Datastat Research
Building Capacity in Training and Research

DATASTAT TRAINING IN

OFFICIAL COURSE PROSPECTUS

Center for Advanced Research & Professional Development

Nairobi Training Center • Global Virtual Academy • Corporate On-Site

ACCOUNTING AND FINANCE

AI-Driven Fraud Detection and Financial Anomaly Analysis Training Course

Comprehensive Course Syllabus, Practical Modules & Upcoming Schedules

PROGRAM SPECIFICATIONS & HIGHLIGHTS

DURATION
10 Days Practical Hands-on

DELIVERY MODES
In-Person Class & Live Virtual

CERTIFICATION
Accredited Certificate of Completion

INTAKES / DATES
Multiple Cohort Schedules Included

PREPARED FOR:

Valued Participant

Email: training@datastatresearch.org | Issued: November 25, 2026

Academic & Professional Training Year: 2026

DATASTAT TRAINING INSTITUTE

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Training Centers: Nairobi • Mombasa • Kigali • Dubai • Live Virtual Academy

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AI-Driven Fraud Detection and Financial Anomaly Analysis Training Course

Accounting and Finance • 10 Days Intensive • Accredited Certification

Course Overview

AI-Driven Fraud Detection and Financial Anomaly Analysis Training Course equips professionals with advanced knowledge and practical skills to identify, investigate, prevent, and mitigate financial fraud using artificial intelligence, machine learning, predictive analytics, and big data technologies.

Key Skills & Software Tools Covered

MS Word • SAS Fraud Management • IBM Safer Payments • and NICE Actimize

Upcoming Training Schedules

Confirmed cohort intakes and venues. Both physical in-person classroom and live virtual online seats are available.

TRAINING DATES	LOCATION / VENUE	FORMAT / DURATION	INVESTMENT (FEE)
7 Dec 2026 – 18 Dec 2026	Nairobi	Classroom / 10d	**$3,000 USD / KES 220,000**
21 Dec 2026 – 1 Jan 2027	Nairobi	Classroom / 10d	**$3,000 USD / KES 220,000**
4 Jan 2027 – 15 Jan 2027	Nairobi	Classroom / 10d	**$3,000 USD / KES 220,000**
18 Jan 2027 – 29 Jan 2027	Nairobi	Classroom / 10d	**$3,000 USD / KES 220,000**
1 Feb 2027 – 12 Feb 2027	Nairobi	Classroom / 10d	**$3,000 USD / KES 220,000**
15 Feb 2027 – 26 Feb 2027	Nairobi	Classroom / 10d	**$3,000 USD / KES 220,000**
1 Mar 2027 – 12 Mar 2027	Nairobi	Classroom / 10d	**$3,000 USD / KES 220,000**
15 Mar 2027 – 26 Mar 2027	Nairobi	Classroom / 10d	**$3,000 USD / KES 220,000**
29 Mar 2027 – 9 Apr 2027	Nairobi	Classroom / 10d	**$3,000 USD / KES 220,000**
12 Apr 2027 – 23 Apr 2027	Nairobi	Classroom / 10d	**$3,000 USD / KES 220,000**
26 Apr 2027 – 7 May 2027	Nairobi	Classroom / 10d	**$3,000 USD / KES 220,000**
10 May 2027 – 21 May 2027	Nairobi	Classroom / 10d	**$3,000 USD / KES 220,000**
24 May 2027 – 4 Jun 2027	Nairobi	Classroom / 10d	**$3,000 USD / KES 220,000**
7 Jun 2027 – 18 Jun 2027	Nairobi	Classroom / 10d	**$3,000 USD / KES 220,000**
21 Jun 2027 – 2 Jul 2027	Nairobi	Classroom / 10d	**$3,000 USD / KES 220,000**
5 Jul 2027 – 16 Jul 2027	Nairobi	Classroom / 10d	**$3,000 USD / KES 220,000**
19 Jul 2027 – 30 Jul 2027	Nairobi	Classroom / 10d	**$3,000 USD / KES 220,000**
2 Aug 2027 – 13 Aug 2027	Nairobi	Classroom / 10d	**$3,000 USD / KES 220,000**
16 Aug 2027 – 27 Aug 2027	Nairobi	Classroom / 10d	**$3,000 USD / KES 220,000**
30 Aug 2027 – 10 Sep 2027	Nairobi	Classroom / 10d	**$3,000 USD / KES 220,000**
13 Sep 2027 – 24 Sep 2027	Nairobi	Classroom / 10d	**$3,000 USD / KES 220,000**
27 Sep 2027 – 8 Oct 2027	Nairobi	Classroom / 10d	**$3,000 USD / KES 220,000**

11 Oct 2027 – 22 Oct 2027	Nairobi	Classroom / 10d	**$3,000 USD / KES 220,000**
25 Oct 2027 – 5 Nov 2027	Nairobi	Classroom / 10d	**$3,000 USD / KES 220,000**
8 Nov 2027 – 19 Nov 2027	Nairobi	Classroom / 10d	**$3,000 USD / KES 220,000**
22 Nov 2027 – 3 Dec 2027	Nairobi	Classroom / 10d	**$3,000 USD / KES 220,000**
6 Dec 2027 – 17 Dec 2027	Nairobi	Classroom / 10d	**$3,000 USD / KES 220,000**

* Corporate discounts and customized cohort scheduling are available for teams of 3 or more participants.

Course Curriculum & Modules

AI-Driven Fraud Detection and Financial Anomaly Analysis Training Course

Introduction

AI-Driven Fraud Detection and Financial Anomaly Analysis Training Course equips professionals with advanced knowledge and practical skills to identify, investigate, prevent, and mitigate financial fraud using artificial intelligence, machine learning, predictive analytics, and big data technologies. As financial crimes become increasingly sophisticated, organisations require intelligent fraud detection systems capable of analysing large financial datasets, identifying suspicious transactions, detecting unusual spending patterns, and generating real-time fraud alerts. This course explores AI-powered fraud prevention, financial anomaly detection, behavioural analytics, predictive modelling, automated transaction monitoring, and risk-based decision-making to strengthen financial security and regulatory compliance.

Participants will gain practical expertise in machine learning algorithms, deep learning, natural language processing, neural networks, anomaly scoring, and explainable artificial intelligence for financial crime prevention. Through international case studies, practical exercises, and industry-based scenarios, participants will learn how banks, insurance companies, fintech organisations, and financial institutions deploy intelligent fraud detection frameworks. The course also examines anti-money laundering analytics, cybersecurity risks, data governance, model validation, and emerging AI technologies to support proactive fraud prevention, operational efficiency, financial transparency, and sustainable institutional resilience.

Course Objectives

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

- Understand artificial intelligence applications in modern financial fraud detection.
- Apply machine learning algorithms to identify suspicious transactions.
- Develop predictive analytics models for financial anomaly detection.
- Analyse financial datasets using advanced data analytics techniques.
- Implement real-time transaction monitoring and automated fraud alerts.
- Identify money laundering patterns using intelligent analytics.
- Apply deep learning to complex financial fraud investigations.
- Use behavioural analytics to detect unusual customer activities.
- Evaluate fraud risks using predictive risk-scoring models.
- Apply explainable AI for transparent fraud detection decisions.
- Strengthen financial cybersecurity and data protection frameworks.
- Evaluate AI model accuracy, reliability, and performance.
- Develop integrated AI-driven financial fraud prevention strategies.

Organizational Benefits

- Reduced financial losses through proactive fraud identification.
- Improved transaction monitoring and financial security.
- Enhanced regulatory compliance and reporting.
- Increased operational efficiency through automation.
- Improved detection of sophisticated financial crimes.
- Stronger enterprise-wide financial risk management.
- Better customer protection and institutional reputation.
- Improved accuracy of financial investigations.
- Reduced manual fraud monitoring workloads.
- Enhanced data-driven financial decision-making.

Target Audiences

- Banking and financial services professionals.
- Fraud detection and investigation officers.
- Financial analysts and accountants.
- Risk management and compliance officers.
- Data scientists and machine learning specialists.
- Anti-money laundering professionals.
- Fintech and digital banking executives.
- Internal auditors and cybersecurity professionals.

Course Duration: 10 days

Course Modules

Module 1: Foundations of AI-Driven Financial Fraud Detection

- Fundamentals of artificial intelligence in financial services.
- Types of financial fraud and emerging financial crime trends.
- Machine learning applications in fraud prevention.
- Financial anomaly detection frameworks.
- Case study: JPMorgan Chase's AI-supported financial crime monitoring.

Module 2: Financial Data Analytics and Fraud Intelligence

- Financial data collection, cleaning, and preprocessing.
- Transaction datasets and behavioural indicators.
- Feature engineering for fraud detection.
- Big data analytics and fraud intelligence.
- Case study: PayPal's data-driven transaction risk analysis.

Module 3: Machine Learning Algorithms for Fraud Detection

- Supervised and unsupervised learning techniques.
- Decision trees, random forests, and gradient boosting.
- Logistic regression for fraud classification.
- Model training, testing, and validation.
- Case study: Mastercard's machine learning fraud prevention systems.

Module 4: Financial Anomaly Detection Techniques

- Statistical approaches to anomaly identification.
- Clustering and isolation forest algorithms.
- Detecting unusual transaction volumes and frequencies.
- Real-time anomaly scoring and prioritisation.
- Case study: Detecting abnormal international banking transactions.

Module 5: Deep Learning and Neural Networks

- Artificial neural networks for financial analysis.
- Deep learning architectures and applications.
- Recurrent neural networks for transaction sequences.
- Autoencoders for detecting unusual financial behaviour.
- Case study: Deep learning applications in digital payment fraud detection.

Module 6: Real-Time Transaction Monitoring

- Automated transaction monitoring frameworks.
- Streaming data analytics and processing.
- Real-time fraud alerts and escalation mechanisms.
- Intelligent transaction verification systems.
- Case study: Visa's real-time payment fraud prevention technology.

Module 7: Anti-Money Laundering and Financial Crime Analytics

- Fundamentals of anti-money laundering analytics.
- Identifying suspicious transaction networks.
- Detecting structuring and unusual fund transfers.
- AI-powered suspicious activity reporting.
- Case study: HSBC's application of advanced analytics in financial crime prevention.

Module 8: Behavioural Analytics and Customer Profiling

- Customer transaction behaviour analysis.
- Identifying deviations from normal spending patterns.
- User profiling and behavioural biometrics.
- Detecting account takeover and identity fraud.
- Case study: Digital banking customer behavioural fraud monitoring.

Module 9: Graph Analytics and Network-Based Fraud Detection

- Fundamentals of graph-based financial analytics.
- Identifying relationships between suspicious accounts.
- Social network analysis for financial crime detection.
- Detecting collusion and organised fraud networks.
- Case study: European banking investigations using transaction network analysis.

Module 10: Natural Language Processing for Financial Fraud

- Applications of natural language processing in fraud analytics.
- Analysing financial documents and suspicious communications.
- Intelligent invoice and document verification.
- Text classification for fraud identification.
- Case study: AI-powered detection of fraudulent insurance claims.

Module 11: Predictive Risk Scoring and Fraud Modelling

- Developing predictive fraud risk models.
- Transaction risk scoring methodologies.
- Probability-based fraud classification.
- Fraud model optimisation and performance evaluation.
- Case study: American Express predictive payment risk assessment.

Module 12: Explainable AI, Governance and Regulatory Compliance

- Explainable artificial intelligence principles.
- Interpreting automated fraud detection decisions.
- AI transparency, accountability, and ethical considerations.
- Data privacy and regulatory compliance.
- Case study: European financial institutions implementing explainable AI governance.

Module 13: Fraud Investigation and Automated Reporting

- AI-assisted financial fraud investigations.
- Automated evidence collection and analysis.
- Fraud dashboards and management reporting.
- Investigation workflows and escalation procedures.
- Case study: Automated fraud investigation in international insurance operations.

Module 14: AI Model Deployment, Testing and Performance Monitoring

- Deploying machine learning fraud detection models.
- Model accuracy, precision, recall, and F1-score.
- Managing false positives and false negatives.
- Model drift detection and continuous improvement.

- Case study: Fintech transaction monitoring model deployment.

Module 15: Integrated AI Fraud Prevention Strategy and Practical Applications

- Designing enterprise-wide AI fraud prevention frameworks.
- Integrating fraud detection with financial information systems.
- Developing automated anomaly detection dashboards.
- Building sustainable AI-driven fraud management strategies.
- Case study: Integrated fraud prevention across global digital payment platforms.

Training Methodology

- Instructor-led presentations and interactive discussions.
- Practical machine learning and financial analytics exercises.
- Real-world international financial fraud case studies.
- Group assignments and collaborative problem-solving.
- Hands-on fraud detection simulations and demonstrations.
- AI modelling, transaction analysis, and dashboard development.
- Practical risk assessment and fraud investigation exercises.
- Individual assessments, presentations, and knowledge evaluations.

Register as a group from 3 participants for a Discount

Send us an email: info@datastatresearch.org or call +254724527104

Certification

Upon successful completion of this training, participants will be issued with a globally- recognized certificate.

Tailor-Made Course

We also offer tailor-made courses based on your needs.

Key Notes

a. The participant must be conversant with English.

b. Upon completion of training the participant will be issued with an Authorized Training Certificate

c. Course duration is flexible and the contents can be modified to fit any number of days.

d. The course fee includes facilitation training materials, 2 coffee breaks, buffet lunch and A Certificate upon successful completion of Training.

e. One-year post-training support Consultation and Coaching provided after the course.

f. Payment should be done at least a week before commence of the training, to DATASTAT CONSULTANCY LTD account, as indicated in the invoice so as to enable us prepare better for you.

Certification & Learning Methodology

- Hands-on practical delivery with real-world datasets, case studies, and lab exercises.
- Post-training mentorship, access to class resources, and customized follow-up support.
- Participants who successfully complete the course receive an accredited Datastat Certificate of Completion.

How to Enroll & Reserve Your Seat

1. Online Registration: Visit https://datastatresearch.org/courses/ai-driven-fraud-detection-and-financial-anomaly-analysis-training-course to register online.
2. Email Booking: Send participant details to training@datastatresearch.org for official invoice & reservation.
3. Support & Assistance: Inquire via phone +254 724 527 104 | +254 734 969 612.