SHREYAS NISAL

Software Engineer- VR, Gameplay and Engine Systems

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SKILLS

Languages: C++, C#, Java, JavaScript, Python   **Game Engines**: Unreal, Unity

Tools and Technologies: Perforce, Git, DirectX, OpenGL, WebGL, Virtual Reality, OpenXR, WebXR, Visual Studio, ReactJS, React Native, NodeJS, Windows APIs, Linux, Android, 3D Math, Linear Algebra, 3D Rendering

PROJECTS

Rey Engine: Custom C++ Game Engine | *C++* | *DirectX 11* | *OpenXR*   **Aug 2023 – May 2025**

- Developed a custom game engine with a DirectX-11 rendering pipeline supporting 2D and 3D rendering.
- Created custom math and physics utilities including vectors, Euler angles and matrices for collisions and raycasts.
- Authored reusable core engine systems including a multithreading system, a networking system with TCP connections using web sockets and a VR system built using OpenXR.
- Used the engine for several 2D, 3D and VR games including a first-person shooter, a 3D tower-defense game with data-driven architecture and a voxel-based infinite, deterministic world generator.

ArchiLeap: VR Platformer with an In-game Level Editor | *Rey Engine*   **Aug 2024 – May 2025**

- Engineered a reusable VR system using OpenXR and used it to integrate VR in past projects.
- Implemented first-person platformer mechanics using custom physics utilities with intuitive 6-DoF VR interactions.
- Built a designer-friendly in-game level editor for User-Generated Content (UGC) with Perforce support for collaboration.
- Polished the PC and VR editing experience through iterations with designers and usability testing feedback.

Rey Web Engine: **Custom JavaScript Engine** | *JavaScript* | *WebGL* | *WebXR*   **Jan 2025 – May 2025**

- Developed a custom in-browser game engine with a WebGL rendering pipeline supporting 2D and 3D rendering.
- Created math and physics utilities and core engine classes including a custom parser for 3D models from OBJ files.
- Used the engine to build an in-browser 3D scene with immersive VR support and a 2D top-down physics-based game.
- Implemented a GitHub workflow for automatic engine and per game versioning using commit message parsing.

EXPERIENCE

Lead Engineer (Imvi: Echoes of Harmony) | *SMU Guildhall* | *Unreal 5.4* | *Team Size: 23*   **Jul 2024 – Dec 2024**

- Collaborated on 3C's challenges for a third-person open-world exploration game with Unreal custom gravity.
- Worked with cross-discipline teams on implementing game mechanics and system design for space traversal.
- Handled sprint planning and backlog refinement in Jira, milestone delivery documents and progress presentations.
- Set up a Python script for daily builds using Unreal Automation Tool (UAT) and uploads to Steam and Epic Games Store.
- Worked on customizing the Advanced Menu System for the custom game UI.
- Tackled game optimization using Unreal tools and Trace server for shaders, lights, Niagara VFX and Unreal Landscape.

Tools Engineer (Fastival) | *SMU Guildhall* | *Unreal 5.3* | *Team Size: 50*   **Jan 2024 – Jun 2024**

- Supported cross-discipline teams on urgent and high-priority tasks on race logic, UI and optimization.
- Implemented multiplayer controls for menu UI with UMG and Enhanced Input System.
- Built windows executables and managed configuration for Linux builds for Steam Deck compatibility.

Gameplay Engineer (DonuTilt) | *SMU Guildhall* | *Unity* | *Team Size: 5*   **Sep 2023 – Dec 2023**

- Authored input mechanics for the game involving tilt-based controls using Unity Input accelerometer with dead-zone correction and tap-based mechanics for world-gravity shifting.
- Created the game's UI with settings stored across user sessions on Android devices.
- Collaborated with a programmer, an artist and a designer to establish the game's mechanics and design goals.

Software Engineer | *Twilio* | *Java* | *MySQL* | *Jenkins* | *AWS*   **Aug 2022 – Feb 2023**

- Worked on developing API endpoints in Java for role-based access control for Twilio users.
- Authored unit and cluster tests working with Jenkins for automated testing and AWS Box for deployments.

EDUCATION

Southern Methodist University, Guildhall

Master of Interactive Technology in Digital Game Development, Software Engineering

Birla Institute of Technology and Science, Pilani

Master of Science, Physics

Bachelor of Technology, Computer Science