KOENIG
step forward

KOENIG SOLUTIONS · COURSE OUTLINE

Blockchain & ML: Smart Contracts & Decentralized AI

Learn to combine blockchain and machine learning to build smart contracts and decentralized AI applications.

3 Days	10	24
24 HOURS	MODULES	TOPICS

COURSE OVERVIEW

This course covers blockchain fundamentals, including architecture, consensus mechanisms, and applications such as cryptocurrencies, supply chain management, and decentralized applications, along with hands-on deployment of a basic smart contract. It then examines machine learning essentials, covering supervised, unsupervised, and reinforcement learning, model training and evaluation, and building a predictive model in Python. The course concludes by integrating both technologies, exploring securing ML models with blockchain, decentralized AI, and blockchain for data integrity, along with use cases in fraud detection, IoT, and predictive maintenance, before a capstone project developing a blockchain-ML application.

WHO THIS COURSE IS FOR

- **Blockchain Developers**
- **Machine Learning Engineers**
- **Data Scientists**
- **AI Developers**
- **Supply Chain Analysts**
- **Fraud Analysts**

LEARNING OBJECTIVES

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

- Understand the fundamentals of blockchain technology and its architecture
- Apply machine learning concepts for predictive analysis and decision-making
- Explore the intersection of blockchain and machine learning
- Implement basic smart contracts integrated with AI models
- Analyze practical use cases and solutions combining the two technologies

COURSE SYLLABUS

10 Modules, 24 Topics

DAY 1 Blockchain Technology

01
Introduction to Blockchain

TOPICS

Definition and Components · Public vs. Private Blockchains · Consensus Mechanisms (PoW, PoS, etc.)

02
Blockchain Applications

TOPICS

Cryptocurrencies · Supply Chain Management · Decentralized Applications (DApps)

03
Hands-On Session

TOPICS

Setting up a Private Blockchain · Deploying a Basic Smart Contract

DAY 2 Machine Learning Essentials

01
Introduction to Machine Learning

TOPICS

- Supervised, Unsupervised, and Reinforcement Learning
- Overview of Algorithms (Regression, Decision Trees, Neural Networks)

02
Model Training and Evaluation

TOPICS

Data Preprocessing · Feature Engineering · Training and Testing

03
Hands-On Session

TOPICS

- Building a Predictive Model Using Python (e.g., Scikit-learn)
- Evaluating Model Performance

DAY 3 Blockchain and Machine Learning Integration

01
Synergy Between Blockchain and ML

TOPICS

Securing ML Models with Blockchain · Decentralized AI · Blockchain for Data Integrity in ML

02
Use Cases and Industry Applications

TOPICS

Fraud Detection in Financial Systems · Decentralized AI Models for IoT · Predictive Maintenance in Supply Chain

03
Practical Implementation

TOPICS

- Integrating Smart Contracts with ML Models
- Building a Decentralized Predictive Analytics App

04
Capstone Project

TOPICS

- Design and Develop a Blockchain-ML Application

WHAT IS INCLUDED

Everything You Need to Succeed

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

FLEXIBLE DELIVERY

Learn the Way That Suits You

Classroom Training | Live Online Classes (ILO) | Fly-Me-A-Trainer (FMAT) | Flexi (Self-Paced) | 1-on-1 Training

Ready to Get Started?

Talk to a learning advisor about schedules, group training and customised delivery.

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