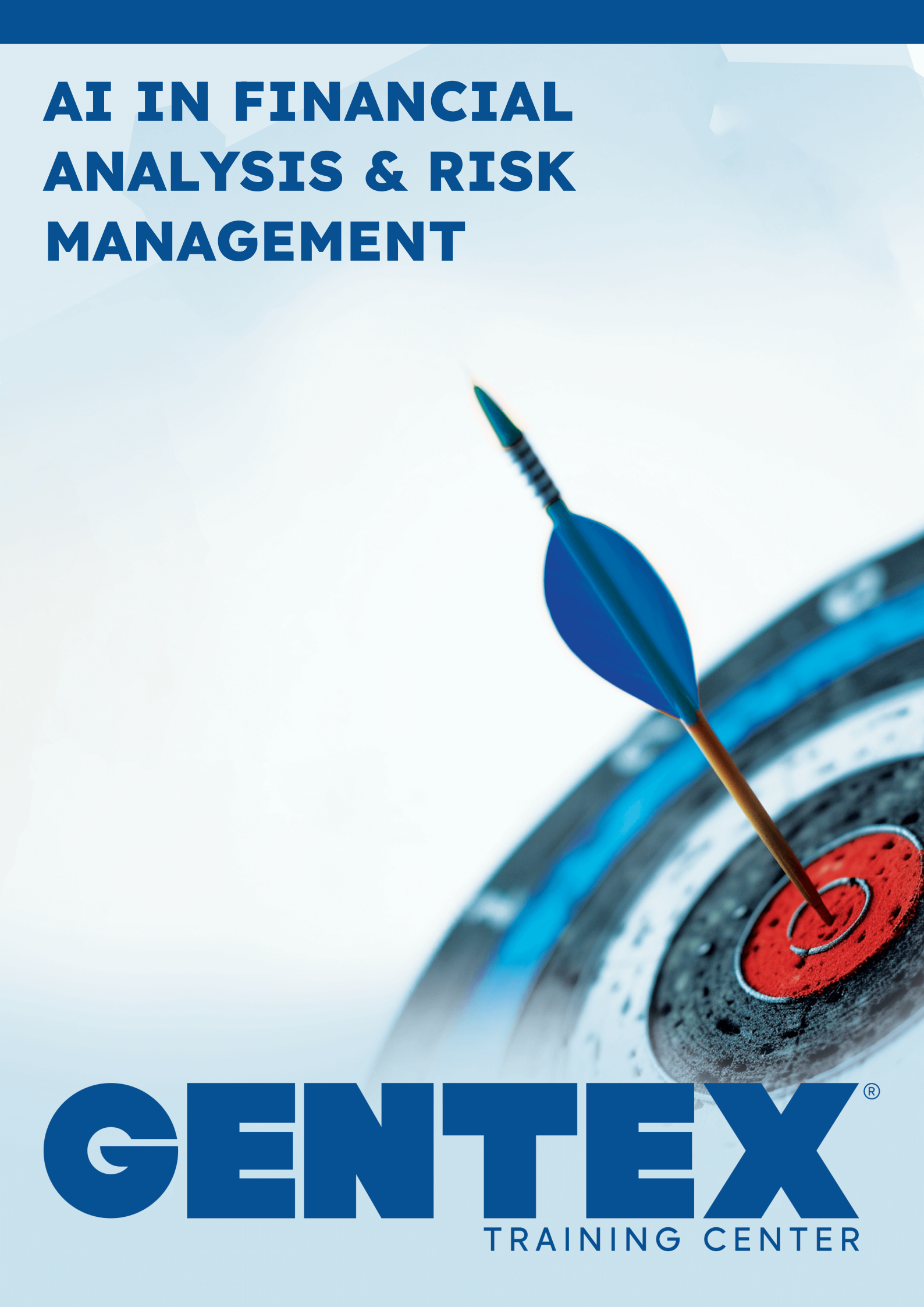
AI IN FINANCIAL ANALYSIS & RISK MANAGEMENT



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Introduction

AI in Financial Analysis & Risk Management Training Course equips finance professionals to use artificial intelligence where it genuinely improves decisions. Machine learning now supports credit scoring, fraud detection, market forecasting, and stress testing, and it processes patterns that manual review would never reach. It also introduces new failure modes: opaque models, biased training data, and unstable outputs. This course covers both sides. It explains data preparation, model selection, and validation. Furthermore, it applies predictive modelling, credit risk scoring, anomaly detection, and scenario simulation. In addition, it develops model governance and regulatory awareness. As a result, participants deploy AI in finance with analytical rigour and control.

AI in Financial Analysis & Risk Management Course Objectives

- Explain how AI and machine learning apply across financial analysis and risk.
- Prepare, clean, and feature-engineer financial datasets.
- Apply supervised learning methods to credit scoring and default prediction.
- Apply unsupervised learning and clustering to segmentation and anomaly detection.
- Apply time series and forecast models to market and revenue prediction.
- Build fraud detection models using classification and rule hybrid approaches.
- Apply explainability techniques including SHAP and feature importance.
- Validate models using backtesting, cross-validation, and out-of-sample testing.
- Apply model risk governance, documentation, and monitoring standards.
- Interpret regulatory expectations on AI use in financial services.

Course Methodology

- Interactive lectures with real financial AI and risk modelling cases.

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- Data preparation and feature engineering workshops.
- Credit scoring and fraud detection modelling exercises.
- Explainability and model validation practice.
- Structured peer review with facilitator feedback on model governance proposals.

Who Should Take This Course

- Financial analysts and risk analysts.
- Credit risk and fraud modelling professionals.
- Treasury and market risk staff.
- Data scientists working in financial services.
- Internal auditors reviewing model risk.
- Finance leaders sponsoring AI adoption.

AI in Financial Analysis & Risk Management Course Outlines

Day 1: AI Foundations in Finance

- AI, machine learning, and their finance applications.
- Supervised, unsupervised, and reinforcement learning.
- Data sources: transactions, market data, and alternative data.
- Data quality issues and bias in financial datasets.
- Feature engineering for financial variables.
- Model development lifecycle overview.
- Case study: selecting an AI use case with real business value.

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Day 2: Predictive Modelling and Credit Risk

- Regression and classification fundamentals.
- Logistic regression for default prediction.
- Decision trees, random forests, and gradient boosting.
- Credit scoring model development and calibration.
- Probability of default and expected loss estimation.
- Scorecard construction and cut-off setting.
- Workshop: building a credit default prediction model.

Day 3: Fraud Detection and Anomaly Analysis

- Fraud patterns in payments, claims, and transactions.
- Classification approaches for fraud detection.
- Anomaly detection with clustering and isolation forests.
- Rule-based and machine learning hybrid designs.
- Imbalanced data handling and sampling techniques.
- False positive management and operational impact.
- Workshop: building a fraud detection model with imbalanced data.

Day 4: Forecasting, Stress Testing, and Explainability

- Time series models: ARIMA, exponential smoothing, and regression.
- Machine learning forecasting for revenue and market variables.
- Scenario generation and stress testing simulation.
- Monte Carlo methods in risk modelling.
- Explainability techniques: SHAP, permutation importance, partial dependence.

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- Bias detection and fairness assessment.
- Workshop: interpreting model outputs for a risk committee.

Day 5: Validation, Governance, and Deployment

- Model validation: cross-validation and out-of-sample testing.
- Backtesting and performance drift monitoring.
- Model risk governance and validation independence.
- Documentation standards and model inventory.
- Regulatory expectations on AI in financial services.
- Deployment, monitoring, and periodic review.
- Course review, assessment, and action planning.

Conclusion

By successfully completing AI in Financial Analysis & Risk Management, participants will gain a thorough understanding of AI foundations in finance, predictive modelling and credit risk, fraud detection and anomaly analysis, forecasting and stress testing, explainability, and model validation and governance. They will also acquire practical skills in financial data preparation and feature engineering, predictive modelling for credit risk and fraud detection, forecasting and stress testing with AI methods, and model validation, explainability and governance. In addition, the course prepares them to deploy AI in finance with analytical rigour and proper control. Gentex Training Center delivers this programme with a strong focus on applied modelling technique and defensible model governance.

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FAQs for AI in Financial Analysis & Risk Management course

Q1 What is the "AI in Financial Analysis & Risk Management" course about?

It is a five-day programme on applying artificial intelligence to financial analysis and risk. It covers data preparation and feature engineering, credit scoring and default prediction, fraud detection and anomaly analysis, forecasting and stress testing, model explainability, and model validation and governance.

Q2 What are the key benefits of the "AI in Financial Analysis & Risk Management" course?

Participants use AI where it improves decisions and control it where it introduces risk. The course improves credit scoring accuracy and calibration, strengthens fraud detection while managing false positives, sharpens forecasting and stress testing, adds explainability for committee and regulatory review, and builds governance that keeps models reliable over time.

Q3 What skills will I gain from the "AI in Financial Analysis & Risk Management" course?

Participants gain financial data preparation and feature engineering, predictive modelling for credit risk and fraud detection, forecasting and stress testing with AI methods, and model validation, explainability and governance. These four skills cover the practical core of AI application in finance.

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Q4 What tools, methods, or standards are covered in the "AI in Financial Analysis & Risk Management" course?

The course covers supervised, unsupervised and reinforcement learning, transaction, market and alternative data sources, data quality and bias assessment, feature engineering for financial variables, the model development lifecycle, logistic regression for default prediction, decision trees, random forests and gradient boosting, credit scoring development and calibration, probability of default and expected loss estimation, scorecard construction and cut-off setting, fraud classification approaches, anomaly detection with clustering and isolation forests, rule-based and machine learning hybrid design, imbalanced data sampling techniques, false positive management, ARIMA and exponential smoothing time series models, machine learning forecasting, scenario generation and stress testing, Monte Carlo risk simulation, SHAP and permutation importance explainability techniques, partial dependence analysis, bias and fairness assessment, cross-validation and out-of-sample testing, backtesting and performance drift monitoring, model risk governance and validation independence, documentation standards and model inventory, regulatory expectations on AI, and deployment and periodic review practice.

Q5 How is the "AI in Financial Analysis & Risk Management" course applied in real-world practice?

Participants apply the methods to real financial datasets. They prepare and engineer features from transaction and market data, build credit default and fraud detection models, calibrate scorecards, run forecasting and stress testing simulations, generate SHAP explanations for review committees, validate models out of sample, monitor performance drift, and document models for governance. Many leave with a model development checklist, a validation framework, and a governance documentation template ready to use.