Indian Institute of Technology Kharagpur

Centre for Teaching Learning and Virtual Skilling (CTLVS)

Short Term Course on Augmented Reality and Virtual Reality Using Unity

1st July –5th July 2025

Course Overview

This five-day intensive workshop is designed to introduce faculty members, research scholars, and industry professionals to the fundamentals of Augmented Reality (AR) and Virtual Reality (VR) development using Unity. The workshop will equip participants with hands-on experience in building AR/VR applications from scratch using industry-standard tools and techniques. It emphasizes experiential learning through guided tutorials and project-based activities that foster both foundational understanding and practical skills.

Key Topics Covered

- Fundamentals of AR/VR: Concepts, Trends, and Use Cases
- Unity Interface, GameObjects, Components, and Scene Creation
- Implementing Physics: Colliders, Rigidbodies, and Triggers
- AR Development: SDK Integration and Image Tracking
- VR Development: Camera Setup, Basic Interaction, Hand Tracking
- OpenXR and Cross-platform Deployment

Course content

Day 1:

Morning: Introduction to AR/VR: Concepts and Applications

Afternoon: Basics of Unity: Interface and Navigation

Day 2:

Morning: Unity Fundamentals: GameObjects and Components

Afternoon: Hands-on: Simple Scene Creation in Unity

Day 3:

Morning: Unity Physics: Colliders, Triggers, and Rigidbodies

Afternoon: Hands-on: Implementing Basic Physics Interactions

Day 4:
Morning: Introduction to AR Development in Unity
Afternoon: Hands-on: AR Application Development

Day 5:
Morning: Introduction to VR Development in Unity
Afternoon: Hands-on: Basic VR Application Development

Course benefits

- Learn to design and implement AR/VR applications using Unity, AR Foundation, and VR SDKs.
- Build working AR/VR prototypes that can be applied in education, healthcare, manufacturing, marketing, and other domains.
- Acquire hands-on experience with GameObjects, Components, Physics, and XR integration in Unity.
- Understand how to design applications compatible across different hardware platforms using OpenXR.

Expert

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