VIRAJ SHIRODKAR

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Portfolio • LinkedIn • GitHub

Education

Master of Science, Game Science and Design
Northeastern University, Boston (**GPA 3.93/4.00**) May 2023
Related coursework: Computer Graphics, Building Game Engines, Game AI

Bachelors in Electronics Engineering July 2020
University of Mumbai, India

Experience

Software Engineer Intern June 2022 - August 2022
Age of Learning, Inc, Glendale, CA

- Implemented spine animations for a map system developed with **C#** on **Unity game engine**; all assets were bundled and deployed through a **dependency injection framework**
- Designed and programmed a sequential animation system for a row-based category page consisting multiple activity buttons by utilizing **asynchronous programming concepts**, **interfaces**, and **events**
- Quickly understood the source code and extended/modified existing logic to resolve outstanding backlogged bugs in a live feature in a non-disruptive way
- Initiated in technical discussions and collaborated with team members on features and functionality and documented technical design on JIRA and Confluence
- Collaborated closely with design and quality assurance teams to get code merge ready

Immersive Media Lab Associate January 2022 - Present
Northeastern University, Boston, MA

- Contributed to development of **Unity** and **Unreal VR** projects for Massachusetts General Hospital
- Conducted and delivered Unity 3D and VR game engine training programs for multiple student research projects
- Facilitated students with software development and **biometric user research** techniques such as **eye tracking**, **EEG**, and **GSR**; and created tutorials for Pico Neo 3, Valve Index, Oculus Quest, HTC Vive Pro and Microsoft HoloLens

Graduate Teaching Fellowship September 2021 - December 2021
Northeastern University, Boston

- Conducted **in-person lectures**, managed and graded students for an undergraduate course of **HTML** and **CSS**

Projects

2D GAME ENGINE

- Created a 2D game engine using **C++**, **SDL2** with also using **Box2D** (open-source physics simulator)
- Built three games using the engine – Breakout clone, Platformer, and a Dungeon Crawler
- Engine can handle **physics**, **collisions**, **rendering** and **animations** while also having a **level editor** with an UI

CLASH ROYALE CLONE AI

- Developed an **AI** opponent for a clash royale clone using **behavior trees**
- Implemented **A* pathfinding algorithm** for the mobs with **steering behaviors** for mobility and collision avoidance

3D OBJECT MODEL PARSER

- Parse and render .obj files with vertex, texture, and normal data with help of 3D math using **C++** and **OpenGL**
- Rendered these models with **vertex** and **fragment shaders** using **GLSL**

Publications

Magic Mirror on the Wall: Reflecting the Realities of Lower Limb Rehabilitation in Virtual Reality
CHI 2022, New Orleans | IEEE ISMAR, Singapore

- Based on medical research-oriented VR project for patient engagement with rehabilitation protocols

Skills

Programming languages: C/C++, C#, Python, Java, HTML/CSS
Technologies: Unity, Unreal, OpenGL, SDL2, Blender