

ARTIFICIAL INTELLIGENCE AND AUTOMATION IN PAYMENT SYSTEMS SUPERVISION



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TRAINING CENTER



Introduction

The Artificial Intelligence and Automation in Payment Systems Supervision Training Course prepares supervisors and payment oversight teams to use technology in their own work. Payment volumes grow every year, and manual surveillance cannot keep pace with the speed, complexity, and data volume of modern rails. This course explains how artificial intelligence and automation strengthen oversight of payment systems, operators, and participants. It covers data pipelines, anomaly detection, risk indicators, and supervisory dashboards. Furthermore, it addresses model governance, explainability, and auditability of automated decisions. As a result, participants learn to build supervisory capability that is faster, evidence-based, and defensible.

Artificial Intelligence and Automation in Payment Systems Supervision Course Objectives

- Explain how AI and automation apply to payment systems oversight.
- Apply the PFMI principles to technology-enabled supervision.
- Design supervisory data pipelines from payment system reporting.
- Build anomaly detection models for transaction and settlement monitoring.
- Develop risk indicators and early warning signals for payment systems.
- Automate supervisory reporting, alert triage, and case management.
- Apply network analysis to identify concentration and interconnectedness risk.
- Assess cyber, operational, and third-party risk in payment infrastructure.
- Govern automation responsibly with explainability and auditability controls.
- Design supervisory dashboards and intervention escalation frameworks.

Course Methodology

- Interactive lectures with payment oversight case studies.

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- Workshops on data pipeline and indicator design.
- Exercises on anomaly detection and alert triage logic.
- Simulation of supervisory intervention and escalation decisions.
- Structured peer discussion with facilitator feedback on oversight challenges.

Who Should Take This Course

- Payment systems supervisors and central bank oversight officers.
- Payment scheme and infrastructure risk managers.
- Financial market infrastructure analysts.
- Data analysts supporting supervisory functions.
- Compliance and financial crime monitoring specialists.
- Technology and innovation officers in regulatory authorities.

Artificial Intelligence and Automation in Payment Systems Supervision Course Outlines

Day 1: Foundations of Payment Systems Oversight

- Payment system components, operators, and participants.
- The PFMI principles and oversight responsibilities.
- Settlement risk, liquidity risk, and systemic importance.
- Oversight powers, mandates, and cooperation arrangements.
- Data sources: settlement reports, message data, and statistical returns.
- Traditional surveillance versus technology-enabled supervision.
- Case study: an operational incident in a payment system.





Day 2: Data Foundations and Supervisory Pipelines

- Building supervisory data pipelines and ingestion routines.
- Data quality, validation, and reconciliation controls.
- Standardised reporting formats and ISO 20022 message data.
- Data warehousing, governance, and access controls.
- Near real-time data processing for payment monitoring.
- Data visualisation and dashboard design principles.
- Workshop: mapping a supervisory data pipeline end to end.

Day 3: AI Models for Monitoring and Detection

- Anomaly detection methods for transaction and settlement data.
- Supervised classification for risk scoring and exception flagging.
- Network analysis for concentration and interconnectedness.
- Clustering techniques for participant behaviour profiles.
- Alert triage, false positive reduction, and case prioritisation.
- Model validation, drift monitoring, and performance review.
- Workshop: designing an anomaly detection model for settlement monitoring.

Day 4: Automation, Reporting, and Cyber Oversight

- Robotic process automation in supervisory workflows.
- Automated report generation and exception handling.
- Case management systems and evidence trails.
- Cyber resilience expectations for payment infrastructure.
- Operational and third-party risk assessment in payment systems.

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- Supervisory dashboards, heat maps, and escalation triggers.
- Workshop: automating a supervisory reporting cycle.

Day 5: Governance, Ethics, and Supervisory Readiness

- Governance of AI and automation in a regulatory authority.
- Explainability, fairness, and auditability requirements.
- Data protection, confidentiality, and information sharing limits.
- Incident response and crisis coordination with operators.
- Building supervisory skills, capacity, and change management.
- Roadmap for technology-enabled payment supervision.
- Course review, assessment, and action planning.

Conclusion

By successfully completing Artificial Intelligence and Automation in Payment Systems Supervision, participants will gain a thorough understanding of how AI and automation strengthen payment oversight, from data pipelines and anomaly detection to dashboards and intervention frameworks. They will also acquire practical skills in indicator design, alert triage, reporting automation, and governance of automated decisions. In addition, the course prepares them to modernise supervisory practice with confidence. Gentex Training Center delivers this programme with a strong focus on real oversight practice and measurable supervisory improvement.

FAQs for Artificial Intelligence and Automation in Payment Systems Supervision course





Q1 What is the "Artificial Intelligence and Automation in Payment Systems Supervision" course about?

It is a five-day programme on using AI and automation to supervise payment systems and their participants. It covers supervisory data pipelines, anomaly detection, risk indicators, alert triage, reporting automation, cyber and operational oversight, and governance of automated decisions.

Q2 What are the key benefits of the "Artificial Intelligence and Automation in Payment Systems Supervision" course?

Participants gain the ability to monitor payments at scale rather than sampling a small share of activity. The course improves early detection of settlement, liquidity, and operational problems, reduces false alerts and manual effort, strengthens evidence for supervisory action, and helps authorities keep pace with faster payment rails.

Q3 What skills will I gain from the "Artificial Intelligence and Automation in Payment Systems Supervision" course?

Participants gain supervisory data pipeline and indicator design, anomaly detection and risk scoring model design, supervisory reporting and workflow automation, and governance, explainability and auditability assessment for automated oversight. These four skills cover the technology-enabled supervision cycle.



Q4 What tools, methods, or standards are covered in the "Artificial Intelligence and Automation in Payment Systems Supervision" course?

The course covers the PFMI principles for financial market infrastructures, ISO 20022 message data, supervisory data pipelines and validation controls, anomaly detection and supervised classification, network analysis for interconnectedness, clustering for participant profiling, alert triage and false positive reduction, model drift and validation monitoring, robotic process automation, case management systems, cyber resilience expectations, heat maps and escalation triggers, and explainability and auditability requirements.

Q5 How is the "Artificial Intelligence and Automation in Payment Systems Supervision" course applied in real-world practice?

Participants apply the methods inside their own authorities. They map supervisory data sources, build monitoring indicators, design anomaly detection logic, automate reporting cycles, define escalation triggers, and set governance rules for automated decisions. Many leave with a technology-enabled supervision roadmap ready to implement.