





### **About Us**

CASTLE, or CAS-Training-Learning-Empowerment, nurtures young talents within CAS. We provide comprehensive training to enhance skills and capabilities. Our goal is to secure promising placements both internally and externally. We aim to empower individuals and cultivate a culture of opportunity worldwide.



We Train with purpose, inspire with passion, and empower with knowledge



## AUGMENTED REALITY

Augmented reality (AR) blends
digital content with the real world,
offering immersive experiences
through devices like smartphones or
AR glasses. It enhances perception
by overlaying virtual elements onto
physical environments, with
applications spanning gaming,
education, healthcare, and retail





We can help everyone

Virtual Reality (VR) is a computer-generated simulation of an immersive environment that can be interacted with in a seemingly real or physical way by a person using special electronic equipment, such as a VR headset or gloves. It often involves 3D environments and can simulate experiences ranging from realistic to fantastical, providing users with an unparalleled sense of presence and immersion. VR technology is used in various fields, including gaming, entertainment, healthcare, education, and training.









START YOUR

LEARNING

JOURNEY TODAY



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## **COURSE CURRICULUM**



# Introduction to Augmented Reality and Virtual Reality Development using Unity

#### INTRODUCTION TO AR AND VR

- Overview of AR & VR Technologies
- Applications and use cases of AR/VR
- Comparison between AR and VR

#### **UNITY BASICS**

- Introduction to Unity interface
- Creating projects and scenes
- Navigating the Unity Editor

#### **UNITY SCRIPTING FUNDAMENTALS**

- Introduction to C# scripting in Unity
- Variables, data types, and operators
- Control flow: loops and conditionals

#### **WORKING WITH UNITY ASSETS**

- Importing and managing assets in Unity.
- Understanding prefabs and Game Objects.
- Introduction to Unity's asset store

#### **BUILDING AR APPLICATIONS**

- Introduction to AR development in Unity
- Implementing marker-based AR
- Integrating AR Foundation for cross-platform AR development

#### **BUILDING VR APPLICATIONS**

- Introduction to VR development in Unity Setting up VR hardware
- Implementing basic VR interact.



#### INTERACTION DESIGN IN AR/VR

- Design principles for immersive experiences
- Implementing user interactions in AR/VR
- Incorporating audio and visual feedback.

## **OPTIMIZING PERFORMANCE FOR AR/VR**

- Understanding performance considerations in AR/VR
- Techniques for optimizing rendering performance
- Best practices for minimizing latency

### **DEPLOYING AR/VR APPLICATIONS**

- Building and deploying AR/VR applications for different platforms
- Publishing to mobile devices and VR headsets.

Testing and debugging AR/VR applications



## ADVANCED TOPICS IN AR/VR DEVELOPMENT

- Introduction to advanced AR features (e.g., plane detection, object recognition)
- Exploring VR locomotion techniques
- Introduction to mixed reality

#### **PROJECT DEVELOPMENT**

- Mentored guidance and feedback sessions
- Iterative development and refinement of AR/VR applications

#### **PROJECT DEVELOPMENT**

- Final project presentations
- Demonstration of AR/VR applications
- Peer feedback and reflection