alomanx

alocodes
Learn. Code. Placed.

DATA SCIENCE

BROCHURE

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MSME MICRO, SMALL & MEDIUM ENTERPRISES सूक्ष्म, लघु एवं मध्यम उद्यम OUR STRENGTH • हमारी शक्ति
Ministry of MSME, Govt. of India

About Alocodes

Alocodes is an EdTech initiative by Alomonx Technology, created to provide high-quality coding, AI, and cloud training to students, job-seekers, and professionals. We believe that skills matter more than degrees, and our mission is to deliver industry-level training that prepares learners for real-world jobs.

Program Overview

Master the essentials of data analysis, machine learning, and visualization through hands-on projects and expert guidance ideal for anyone aiming to thrive in today's data-driven world.

Why Choose Our Data Science Program?

- Data Science is at the heart of decision-making across industries. Frombusiness analysis to cutting-edge AI models, Data Science professionals are in high demand. Here's why this field is for you:

- High Demand: Every industry relies on data to drive innovation. Lucrative Career: Data Science roles offer some of the best salaries in tech.

- Versatile Skillset: Applicable in tech, healthcare, finance, and more.

Curriculum Overview

- **Module 1 : Python for Data Science**
  - Introduction to Python, Jupyter Notebooks
  - Data types, variables, operators
  - Control structures (if, for, while)
  - Functions, lambda expressions
  - Data structures: Lists, tuples, sets, dictionaries
  - Libraries: NumPy & Pandas (basic data manipulation)
- **Module 2 : Statistics & Probability**
  - Descriptive statistics: Mean, median, mode, variance, standard deviation
  - Probability basics: Independent vs. dependent events
  - Normal distribution, skewness, and kurtosis
  - Hypothesis testing, p-values, confidence intervals
- **Module 3 : Data Visualization**
  - Using Matplotlib: Line plots, bar charts, histograms
  - Using Seaborn: Heatmaps, pair plots, violin plots
  - Plot styling and customization
  - Telling stories with data visuals

♦ **Module 4: Exploratory Data Analysis (EDA)**

- Data cleaning: Handling nulls, duplicates, outliers
- Feature engineering basics
- Correlation analysis
- Case study: EDA on a real dataset (Titanic, Iris, or custom)

♦ **Module 5: SQL & Data Handling**

- SQL basics: SELECT, WHERE, GROUP BY, JOIN
- Querying datasets from SQLite/MySQL
- Integration of SQL with Python via sqlite3 or SQLAlchemy
- Hands-on querying real-world datasets

♦ **Module 6: Machine Learning Algorithms**

- ML pipeline overview: Supervised vs Unsupervised
- Linear & Logistic Regression
- Decision Trees & Random Forest
- K-Means Clustering
- Model evaluation: Confusion matrix, accuracy, recall, precision, F1-score

- **Module 7: Deep Learning Fundamentals**
  - ML pipeline overview: Supervised vs Unsupervised
  - Linear & Logistic Regression
  - Decision Trees & Random Forest
  - K-Means Clustering
  - Model evaluation: Confusion matrix, accuracy, recall, precision, F1-score

Tools, Languages, Platforms

Sample Projects

1. Exploratory Data Analysis (EDA) on Titanic Dataset

- Skills Involved: Data cleaning, visualization, statistical analysis.
- Description: Students can analyze the Titanic dataset to explore patterns in survival rates based on factors like gender, age, passenger class, and fare. They'll create visualizations like bar charts, heatmaps, and box plots to summarize findings.
- Dataset: Titanic Dataset (available on Kaggle).

2. Customer Segmentation Using K-Means Clustering

- Skills Involved: Unsupervised learning, feature scaling, clustering.
- Description: Use customer data (such as annual income, spending score, age) to segment customers into different groups. The project will involve preprocessing the data and applying K-means clustering to identify customer segments.
- Dataset: Mall Customer Dataset (Kaggle).

3. Predicting House Prices

- Skills Involved: Regression, feature selection, data preprocessing.
- Description: Students will predict house prices using data on house features like the number of bedrooms, square footage, location, etc.
- They'll train a linear regression or a decision tree model and evaluate its accuracy.
- Dataset: Ames Housing Dataset or Boston Housing Dataset (Kaggle).

4. Sentiment Analysis on Twitter Data

- Skills Involved: Natural Language Processing (NLP), text preprocessing, classification.
- Description: Using a dataset of tweets, students can build a sentiment analysis model to classify tweets as positive, negative, or neutral. They'll apply techniques like tokenization, stopword removal, and vectorization (e.g., TF-IDF) and use models like Naive Bayes or SVM.
- Dataset: Twitter Sentiment Analysis Dataset (Kaggle or Twitter API).

5. Fraud Detection with Credit Card Data

- Skills Involved: Classification, imbalanced data handling, evaluation metrics.
- Description: Using a credit card transactions dataset, students can build a model to detect fraudulent transactions. Techniques for handling imbalanced data, such as SMOTE (Synthetic Minority Over-sampling Technique), can be applied.
- Dataset: Credit Card Fraud Detection Dataset (Kaggle).

Career Opportunities

By completing our Data Science Program, you'll be ready to take on key roles in the industry, including:

• Data Scientist

• Machine Learning Engineer

• Data Analyst

• Business Intelligence Analyst

• Data Engineer

Hiring Companies:

Our graduates have found opportunities at top companies like:

• Flipkart

• VOIS

• Wipro

• TCS

• Cognizant

• Startups and Fintech Companies

Certificates

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your career to the next level?

Contact us to learn more about our courses, flexible payment plans, and how we can help you achieve your career goals.

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