SHREYAS NISAL

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PERSONAL PROJECTS

Rey Engine | C++ | DirectX 11 **Aug 2024 – May 2025**

- Developing a custom game engine with a DirectX-11 rendering pipeline supporting 2D and 3D rendering.
- Using the game engine for several projects including a VR level editor and a 3D tower defense game.

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

- Integrated OpenXR with my custom C++ game engine to support development of VR games.
- Developing a first-person Virtual Reality (VR) platformer with an in-game level editor.
- Implementing a level editor for Entity creation, translation, cloning, rotation and scaling using intuitive VR controls.

Rey Web Engine | JavaScript | WebGL **Jan 2025 – May 2025**

- Developing a custom game engine with a WebGL rendering pipeline supporting 2D and 3D rendering.
- Using the game engine for projects including a 3D demo scene and a top-down 2D game.

Throttle Ball | Rey Web Engine **Jan 2025 – May 2025**

- Developed a top-down 2D game that can run in a browser with realistic collision physics.
- Implemented support for Xbox controllers with up to 4-player shared-screen local multiplayer.
- Added a GitHub workflow for automatic versioning with every commit.

ReyTD | Rey Engine **May 2024 – Jul 2024**

- Developed a complete 3D tower defense game with 9 enemy types, 5 tower types and 6 levels.
- Created data-driven architecture to add new maps, environments, tower types, enemy types and levels.
- Implemented an event-driven UI system for the game with support for buttons and sliders.
- Implemented CPU-driven billboarded particles for wind simulated using Perlin noise.

SimpleMiner | Rey Engine **May 2024 – Jul 2024**

- Developed a voxel-based infinite, deterministic world generation system.
- Added support for lighting using influence maps, glowstone flickering, day-night cycles and fog.
- Created rivers and biomes including deserts, oceans, frozen water bodies and forests using Perlin noise.
- Added VR support using OpenXR.

Doomenstein | Rey Engine **Jan 2024 – May 2024**

- Developed a first-person shooter with billboarded 8-facing sprites and directional lighting.
- Implemented 3D model loading and shadow maps and added VR support using OpenXR.

SHIPPED TITLES

Imvi: Echoes of Harmony | Unreal Engine 5 | Lead Programmer | Steam **Jul 2024 – Dec 2024**

- Worked in a team of 23 developers including programmers, producers, level designers and artists.
- Contributed to milestone delivery documents, task planning and stakeholder presentations.
- Assisted programmers with math and code.
- Contributed to UI development using the Advanced Menu System.

Fastival | Unreal Engine 5 | Programmer | Steam **Jan 2024 – Jun 2024**

- Supported cross-discipline teams as a floating programmer on urgent and high-priority tasks.
- Maintained code health through daily builds using a python script on a build server and good perforce practices.
- Implemented the multiplayer system and contributed to the input system and menu UI.

EXPERIENCE

Hearty Adventures in Food and Play Lab | Research Intern **Melbourne** **Mar 2023 – Jul 2023**

- Developed a smartphone game designed to encourage real-world activities that support human gut health.
- Contributed to the design of the app in accordance with the research goals.

Twilio | Software Engineer 1 **Bengaluru** **Aug 2022 – Feb 2023**

- Worked in the Auth team on the Role-Based Access Control (RBAC) platform.
- Contributed to an internal tool and API endpoints that can be integrated with other Twilio products.

MIT Media Lab, Fluid Interfaces | Research Intern **Cambridge** **Jan 2022 – Jul 2022**

- Worked on the KALM project for anxiety management using Affective Brain-Computer Interfaces.
- Designed and developed a neurofeedback training protocol using electroencephalography.

Exertion Games Lab | Research Intern **Melbourne** **Jul 2021 – Dec 2021**

- Explored Electrical Muscle Stimulation (EMS) for novel interactions between users and systems.

- Designed social bodily games using EMS to study shared agency between multiple users and the EMS system.

Twilio | Software Engineering Intern **Bengaluru** **Jun 2021 – Jul 2021**

- Contributed to the Role-Based Access Control (RBAC) platform using the vaadin framework.
- Developed API endpoints for the access manager service (XMS).

EDUCATION

Southern Methodist University, Guildhall **Aug 2023 - Present**
Master of Interactive Technology, Software Development

Birla Institute of Technology and Science, Pilani **Aug 2017 – Jul 2022**
Master of Science, Physics
Bachelor of Technology, Computer Science

PUBLICATIONS

Shared Bodily Fusion: Leveraging Inter-Body Electrical Muscle Stimulation for Social Play | ACM Digital Library **DIS 2024**

Go-Go Biome: Evaluation of a Casual Game for Gut Health Engagement and Reflection | ACM Digital Library | YouTube **CHI 2024**

Joie: A Joy-based Brain-Computer Interface (BCI) | ACM Digital Library | YouTube **UIST 2023**

Demonstration of Joie: A Joy-based Brain-Computer Interface (BCI) with Wearable Skin Conformal Polymer Electrodes | ACM Digital Library **UIST 2023**

Fused Spectatorship: Designing Bodily Experiences Where Spectators Become Players | ACM Digital Library | YouTube **CHIPlay 2023**

TouchMate: Understanding the Design of Body Actuating Games using Physical Touch | ACM Digital Library | YouTube **CHIPlay 2022**

SKILLS

C, C++, C#, Java, JavaScript, HTML/CSS, Python, OpenGL, DirectX11, WebGL, GLSL, HLSL, Perforce, Visual Studio, RenderDoc, Unreal Engine (Blueprint/C++), Unity, OpenXR, NodeJS, React, React Native, Flutter, Arduino