Faysal Aziz

AI for FSI and FinTech

3-day intensive course on using python and machine learning

FA-0066 · 3-day

Software Development · Data & Analytics

Introduction

This is a specialized 3-day course designed for new Python programmers keen on applying artificial intelligence and machine learning techniques in the Financial Services Industry (FSI). This course provides an introduction to the fundamentals of AI and machine learning with a specific focus on applications within finance, such as risk assessment, fraud detection, investment strategies, and customer segmentation. Through a blend of theoretical learning and practical exercises, participants will gain hands-on experience in implementing AI solutions to solve financial industry challenges using Python.

Learning outcomes

By the end of this course, participants will be able to:

- Understand the basics of AI and machine learning concepts.
- Apply Python programming skills to develop AI models.
- Implement machine learning algorithms for predictive modeling in finance.
- Use AI for risk assessment and fraud detection in the FSI.
- Employ machine learning for investment strategy formulation.
- Understand customer data analysis for personalized banking and segmentation.
- Gain insight into the ethical considerations and future trends of AI in finance.

Prerequisites

- Basic knowledge of Python programming.
- Familiarity with fundamental programming concepts (variables, functions, control flow).

- Interest in the application of AI within the Financial Services Industry.

Training outline

1. Introduction to AI and Machine Learning in Finance

1. Overview of AI and Its Impact on the Financial Services Industry
2. Basic Concepts of Machine Learning and Data Science
3. Setting Up the Python Environment for AI Development
4. Introduction to Python Libraries for AI (NumPy, Pandas, Scikit-learn)

2. Python Programming for AI

1. Quick Python Refresher: Syntax, Data Structures, Functions, and Classes
2. Data Manipulation with Pandas: Handling Financial Datasets
3. Visualization with Matplotlib and Seaborn: Financial Data Visualization

3. Machine Learning Techniques in FSI

Predictive Modeling for Credit Risk Assessment

1. Introduction to Credit Scoring
2. Logistic Regression and Decision Trees for Risk Prediction

Fraud Detection Using Machine Learning

1. Anomaly Detection Techniques
2. Implementing a Fraud Detection Model

Investment and Portfolio Management

1. Time Series Analysis and Forecasting for Stock Prices
2. Machine Learning in Algorithmic Trading Strategies

Customer Segmentation for Personalized Banking

1. K-Means Clustering for Customer Data
2. Analyzing Customer Behavior for Product Recommendation

4. Ethical Considerations and Future Trends

1. Ethical Implications of AI in Finance
2. Privacy and Security Concerns
3. Future Trends in AI and Machine Learning in the Financial Services Industry

"AI for FSI" is meticulously designed to cater to new Python programmers with an interest in financial applications. It emphasizes practical, industry-relevant AI and machine learning skills, preparing participants to tackle real-world financial challenges with innovative AI solutions.

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