

Financial Innovation with AI, Machine Learning and Blockchain

Concepts, use cases and guided financial-data exercises

FA-0615 · 2 days

AI for Leaders & Business · Data & Analytics · DevOps, Cloud & Infrastructure

Evaluate AI, machine-learning and blockchain use cases in finance through introductory concepts, risk discussion and guided exercises.

Introduction

This two-day introduction connects financial-services use cases with AI, machine learning and blockchain concepts. Financial professionals and interested technologists compare opportunities, data requirements, implementation constraints and governance questions.

Participants work with a prepared financial-data example and outline a blockchain use case. Malaysian settings are used as clearly illustrative scenarios, not unverified client success stories. The course does not train participants to deploy regulated financial systems, validate an investment strategy or predict returns.

Learning outcomes

The course teaches participants to:

- Explain selected AI, ML and blockchain concepts relevant to financial services.
- Compare proposed use cases in credit assessment, customer service, fraud analysis and transaction workflows.
- Prepare and evaluate a small financial-data example using guided ML steps and suitable validation.
- Outline the participants, records and controls for an illustrative blockchain workflow.

- Identify privacy, security, fairness, operational and regulatory questions.
- Assess a proposed innovation against business needs, data quality and realistic implementation constraints.

Prerequisites

- A foundational understanding of financial concepts and markets.

Basic programming concepts are helpful. Prepared examples and guided demonstrations are used; Python experience is advantageous but is not required for the conceptual activities.

- An interest in technology and innovation within the finance sector.

Any hands-on software or service access must be available in a suitable training environment. Exercises use synthetic, anonymised or public data, not customer records or live financial transactions.

Training outline

1. Day 1 – Financial Innovation, AI and Data Analysis

Introduction to Financial Innovation

- The evolution of financial services: From traditional banking to fintech.
- Overview of digital transformation in finance.
- The role of technology in shaping the future of finance.

Illustrative Malaysian Financial-Services Scenarios

- Illustrative banking scenario: discuss credit assessment and customer-service assistance, including data and governance requirements.
- Illustrative identity or credential-recording scenario: assess whether a blockchain is appropriate and what it does not establish.
- Compare hypothetical fintech use cases without implying a client relationship or proven implementation.

Fundamental Concepts

Artificial Intelligence in Finance

- Understanding AI and its relevance to finance.
- Key concepts: Machine Learning, Deep Learning, Neural Networks.

Machine Learning in Finance

- Supervised vs. unsupervised learning: Applications in finance.
- Predictive modelling and trading-related examples; distinguish model evaluation from evidence of profitable trading.
- ML tools and technologies for financial analysis.

Blockchain in Finance

- Basics of Blockchain technology: How it works.
- Cryptocurrencies and beyond: Smart contracts and decentralized finance (DeFi).
- Blockchain records, identity-related workflows and security limitations; tamper resistance does not eliminate application, access or input-data risks.

AI and ML for Financial Analysis

- Data handling and preprocessing for financial models.
- Review the design and evaluation steps for a small financial model; discuss how risk, investment and fraud tasks differ.
- Illustrative investment-platform and robo-adviser scenarios; human oversight, suitability and limitations.

2. Day 2 – Blockchain, Governance and Guided Exercises

Blockchain Applications in Finance

- Compare payment, remittance and cross-border transaction architectures at a conceptual level; do not build a live payment system.
- Blockchain in supply chain finance and trade finance.
- Legal and regulatory considerations for Blockchain in finance.

Innovative Financial Products and Services

- AI and ML in creating personalized banking experiences.
- Conceptual blockchain payment and financial-instrument workflows, including legal and operational dependencies.
- Evaluate possible applications in insurance, lending and savings without forecasting adoption or results.

Ethical Considerations and Challenges

- Data privacy and security challenges in digital finance.
- Ethical AI and ML: Bias, fairness, and transparency.

- Regulatory challenges and considerations for Blockchain in finance.

The Future of Financial Innovation

- Discuss selected technology developments and check current authoritative documentation before adopting a proposed approach.
- Identify organisational readiness, training and review needs.
- A practical process for evaluating new fintech claims and selecting further learning.

Hands-on Workshops and Group Projects

- Guided prepared ML experiment: inspect data, fit a small example model and discuss validation and limitations.
- Group exercise: outline or simulate a blockchain-based record workflow for an illustrative financial use case, without token issuance or live transactions.
- Use the same prepared non-confidential dataset to practise financial-data preparation and analysis; discuss leakage, data quality and generalisation.