition (NER)
- Keyword extraction

Practice Projects

- Spam message detector
- Product review sentiment dashboard

HANDS-ON PRACTICE

Every topic is taught live with demonstrations, assignments and mentor feedback, so you practise each skill before moving on.

11

NLP – Transformers & Applications

The architecture behind today's language AI

Transformers

- Attention and self-attention
- BERT and GPT overview
- Hugging Face Transformers
- Tokenizers and fine-tuning BERT

Applications

- Chatbots
- Text summarisation
- Question answering systems
- Translation
- Semantic search with embeddings

Vector Search

- What embeddings are and why they matter
- Vector databases: FAISS, Chroma and Pinecone
- Similarity search
- Build a semantic search engine

Practical Lab

- Resume screening assistant
- Support ticket classifier
- News summariser app

BY THE END OF THIS MODULE

You will build practical language-AI applications using modern transformer models.

12 Time Series, Forecasting & Advanced Analytics

Predict what happens next and measure what really works

Time Series Forecasting

- Trend, seasonality and stationarity
- Decomposition and smoothing
- Moving averages and exponential smoothing
- ARIMA and SARIMA
- Prophet
- ML for forecasting; MAPE and rolling validation

Advanced Analytics Use Cases

- Churn and Customer Lifetime Value (CLV)
- Marketing analytics and segmentation
- Pricing and demand forecasting
- Fraud and anomaly detection
- Survival analysis (intro)

Practical Lab

- Build a monthly sales forecast with confidence intervals
- Use AI to document assumptions and risks

Causal Thinking

- Correlation vs causation
- Experiment design vs observational data
- Uplift modelling (intro)

BY THE END OF THIS MODULE

You will forecast demand, quantify risk and apply advanced analytics to real business questions.

13

Generative AI & LLMs – Foundations

Understand, prompt and integrate large language models

GenAI Foundations

- What is Generative AI? LLMs, diffusion and multimodal models
- Tokens, context windows and temperature
- Open vs closed models
- ChatGPT, Claude, Gemini, Llama and Mistral

Prompt Engineering

- Role, context, task, format and constraints
- Few-shot and chain-of-thought prompting
- Structured (JSON) outputs
- Reusable prompt libraries
- Evaluating and improving prompts

Working with LLM APIs

- API basics for OpenAI, Anthropic and Gemini
- Keeping API keys safe
- Streaming responses
- Function and tool calling
- Managing cost and latency

Risks & Verification

- Hallucinations and bias
- How to fact-check AI output
- Prompt injection basics
- Privacy: what never to share with AI tools

HANDS-ON PRACTICE

Every topic is taught live with demonstrations, assignments and mentor feedback, so you practise each skill before moving on.

13 Generative AI - RAG, Agents & Fine-Tuning

Ground AI in your own data and let it take action

Retrieval-Augmented Generation (RAG)

- Why RAG, and when to use it
- Chunking and embeddings
- Vector stores
- LangChain and LlamaIndex
- Evaluating RAG quality
- Build a Chat-with-your-PDF app

AI Agents

- Agents, tools and function calling
- Multi-step workflows
- Memory and planning
- Integrating APIs, databases and search

Multimodal AI

- AI image generation and vision models
- Speech-to-text and text-to-speech
- Document understanding and OCR

Fine-Tuning

- Prompting vs RAG vs fine-tuning
- LoRA and PEFT intro
- Preparing training data
- Evaluation with Hugging Face

HANDS-ON PRACTICE

Every topic is taught live with demonstrations, assignments and mentor feedback, so you practise each skill before moving on.

13

Generative AI - Apps, Automation & Ethics

Ship AI products responsibly

Building GenAI Apps

- Streamlit and Gradio interfaces
- Chatbot with memory
- Data-analyst copilot: natural language to pandas / SQL
- Deploy on Hugging Face Spaces

Automation

- n8n, Zapier and Make workflows
- Lead capture to Sheets / CRM to email follow-up
- AI report generators
- AI chatbots for websites and WhatsApp

Ethics, Safety & Compliance

- Copyright, disclosure and brand safety
- Data privacy and consent
- Guardrails and evaluation
- Human-in-the-loop review checklists

AI Career & Freelancing

- GenAI engineer vs data scientist roles
- Packaging AI-enabled services and pricing them
- Capstone: design a complete AI-powered data product

BY THE END OF THIS MODULE

You will build, automate and responsibly deploy GenAI applications on top of your own data.

14 Model Deployment & MLOps

Take models from notebook to production

Deployment Basics

- Saving models with pickle, joblib and ONNX
- Building APIs with Flask and FastAPI
- Streamlit web apps
- Testing APIs with Postman

Git & CI/CD

- Professional Git workflows
- GitHub Actions
- Environment management
- Unit tests with pytest
- Code review habits

Containers & Cloud

- Docker basics and Docker Compose
- AWS, GCP and Azure overview
- Deploying on AWS EC2, Render and Hugging Face
- Serverless basics

HANDS-ON PRACTICE

Every topic is taught live with demonstrations, assignments and mentor feedback, so you practise each skill before moving on.

14

MLOps – Tracking, Monitoring & Pipelines

Keep models healthy after launch

Experiment Tracking

- MLflow tracking and model registry
- DVC for data versioning
- Weights & Biases intro
- Reproducible experiments

Monitoring

- Data drift and concept drift
- Performance monitoring
- Logging and alerts
- Retraining strategies

Practical Work

- Deploy an ML model as an API plus web app
- Track experiments with MLflow
- Write a model monitoring plan

Pipelines

- scikit-learn pipelines
- Airflow intro
- Feature stores overview
- Batch vs real-time inference

BY THE END OF THIS MODULE

You will deploy, track and monitor machine learning systems the way production teams do.

15

Big Data & Data Engineering Basics

Handle data at scale and build reliable pipelines

Big Data Concepts

- Volume, velocity and variety
- Hadoop ecosystem overview
- Distributed computing basics
- Data lake vs data warehouse

ETL & Pipelines

- ETL vs ELT
- Airflow DAGs
- dbt intro
- Data quality checks
- Streaming and Kafka intro

PySpark

- Spark architecture
- DataFrames and Spark SQL
- MLlib intro
- Databricks Community Edition

Cloud Data Platforms

- BigQuery, Snowflake and Redshift overview
- S3 and cloud storage
- Cost basics

Practical Work

- Build an ETL pipeline from API to warehouse to dashboard

BY THE END OF THIS MODULE

You will understand how data flows at scale and build a simple, automated pipeline end to end.

16

Portfolio, Kaggle & Domain Case Studies

Build proof of skill that employers can see

Kaggle & Practice

- Kaggle account, notebooks and datasets
- Starter competitions: Titanic and House Prices
- Learning from top solutions
- Finding datasets for your own projects

GitHub Portfolio

- Clean repositories and README files
- Project structure and documentation
- Notebooks to reports
- Simple portfolio website
- Consistent contribution habits

Case-Study Writing

- Problem, approach, result and impact
- Blogging on Medium and LinkedIn
- Presenting to non-technical stakeholders

Domain Applications

- Banking and finance
- Healthcare
- Retail and e-commerce
- Telecom and OTT
- Marketing and HR analytics

HANDS-ON PRACTICE

Every topic is taught live with demonstrations, assignments and mentor feedback, so you practise each skill before moving on.

16

Business Analytics & Domain Case Studies

Think like an analyst inside a business

Business Case Studies

- Churn prediction for a telecom company
- Credit risk scoring for a bank
- Demand forecasting for retail
- Fraud detection in payments
- Recommendation engine for streaming
- Attrition analysis for HR

Analytics Frameworks

- KPI trees and metrics design
- Funnel and cohort thinking
- RFM and CLV
- Unit economics basics
- OKRs and goal setting

Practice

- Prepare a mini capstone proposal
- Mentor review and improvement plan

Stakeholder Skills

- Requirement gathering
- Data storytelling for executives
- Agile and project management basics
- Documentation and handover

BY THE END OF THIS MODULE

You will connect models and dashboards to real business value and explain your work to any audience.

17 The Real-World Projects

Apply every skill on practical, portfolio-ready assignments

Business Analytics & EDA

Analyse a retail sales dataset

- **Research:** business questions and KPIs
- **Cleaning:** missing values, outliers and types
- **EDA:** trends, segments and seasonality
- **Visuals:** charts that tell the story
- **Insights:** actionable recommendations
- **Report:** one-page executive summary

SQL Analytics

Query an e-commerce database

- **Schema:** tables, keys and relationships
- **Queries:** joins, CTEs and subqueries
- **Windows:** ranking and running totals
- **Cohorts:** retention and funnel analysis
- **Optimise:** indexes and query plans
- **Deliver:** insight document with queries

Dashboard Project

Build an executive KPI dashboard

- **Source:** Excel, SQL and CSV data
- **Model:** star schema and relationships
- **DAX:** measures and time intelligence
- **Design:** clean, interactive layout
- **Publish:** Power BI Service / Tableau Public
- **Present:** walkthrough for stakeholders

Machine Learning

Predict customer churn

- **Data:** cleaning and feature engineering
- **Models:** logistic, forest and XGBoost
- **Tuning:** cross-validation and Optuna
- **Metrics:** precision, recall and AUC
- **Explain:** SHAP-based drivers
- **Action:** retention strategy for the business

Every project is reviewed by mentors, so you finish with work you can proudly add to your portfolio, GitHub, resume and LinkedIn profile.

17 The Real-World Projects

Apply every skill on practical, portfolio-ready assignments

Deep Learning & Vision

Build an image classifier

- **Data:** collection and augmentation
- **Model:** CNN and transfer learning
- **Training:** callbacks and tuning
- **Evaluate:** accuracy and error analysis
- **Deploy:** Streamlit / Gradio web app
- **Document:** README and demo video

NLP Project

Customer feedback intelligence

- **Collect:** reviews or support tickets
- **Clean:** text preprocessing pipeline
- **Model:** sentiment and topic modelling
- **Transformers:** fine-tune a BERT model
- **Dashboard:** themes and trends
- **Recommend:** product and service fixes

Time Series Forecasting

Plan demand for a retailer

- **Explore:** trend and seasonality
- **Baselines:** naive and moving average
- **Models:** SARIMA, Prophet and ML
- **Validate:** rolling-window testing
- **Intervals:** forecast confidence ranges
- **Plan:** inventory and staffing advice

AI Capstone

Build an AI-powered data product

- **Brand voice:** prompt library and guardrails
- **RAG:** chat with company documents
- **Agent:** natural language to SQL analyst
- **Automation:** lead capture and report flows
- **Deploy:** API, app and monitoring
- **Present:** final demo and portfolio review

Every project is reviewed by mentors, so you finish with work you can proudly add to your portfolio, GitHub, resume and LinkedIn profile.

18 Interview Preparation & Internship

Power-packed 7-day career bootcamp

Day 1	Orientation + Resume Building
Day 2	LinkedIn, GitHub & Personal Branding
Day 3	Personality Development & Confidence Building
Day 4	Communication Skills (Written & Spoken)
Day 5	Preparation (HR + Technical: Python, SQL, ML)
Day 6	Job Portals & Application Strategies
Day 7	Mock Placement Drive

Internship & real-world exposure

Get real-world exposure with a power-packed internship: apply your learning to live projects such as data cleaning and analysis, dashboard building, model development and AI workflow automation. Show employers that you are not only trained but also have practical experience.

- Practical assignments on real business briefs
- Mentor feedback on every deliverable
- Portfolio and case-study building
- Freelancing and client-handling guidance

19 Tools You Will Master

The modern data professional's toolkit, with AI at the centre

AI Tools

ChatGPT · Claude · Gemini · Perplexity · GitHub Copilot · LangChain · LlamaIndex · Hugging Face

Machine & Deep Learning

scikit-learn · XGBoost · LightGBM · CatBoost · TensorFlow · Keras · PyTorch · Optuna · SHAP

BI & Spreadsheets

Power BI · Tableau · Excel · Power Query · Google Sheets · Looker Studio

MLOps & Deployment

FastAPI · Flask · Streamlit · Gradio · Docker · MLflow · GitHub Actions · DVC

Programming & Notebooks

Python · Jupyter · Google Colab · VS Code · Anaconda · Git · GitHub

Data & Visualization Libraries

NumPy · Pandas · SciPy · Statsmodels · Matplotlib · Seaborn · Plotly · Folium

Databases & SQL

MySQL · PostgreSQL · MongoDB · SQLAlchemy · BigQuery

Big Data & Cloud

PySpark · Databricks · Airflow · dbt · AWS · GCP basics · Snowflake (intro)

Automation & Collaboration

n8n · Zapier · Make · Postman · Notion · Slack

Tool names belong to their respective owners. Tool versions and features may change over time.

20 Certification & How to Enrol

Prove your skills and begin your journey

A SkillCrafto Training Certificate

After completing the programme, every learner receives a Data Science with AI certificate from SkillCrafto. It recognises your dedication, learning and practical expertise across Python, SQL, machine learning, deep learning and GenAI.

B Internship / Project Certificate

Complete your practical training and project work to earn an internship completion certificate that shows hands-on experience in analysis, model building, dashboards and AI workflow delivery.

How to enrol in 4 simple steps

1 Enquire

Call, email or message us on Instagram.

2 Attend a demo

Join a free demo class and meet the mentors.

3 Register

Choose your batch and complete enrolment.

4 Start learning

Join live classes and begin projects.

Questions? Talk to us

www.skillcrafto.com

admin@skillcrafto.com

+91 63965 83582

@skillcraftoofficial

Batch dates, duration and fees: please contact SkillCrafto for the latest details.

THANK YOU

We are glad you are here

skillcrafto

TRAINING | PRACTICE | DEVELOPMENT

Thank You

for choosing our Data Science course.



FOUNDER & CEO, SKILLCRAFTO

CONTACT US

WEBSITE
www.skillcrafto.com

EMAIL
admin@skillcrafto.com

MOBILE
+91 63965 83582

INSTAGRAM
@skillcraftoofficial

ENROLL NOW | BOOK A DEMO CLASS

You are one step away from your dream career!