

Blockchain with AI Internship

(15 Days | Practical-Oriented | Industry Ready)

INTERNSHIP SYLLABUS

Internship Objectives

- Understand **Blockchain fundamentals & AI integration**
- Build **Smart Contracts** with AI-driven logic
- Develop **decentralized applications (DApps)**
- Apply **Machine Learning** in Blockchain use cases
- Gain confidence to build **final-year & real-world projects**

DAY 1 – Introduction to Blockchain & AI

- Blockchain basics (Bitcoin vs Ethereum)
- AI overview & real-world applications
- Blockchain + AI use cases
- Tools setup (MetaMask, Python, VS Code)

Practical:

Install tools & environment setup

DAY 2 – Blockchain Architecture

- Blocks, hashes, Merkle trees
- Public vs Private vs Consortium Blockchain
- Consensus mechanisms (PoW, PoS)

Practical:

Create simple blockchain using Python

DAY 3 – Smart Contracts Fundamentals

- Smart contract concepts
- Ethereum Virtual Machine (EVM)
- Solidity basics

Practical:

Write first Solidity smart contract

DAY 4 – Smart Contract Development

- Variables, functions, modifiers
- Events & error handling
- Gas optimization

Practical:

Deploy smart contract on local blockchain

DAY 5 – Web3 & DApp Basics

- Web3.js / Ethers.js introduction
- Connecting frontend with blockchain
- MetaMask integration

Practical:

Simple DApp interaction with smart contract

DAY 6 – AI Fundamentals for Blockchain

- Machine Learning overview
- Supervised vs Unsupervised learning
- AI model lifecycle

Practical:

Train a basic ML model using Python

DAY 7 – Data Analytics in Blockchain

- Blockchain data analysis
- Transaction pattern analysis
- Fraud detection overview

Practical:

Analyze blockchain transaction dataset

DAY 8 – AI-Based Fraud Detection

- Fraud & anomaly detection techniques
- AI models for fraud prediction
- Blockchain security challenges

Practical:

Fraud detection ML model implementation

DAY 9 – Integrating AI with Smart Contracts

- Oracle concepts
- AI prediction → smart contract decision
- Automation using AI outputs

Practical:

AI-based decision trigger in smart contract

DAY 10 – Blockchain Security & Privacy

- Common attacks (51%, reentrancy)
- AI for security monitoring
- Secure smart contract practices

Practical:

Vulnerability testing using tools

DAY 11 – Decentralized AI Applications

- Decentralized AI concepts
- AI marketplaces on blockchain
- Federated learning basics

Practical:

Build decentralized AI workflow (demo)

DAY 12 – Real-Time Use Case Development

- AI + Blockchain in healthcare, finance, supply chain
- Architecture planning

Practical:

Design final project architecture

DAY 13 – Mini Project Development

- Smart contract + AI model integration
- Frontend & backend connectivity

Practical:

Mini Project Implementation

DAY 14 – Testing, Deployment & Optimization

- Smart contract testing
- AI model performance tuning
- Deployment on testnet

Practical:

Deploy complete project on testnet

DAY 15 – Project Presentation & Evaluation

- Final project demo
- Viva & technical assessment
- Career guidance & roadmap

Deliverables:

Project Report

Source Code

Internship Certificate

Tools & Technologies

- Solidity, Ethereum, Remix
- Python, Scikit-learn
- Web3.js / Ethers.js
- MetaMask, Ganache
- VS Code, GitHub