K U Minnakan Seral

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Education

University of California, Riverside — Riverside, CA
Master of Science in Computer Engineering - 3.85 GPA — *Sept 2023 – Present*

City, University of London — London, UK
BSc (Hons.) Computer Science with Games Technology — *Sept 2017 – Aug 2020*

Experience

Unity Programming Intern — Mar 2024 – present
Brain Game Center (UCR) — *California, USA*

- Actively contributing as a part-time developer in creating cognitive-based games rooted in research conducted at the BGC.
- Proficiently integrated tutorial screens featuring dynamic animations and maintained consistent styling throughout various game projects.

Unreal Engine Developer — Jan 2021 – Jul 2023
Renderpub — *Bangalore, India*

- Developed a 3D rendering application for Arch-Viz using Unreal Engine 4.
- Implemented key features including user authentication, sky/weather systems, and 3D model import/export.
- Ported three.js to Unreal Engine to provide runtime scripting functionalities for the application.
- Utilized OpenCV and Assimp for export functionalities and made API calls to upload files to an R2 bucket for web-based walkthroughs.
- Led product development strategy, managing a team to deliver a beta version successfully.
- Developed client projects, including a VR driving simulator and a multiplayer experience for the Oculus Quest, deploying a multiplayer server on AWS Gamelift.

Projects

Third-person shooter game project -BD-2056 / *C++, Unreal Engine*

- Created a third-person game using Unreal Engine 5, implementing player character animations from Mixamo with blend spaces and state machines.
- Designed and implemented a weapon wheel system with UMG UI, including Aim Down Sights (ADS) functionality.
- Enhanced gameplay visuals with realistic bullet impact decals using Unreal materials.

Pyramid defense and Space run / *C++, OpenGL, GLSL, Blender*

- Developed a 3D FPS game and a spline-based pickup game using OpenGL and C++.
- Implemented a basic physics system, rendering shapes and models using element buffers, including background mountains from a height map, and utilized custom GLSL shaders.
- Integrated both orthographic and perspective cameras, utilizing forward rendering techniques to optimize lighting effects.

Unity - ML Agents Reinforcement learning / *Unity, Python, PyTorch*

- Explored the application of reinforcement learning (RL) in Unity using ML-Agents and OpenAI gym in various simulated environments.
- Utilized algorithms such as Soft Actor-Critic (SAC), Deep Deterministic Policy Gradient (DDPG), and Deep Q-Networks (DQN) to train agents in five primary example scenes: Basic, 3D Balance Ball, Grid World, Push Block, and Worm.
- Developed and benchmarked the performance of agents, achieving notable results in complex tasks including balance control, navigation, and object manipulation.

Technical Skills

Languages: C++, C#, GLSL, Python, Java, SQL, JavaScript, HTML/CSS.
Frameworks: Unreal Engine, Unity.
Developer Tools: Git, Visual Studio, Postman, Bash.
Libraries: OpenGL, OpenCV, ThreeJS, NumPy, Pandas, PyTorch, TensorFlow.