

Spencer Lin

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Education

University of Southern California (2020-2025 Spring)

Major: Computer Science
Master's: Computer Science
Minor: Immersive Media
GPA: 3.43

Relevant Coursework

Software Engineering | Video Game Programming
NLP for Interactive AI | Introduction to Robotics
Introduction to Computer Systems
Introduction to Algorithms & the Theory of Computing

Experience

USC Mobile & Environmental Media Lab | Student Researcher

June 2023 - Present

- Developed and showcased at SIGGRAPH 2023 an Immersive Archive VR experience built on Unity + OpenXR + MRTK that digitizes and documents pioneering VR devices such as the Sensorama and Ivan Sutherland HMD
- Developing a WebXR 8th Wall application in partnership with LA Metro Transit, The Huntington Library, and the LA Chinese Historical Society which utilizes geospatial data and visual positioning to superimpose holograms of old Chinatown in its original position at LA Union Station and provide a narrative educational experience

USC MxR Lab | Student Researcher

April 2023 - Present

- Developing a phoneAR application with the National Training Center to teach maintenance of military vehicles

The Aerospace Corporation | Software Engineering Intern

May 2022 - August 2022

June 2023 - August 2023

- Ported from PC to VR and demoed to the Program Office customer a space strategy game that utilizes 6DOF VR to enable users to navigate the battlefield from a "commander's point of view" and with the goal of extending the project into a novel collaborative decision-making environment that sharpens the tactical acumen of trainees
- Added capability and overhauled the UI of a desktop Unity application to visualize multiple cislunar trajectories
- Conducted literature review and compiled open-domain research of how XR can be applied within the domain of the manufacturing, testing and training
- Developed a collaborative AR terrestrial exploration application on the HoloLens 2 that features gps-enabled navigation and dynamic loading of photogrammetric UAV maps
- Developed and documented a pipeline for capturing Digital Terrain Models from Google Earth into Unity
- Prototyped a networked Desktop/AR to AR application for the HoloLens 2 that enables real time collaboration with digital assets specifically for use in environments without access to the world wide web
- Developed a VR application connected to a unified database that simulates concept satellite designs

USC NASA SUITS Team Aegis | Team Lead

January 2022 - September 2023

- Collaborated with NASA personnel and a former astronaut to develop an AR HUD on the HoloLens 2 to assist astronauts on lunar EVAs by minimizing cognitive load and improving safety by incorporating off-cloud NLP, terrain hazard analysis using SLAM, and long range pathfinding features
- Led a multidisciplinary team of 18 students across XR, AI, aeronautical engineering, and UI/UX disciplines
- Designed the system architecture and integrated all features into a cohesive package
- Trained new members on how to develop on Unity and the OpenXR + HoloLens 2 platform
- Authored a 40 page project proposal that was approved by NASA, allowing our team to participate in 2023

USC Makers Club | Project Manager

January 2021 - May 2023

- Led a team to develop a semi-autonomous cat-carrier rover with GPS tracking, analogue video transmission, and computer vision-powered obstacle detection using a Pixhawk and Jetson Nano

For Traum | Game Director

July 2020 - September 2022

- Recruited and led a team of 44 multidisciplinary students from USC, Pasadena ArtCenter, UCLA, and NEU to work on an F2P 2.5D fast-paced platformer for PC/Mac built in Unity
- Directed vision and implementation of the game, coordinating with programming, game design, illustrations, animations, sound, and UI divisions

Skills & Interests

Coding Languages

Proficient

C#, C++, Java

Intermediate

Python, HTML, CSS

Exploring

Batch, Javascript, Ruby

Software

Unity game engine, OpenXR, MRTK, 8th Wall, Vuforia, Cura, ChituBox, ArduPilot, Mission Planner, Betaflight, OpenCV, Git, RenderDoc, Maya, Blender, Fusion 360, Bootstrap, Jekyll

Hardware

HoloLens 2, Valve Index, Quest HMDs, Soldering, FDM & SLA 3D printing, CNC laser cutting