DATA SCIENCE BROCHURE

Unlock the Power of Data with Hands-on Learning and

Incorporate relevant visuals like graphs, data charts, or students working on laptops with code or data on the screen.

Why Choose Our Data Science Course?

• Data Science is at the heart of decision-making across industries. From business 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.

Course Outline

- ## Python for Data Science
  Python for Data Science involves using Python programming to collect, clean, analyze, and visualize data. It leverages powerful libraries like Pandas, NumPy, Matplotlib, and Scikit-learn for data manipulation and machine learning. Python's simplicity and versatility make it a top choice for data scientists.

- ## Statistics and Probability
  Statistics and probability are branches of mathematics used to analyze and interpret data. Probability measures the likelihood of events occurring, while statistics involves collecting, organizing, and analyzing data to draw conclusions. Together, they are essential in fields like science, economics, and cybersecurity for making informed decisions under uncertainty.

- ## Data Visualization with Matplotlib and Seaborn
  Data visualization with Matplotlib and Seaborn allows you to create informative and aesthetically pleasing graphs and charts in Python.
  Matplotlib offers low-level control for custom plots, while Seaborn builds on it to simplify statistical visualizations.
  These libraries are essential tools for analyzing trends, distributions, and relationships in data.

- ## Exploratory Data Analysis (EDA)
  Exploratory Data Analysis (EDA) is the process of examining datasets to summarize their main characteristics, often using visual methods. It helps identify patterns, trends, anomalies, and relationships within the data. EDA is a crucial first step in data analysis, guiding further data processing and model development.

Machine Learning Algorithms

Machine learning algorithms are computational methods that allow systems to learn patterns from data and make predictions or decisions without being explicitly programmed. They include types like supervised, unsupervised, and reinforcement learning. Common algorithms include decision trees, support vector machines, and neural networks.

SQL and Data Handling

SQL (Structured Query Language) is used to manage and manipulate relational databases through commands like SELECT, INSERT, UPDATE, and DELETE.
It allows users to query large datasets efficiently and retrieve meaningful insights using filtering, sorting, and joining operations.
Data handling in SQL involves organizing, validating, and transforming data to ensure accuracy and consistency within databases.

Deep Learning Fundamentals

Deep learning is a subset of machine learning that uses artificial neural networks with many layers to model complex patterns in data. It excels in tasks like image recognition, natural language processing, and autonomous systems. These models learn features directly from raw data, reducing the need for manual feature extraction.

Capstone Projects and Industry Cases

Capstone projects and industry cases allow students to apply academic knowledge to real-world problems, often in collaboration with companies. These experiences enhance problem-solving, teamwork, and technical skills. They also help build a strong portfolio and professional network for future career opportunities.

Tools, Languages, Platforms

Sample Projects

These are sample projects only. Unique capstone projects will be discussed in the live class

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, stop word 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 course, you'll be ready to take on key roles in 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:

- Amazon
- Google
- Microsoft
- Deloitte
- Startups and Fintech Companies

Certificates

PAVISION INNOVATIONS

CERTIFICATE
OF COURSE COMPLETION
THIS CERTIFICATE IS PROUDLY PRESENTED TO

K.H.N.VAMSI

has successfully completed Artificial Intelligence course at Pavision Innovations
in the month of 3 JUNE 2025 to 3 AUGUST 2025 and has proven his/her
competency with utmost dedication and promise
CERTIFICATE ID: 6565-5801-2130

Academic Head

Mentor

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MSME
Ministry of MSME, Govt. of India

INTERNSHIP
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Academic Head

Mentor

SAMPLE

Assured Interviews

As part of our placement support, we provide assured interview opportunities with leading companies in your field. Our dedicated placement team works tirelessly to connect you with the right employers based on your skills and interests.

The Course and Curriculum is designed by Mentors from

Get Started Today!

Contact Us:
Ready to take 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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