

# SANJYOT DAHALE

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Senior Unreal Engine Engineer with 5+ years of experience building real-time gameplay systems, performance-critical tools, and shipping interactive experiences on constrained platforms.

## WORK EXPERIENCE

### LIMINAL XR SOLUTIONS

Senior Unreal Engine Engineer (Gameplay / Real-time systems) | Jan 2023 - Current

- Managed a cross-functional team of 7 through the full SDLC leading to the successful publishing of [Riddler's Ransom](#) on the Meta Quest Store.
- Developed custom C++/Blueprint modules, including a multiplayer server-client framework and WebSocket system for real-time XR experiences.
- Architected a high-bandwidth stadium-to-CDN 360° VR broadcast pipeline for IPL 2023, managing real-time video ingestion, encoding, and global delivery for live audiences.
- Co-authored a published technical paper in the [SMPTE Motion Imaging Journal](#) and currently leading internal R&D on automation and AI-assisted tooling to improve developer productivity across engineering and content pipelines.

### LIMINAL XR SOLUTIONS

Unreal Engine Developer / VP Supervisor | Aug 2020 - Jan 2023

- Researched and implemented end-to-end Virtual Production workflows (ICVFX, Green-screen, Previz) in Unreal Engine, establishing the company's foundational real-time rendering standards.
- Integrated complex hardware ecosystems into Unreal Engine, including stype/Mo-Sys camera tracking, XSens/Qualisys Motion Capture, and Blackmagic Design broadcast hardware.
- Defined graphical limitations and performance budgets for asset teams, performing optimization passes on lighting, shaders, and geometry to maintain real-time broadcast and production frame rates.
- Standardized the organization's development pipeline by establishing GitHub for primary version control, while deploying Perforce for specialized projects.
- Spearheaded the hiring and technical onboarding of Unreal Engine developers and artists, designing training modules for advanced engine workflows and real-time best practices.

## PROJECTS

### RIDDLER'S RANSOM | META QUEST 3 (UNREAL ENGINE)

- Spearheaded the technical migration of a PC-VR game jam prototype to the Meta Quest 3 standalone platform using the Meta-fork of Unreal Engine.
- Improved performance from **40 FPS to a stable 72 FPS** through rigorous creative asset optimization and technical profiling.
- Managed the end-to-end packaging and submission process, ensuring all technical and performance requirements for the Meta Quest Store were met.

### MIXED REALITY CRICKET ANALYTICS FOR BROADCAST | PC (UNREAL ENGINE)

- Architected a custom multiplayer server-client system to visualize Mixed Reality simulations using Virtual Production for real-time broadcast.
- Led a massive Blueprint-to-C++ port of the core application logic, resulting in a **70% increase in performance** for complex simulation scenarios.
- Co-authored a peer-reviewed technical paper in the [SMPTE Motion Imaging Journal](#) detailing the system's novel integration of MR and live broadcast pipelines.

## MONTRA ELECTRIC RACING | PC (UNREAL ENGINE)

- Integrated Logitech G29 SDK for immersive haptic feedback by building a modular, reusable C++ plugin.
- Engineered a simple administrative server-client module to synchronize race states across local clients.
- Helped refine vehicle physics, handling parameters and level design through iterative testing to improve driving feel for the players.

## REFRAME 360 - A VR TO 2D WARPING TOOL | R&D PROJECT (UNREAL ENGINE)

- Engineered a low-latency video pipeline in Unreal Engine that uses **custom HLSL shaders** to transform live 4K equirectangular VR feeds into standard 2D broadcast perspectives, such as 'Tiny Planet' or wide-angle views.
- Created an operator preset and UI system using Blueprints and UMG to allow real-time color grading and camera manipulation via game controllers.

## SKILLS

### Languages

C++

Unreal Blueprints

HLSL

GScript

Python

### Engines/Tools

Unreal Engine 4/5

Godot 4

OpenGL

Visual Studio

Perforce

Git

### Hardware

Motion Capture (Qualysis, XSens)

Camera Tracking (stYpe, Mo-Sys)

## PUBLICATIONS

### IMMERSIVE AND INTERACTIVE AR GRAPHICS AND ENVIRONMENTS FOR BROADCAST APPLICATIONS

SMPTE Motion Imaging Journal | Jul 2024

DOI: 10.5594/JMI.2024/IHPC9661

## EDUCATION

### UNIVERSITY OF MUMBAI

Bachelor of Engineering: Computer Engineering | Jan 2016 - Oct 2020

## CERTIFICATIONS

### COMPUTER GRAPHICS WITH MODERN OPENGL AND C++

Udemy | Jan 2025

### UNREAL ENGINE C++ DEVELOPER: LEARN C++ AND MAKE VIDEO GAMES

Udemy | Aug 2019

## LANGUAGES

English

Fluent

Marathi

Native

Hindi

Native