

Metaverse, XR and Crypto Foundations

Virtual experiences, blockchain concepts and a guided avatar lab

FA-0770 · 2 days

Software Development · Others

Introduction

Explore virtual-world experiences, extended reality and the role blockchain can play in digital assets. Compare use cases and development tools, then build a small avatar or scene using a prepared environment. The course is an introductory survey with a guided lab, not comprehensive engine training or an investment programme.

Learning outcomes

- Distinguish AR, VR and MR and describe their uses in simulation and virtual experiences.
- Explain blockchain, smart contracts, fungible tokens and NFTs in the context of digital assets.
- Evaluate social, gaming, fitness, work and education use cases and possible business models.
- Compare Unity, Unreal Engine and Blender and complete a guided avatar or scene workflow.

Prerequisites

- Good understanding of Blockchain and NFTs
- Basic high-school mathematics.
- Programming in either python or java
- Web development fundamentals

A suitable computer, permission to install the selected tools and reliable internet access.

Training outline

1. Day 1 — Virtual experiences and enabling technologies

- Metaverse concepts, industry applications, experience development cycles and user interaction loops.
- AR, VR and MR: distinctions, training simulation and potential benefits.
- An introductory view of AI applications within virtual experiences.
- Use cases in social interaction, gaming, fitness, work and education.

2. Day 1 — Blockchain, assets and business models

- Blockchain adoption, smart contracts, digital tokens, NFTs and cryptocurrencies.
- Web3 concepts and the relationship between virtual platforms and blockchain; not every virtual experience requires a blockchain.
- Monetisation approaches and market opportunities evaluated as design and business choices, not promised returns.
- An NFT records token ownership; associated usage rights and cross-platform support depend on the asset, licence and application.

3. Day 2 — Development tools and guided lab

- Compare Unity and Unreal Engine for real-time experiences and Blender for asset creation.
- Prepare the development environment, editor and lab materials for one selected workflow.
- Design and build a simple avatar or scene; run or deploy it to the prepared target.
- Review the result and complete the course assessment.

Tool comparisons are demonstrations; the hands-on work uses one prepared stack. Amazon Sumerian and Spark AR are not required lab platforms.