

Kalpan Agrawal

Software Developer – (C++ / Python)

Portfolio: <https://kalpan-ag.github.io/>

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Skills

Programming Languages: C++, C#, Python, Unreal Visual Blueprint, ReactJS (JavaScript), OpenGL

Software: Unity, Unreal Engine, Eclipse CDT, Spring Boot, Davinci Resolve, ReactJS

Platforms: Windows, Android, AR, and VR Headsets (Meta Quest, HTC Vive, Pico, Varjo, HoloLens 2)

Core Competencies: Problem-Solving, Adaptability, Cross-functional Collaboration

Soft Skills: Quick Learner, Leadership, Organizational Skills, Attention to Detail

Experience (Cumulative: ≈ 6 Years)

Sonesta Essentials Beaumont, Texas IT and Operations Manager

July 2024 – Aug 2025 (1 Year, 2 Months) | On-Site

Managerial and Leadership

- Spearheaded the **technical and operational launch** of the new hotel, collaborating closely with **cross-functional** teams (brand management, franchise managers, and marketing).
- **Executed** the integrated technical launch, leading to the hotel **achieving full occupancy within six months** of opening.
- Managed and ensured **24/7 reliability** of all on-site company software and **Property Management Systems (PMS)**.
- Provided comprehensive technical support and served as the **primary point of contact for operational continuity** to staff across all departments.

Technical and Operational

- Designed, configured, and maintained **critical network infrastructure**, including Local Area Networks (LANs), high-speed Wi-Fi access points, and the facility's CCTV security camera systems.
- Performed hands-on **hardware troubleshooting**, minor repairs, and system maintenance to minimize downtime.
- Maintained network infrastructure to ensure reliable connectivity for the **PMS database servers** and back-office operations.

Unreal and C++ Freelance Developer

May 2023 - July 2024 (1 Year, 2 Months) | Remote

- Utilized **Unreal Engine** and **C++** to integrate advanced features: **dynamic physics**, **AI behavior**, and **multiplayer networking**.
- Developed **immersive** and **interactive** gaming applications across diverse industries (education, healthcare, and entertainment).
- Collaborated effectively with clients and large **30-50 member teams**, ensuring transparent communication and project alignment.

Experience Design Labs, NEU

Jan 2023 - May 2023 (5 Months) | Boston, MA, USA

Research Assistant for Game and VR Development

- Designed and developed a **Unity VR Simulation** with **hand tracking** for real-time interaction with a Virtual Robotic Workbench (**C#/C++**).
 - Set up **Game Logic**, **Multiplayer**, and Gameplay Systems using **C++** within **Unity VR**.
 - **Engineered a robust data pipeline** between the **Unity simulation** and the **MuJoCo robotic framework** to enable real-time bi-directional data exchange.
 - Contributed to a **30-person research team**, achieving a gamified experience that **boosted user interactions by 40%** in a MuJoCo-based robotic environment.
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Immersive Media Lab, NEU

Sept 2021 - Dec 2022 (1 Year, 4 Months) | Boston, MA, USA

VR Developer

- Developed mini-projects using **Unity 2021 LTS**, **C#**, and **C++** on various **AR** and **VR devices** (**Quest Pro**, **Varjo VR-3**, **Pico Neo 4**).
- Optimized projects to ensure **60+ FPS performance** on low-end devices, improving usability and accessibility.
- Leveraged profiling tools** and advanced rendering techniques (e.g., **SRP/VFX**) to manage asset complexity and **optimize GPU performance** across all target devices.
- Conducted in-depth **research on VR/AR platforms**, staying current with emerging development trends.

AI Mulla Exchange Group

Sept 2019 - Aug 2021 (2 Years) | Mumbai, Maharashtra, India

AI Engineer (Sept 2020 - Aug 2021)

- Led SDLC management** for **3 long-term AI projects**: **Face Recognition**, **Smart Chatbot**, and a **Python-based Data Management System**.
- Mentored and trained 3 Python ML interns**, who subsequently converted to full-time AI Engineers, significantly expanding the team's capacity and expertise.
- Developed **ML solutions** (secure **Face Recognition** login, customer support **Smart Chatbot**) using advanced models including **Random Forest**, **Neural Networks**, **BERT**, and **Cluster-Based ML relearning models**.

Junior Software Developer (Sept 2019 - Aug 2020)

- Designed, developed, and maintained **high-traffic Web APIs** in **Python** and **C++** to support over **1 million daily transactions** against a **SQL Server** backend.
- Automated CI/CD pipelines** and integrated testing frameworks, which **reduced production build failures by 25%** and **cut deployment time** from 2 hours to 30 minutes.
- Functioned as a key member of a **40-engineer agile team**, rapidly delivering **over 50 bug fixes and feature enhancements** by utilizing **JIRA** and **Git** for version control.

Education		
M.S. in Game Science and Design (GPA: 3.71)	Northeastern University	2021-2023
B.E. in Computer Engineering	University of Pune	2015 - 2019