Advanced Data Analytics for Fraud Detection Training Course

Professional Development Training Course Outline

Category	Public Financial Management & Budgeting	**Duration**	5 Days
Base Fee	$1,500 USD	**Delivery Mode**	Online / On-site Hybrid

Course Introduction

In today’s digital economy, organizations face growing threats of fraud, financial crime, cyber risks, and regulatory non-compliance. Leveraging advanced data analytics, machine learning, and AI-powered fraud detection tools has become critical for businesses, governments, and financial institutions. Advanced Data Analytics for Fraud Detection Training Course equips professionals with hands-on expertise in applying predictive modeling, anomaly detection, big data techniques, and risk analytics to identify, investigate, and prevent fraudulent activities across diverse sectors.

The course combines real-world fraud case studies, practical data analytics frameworks, and interactive tools to strengthen decision-making and fraud risk mitigation strategies. Participants will gain advanced competencies in pattern recognition, forensic analytics, data visualization, predictive fraud modeling, and transaction monitoring. This program is designed to empower organizations to detect fraud faster, reduce financial losses, and enhance compliance and governance frameworks through data-driven intelligence.

Programme Curriculum

Advanced Data Analytics for Fraud Detection Training Course

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Training Objectives

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

1. Apply advanced data analytics techniques for fraud detection and prevention.
2. Utilize predictive modeling and AI algorithms to identify fraudulent behavior.
3. Implement real-time fraud monitoring systems using big data platforms.
4. Analyze transactional data to detect anomalies and suspicious activities.
5. Strengthen risk management frameworks with data-driven insights.
6. Integrate machine learning models into fraud investigation processes.
7. Enhance compliance monitoring using regulatory analytics.
8. Develop fraud detection dashboards and visualization tools.
9. Conduct forensic analytics for investigating fraud incidents.
10. Leverage data mining and anomaly detection for proactive risk control.
11. Improve cybersecurity and fraud prevention strategies with analytics.
12. Use network and link analysis to detect fraud rings and collusion.
13. Build organization-wide fraud detection strategies powered by analytics.

Target Audience

1. Fraud Analysts & Investigators
2. Data Scientists & Machine Learning Engineers
3. Risk & Compliance Officers
4. Internal & External Auditors
5. Cybersecurity Specialists
6. Financial Crime & AML Professionals
7. Business Intelligence & Data Analysts
8. Regulators & Policy Makers

Course Duration: 5 days

Course Modules

Module 1: Fundamentals of Fraud Analytics

- Introduction to fraud detection and prevention frameworks
- Key fraud schemes and typologies in organizations
- Role of data analytics in modern fraud management
- Data-driven decision making for fraud risk assessment
- Fraud detection tools and software overview
- **Case Study: Credit card fraud detection using data analytics**

Module 2: Data Mining and Anomaly Detection

- Introduction to anomaly detection techniques
- Statistical and rule-based approaches for fraud detection
- Data mining applications in fraud prevention
- Identifying suspicious patterns in transactional data
- Leveraging AI and ML in anomaly detection

- **Case Study: Insurance claim fraud detection using anomaly models**

Module 3: Predictive Modeling for Fraud Detection

- Understanding supervised and unsupervised models
- Logistic regression, decision trees, and random forests
- Neural networks and deep learning for fraud analytics
- Model performance evaluation and validation
- Real-time predictive fraud detection applications
- **Case Study: Predictive modeling in telecom fraud detection**

Module 4: Forensic Analytics and Investigation

- Role of forensic analytics in fraud examination
- Techniques for analyzing financial statements
- Red flags and indicators of fraudulent activities
- Integration of forensic tools with analytics systems
- Reporting findings for legal and regulatory compliance
- **Case Study: Corporate accounting fraud investigation**

Module 5: Real-Time Fraud Monitoring Systems

- Designing real-time detection and monitoring systems
- Role of big data platforms in fraud detection
- Building streaming analytics pipelines
- Detecting fraud in digital payments and e-commerce
- Enhancing operational efficiency through automation
- **Case Study: Real-time fraud detection in online banking**

Module 6: Cybersecurity and Fraud Risk Analytics

- Intersection of cybercrime and financial fraud
- Cybersecurity frameworks for fraud prevention
- Analyzing phishing, malware, and identity theft data
- AI-driven cybersecurity analytics for fraud defense
- Building proactive fraud-cyber resilience strategies
- **Case Study: Cyber fraud detection in online retail**

Module 7: Compliance and Regulatory Analytics

- AML and regulatory compliance through analytics
- Data-driven KYC and customer due diligence
- Automating compliance reporting with data analytics
- Using analytics for fraud risk governance
- Monitoring suspicious activity with compliance dashboards
- **Case Study: AML transaction monitoring system**

Module 8: Strategic Fraud Risk Management

- Developing organization-wide fraud prevention strategies
- Fraud risk frameworks and governance models
- Embedding analytics in enterprise risk management
- Enhancing fraud detection with business intelligence
- Building a future-ready fraud analytics capability
- **Case Study: Enterprise fraud risk management in financial institutions**

Training Methodology

- Interactive lectures and expert presentations
- Hands-on exercises using real-world fraud datasets
- Group discussions and collaborative workshops
- Case study analysis for practical insights
- Simulation-based learning with predictive modeling tools

Register as a group from 3 participants for a Discount

Send us an email: info@fineskilltrainingcenter.org or call *+254769199797*

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 Fineskill Training Center account, as indicated in the invoice so as to enable us prepare better for you.

Upcoming Scheduled Sessions

Start Date	End Date	Location	Price
23 Nov 2026	27 Nov 2026	Online	$1,000
23 Nov 2026	27 Nov 2026	Physical	$1,500
23 Nov 2026	27 Nov 2026	Physical	$3,000
23 Nov 2026	27 Nov 2026	Physical	$3,000
23 Nov 2026	27 Nov 2026	Physical	$6,000
23 Nov 2026	27 Nov 2026	Physical	$4,500

Start Date	End Date	Location	Price
23 Nov 2026	27 Nov 2026	Physical	$6,000
23 Nov 2026	27 Nov 2026	Physical	$6,000

Ready to enroll or request a customized program? Book online or contact us:

Register Online Now

Email: info@fineskilltrainingcenter.com | Website: www.fineskilltrainingcenter.com