AI in Finance & Banking:
Applications, Analytics, and Intelligent Systems

Duration: 48 Hours

Course Overview

This 5-day comprehensive course brings together applied AI in finance and the technical foundations of AI and machine learning in banking. Participants will explore how AI is transforming core financial functions — from credit scoring, fraud detection, and stock market forecasting to blockchain integration and emerging FinTech — while simultaneously gaining hands-on proficiency in the tools and techniques that power these systems. Covering Python, R, and WEKA, the course progresses through data analytics, supervised and unsupervised learning, natural language processing, and culminates in building a functional AI chatbot. Together, these two tracks equip finance and banking professionals with both the strategic understanding and the technical skills to design and deploy intelligent AI-driven systems in real-world financial environments.

Pre-requisites

- Basic understanding of finance or banking operations — no deep technical background required
- Familiarity with Python or R is helpful but not mandatory; willingness to learn is sufficient
- Interest in how AI and data analytics are reshaping financial services
- Openness to working with AI tools, ethical frameworks, and data-driven decision-making approaches

Course Agenda

PART 1: AI+ Finance — Applications Across Financial Domains

Module 1: Introduction to AI and Its Impact on Finance

- Fundamentals of AI in Finance
- Data-Driven Decision Making in Finance
- AI Technologies Shaping the Financial Landscape

Module 2: Data-Driven Decision Making in Finance

- The Power of Financial Data
- Analytics and Insights in Finance
- Implementing AI for Strategic Financial Decision-Making

Module 3: Enhancing Credit and Loans with AI

- Revolutionizing Credit Scoring with AI
- Automating Loan Origination and Processing

- Personalization and Customer Experience in Lending

Module 4: Fraud Detection in Finance with AI

- The Landscape of Financial Fraud
- AI and Machine Learning in Fraud Detection
- Future Directions in AI-driven Fraud Detection

Module 5: Forecasting Stock Market with AI

- Overview of Stock Market Analysis
- AI Technologies in Stock Forecasting
- Challenges and Future of AI in Stock Market Forecasting

Module 6: Blockchain and AI — Revolutionizing Finance

- Introduction to Blockchain in Finance
- Synergy of AI and Blockchain in Finance
- Future Perspectives and Ethical Considerations

Module 7: Emerging Technologies and Their Impact on Finance

- The Expanding Universe of FinTech
- Next-Generation Technologies Shaping Finance
- Integrating Emerging Technologies into Financial Services

Module 8: Implementing AI Strategies in Finance

- Building a Digital-First Finance Strategy
- Operationalizing AI and Emerging Technologies
- Looking Ahead: The Future of Financial Services

PART 2: Artificial Intelligence in Banking — Technical Foundations

Module 9: Artificial Intelligence Basics

- Artificial Intelligence and Machine Learning
- Typical applications
- The architecture of a system
- Software tools: Python
- Software tools: R
- Software tools: WEKA

Module 10: Data Analytics and Visualization

- Data gathering
- Feature engineering
- Statistical analysis
- Data visualization
- Dimensionality reduction

Module 11: Unsupervised and Supervised Learning

- Similarity estimation
- Clustering
- Association rules
- Recommender systems
- K-Nearest Neighbors
- Decision Trees
- Naïve Bayes
- Artificial Neural Networks

Module 12: Natural Language Processing

- Extracting structure from raw text
- Regular expressions
- Word features and semantics
- Text classification
- Information extraction
- Question answering systems

Module 13: Building a Chatbot

- Extracting information from conversations
- Chatbot as a search engine
- Natural Language Understanding
- Natural Language Generation
- Building a system