

Fraud Detection: Classification & Clustering Models

Learn to build classification, regression and clustering models to detect fraud and assess risk from raw data.

5 Days

DURATION

8

MODULES

28

TOPICS

COURSE OVERVIEW

This course covers applying data science to business problems, including initiating projects and understanding fraud and risk. It addresses extracting, transforming and loading data, then analysing it through visualisation and distribution exploration, with emphasis on identifying fraud and risk patterns. It covers designing a machine learning approach and developing classification, regression and clustering models for fraud detection, risk assessment and anomaly detection. It concludes with communicating results, demonstrating models in a web application, and implementing production pipelines, illustrated through fraud and risk case studies.

WHO THIS COURSE IS FOR

Data Scientists

Data Analysts

Fraud Analysts

Risk Analysts

Machine Learning Engineers

LEARNING OBJECTIVES

- Apply data science techniques to solve business problems
- Process and analyze data for meaningful insights
- Develop machine learning models for classification, regression, and clustering
- Evaluate and communicate the results of data science projects, with a focus on fraud detection and risk analysis

8 Modules, 28 Topics

01

Addressing Business Issues with Data Science

TOPICS

- Initiate a Data Science Project
- Formulate a Data Science Strategy

UNDERSTANDING FRAUD AND RISK IN BUSINESS

- Impact of fraud and risk on organizations
- Case studies of data science applications in fraud detection and risk management

02

Extracting, Transforming, and Loading Data

TOPICS

- Extract Data
- Transform Data
- Load Data

DATA PREPROCESSING FOR FRAUD AND RISK ANALYSIS

- Techniques for preparing fraud and risk datasets

03

Analyzing Data

TOPICS

- Examine Data
- Explore the Underlying Distribution of Data
- Use Visualizations to Analyze Data

ANALYZING FRAUD AND RISK DATA

- Techniques for identifying anomalies and patterns

04

Designing a Machine Learning Approach

TOPICS

- Identify Machine Learning Concepts
- Test a Hypothesis

RISK FACTORS IN DATA

- Understanding key variables impacting risk and fraud

05

Developing Classification Models

TOPICS

- Train and Tune Classification Models
- Evaluate Classification Models

FRAUD DETECTION WITH CLASSIFICATION MODELS

- Use case examples and evaluation metrics specific to fraud detection

06

Developing Regression Models

TOPICS

- Train and Tune Regression Models
- Evaluate Regression Models

RISK ASSESSMENT WITH REGRESSION MODELS

- Use case examples in assessing risk (e.g., credit scoring)

07

Developing Clustering Models

TOPICS

- Train and Tune Clustering Models
- Evaluate Clustering Models

CLUSTERING FOR ANOMALY DETECTION

- Techniques for identifying unusual patterns indicative of fraud

08

Finalizing a Data Science Project

TOPICS

- Communicate Results to Stakeholders
- Demonstrate Models in a Web Application
- Implement and Test Production Pipelines

CASE STUDIES IN FRAUD AND RISK ANALYSIS

- Present case studies showcasing successful projects

WHAT IS INCLUDED

Everything You Need to Succeed

- Koenig course material for every module
- Hands-on exercises throughout the course
- Delivery by certified instructors and subject matter experts
- Course completion certificate from Koenig

ABOUT KOENIG

Who We Are

Established in 1993, Koenig Solutions is a globally recognised training provider with 35+ technology partnerships, 5,000+ training programmes and a network of certified instructors and subject matter experts, supporting individuals and enterprise teams worldwide.

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