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 with Scott Fisher at SIGGRAPH 2023 an Immersive Archive VR experience that digitizes and documents pioneering VR devices such as the Sensorama and Ivan Sutherland HMD
- Developed a webAR app in 8th Wall that utilizes image targets and plane finding to place a 1:1 scale scan of the Sensorama machine for a commemorable postcard distributed to SIGGRAPH 2023 guests

USC MxR Lab | **Principle Investigator**   *April 2023 - Present*
- Developing a phoneAR app with the National Training Center to teach maintenance of vehicles via digital twins

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
- Conducted literature review and compiled a document of open-domain research of how XR can be applied within the domain of 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 which is currently obtaining a patent
- 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 - Present*
- Collaborates with NASA personnel and a retired 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
- Leads a multidisciplinary team of 18 students across XR, AI, aeronautical engineering, and UI/UX disciplines
- Designs the system architecture and integrates all features into a cohesive package
- Trains 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
- Implemented functionality using OpenCV to locate a pot for a robotic arm designed to assist in cooking

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
- Prototyped core gameplay mechanics in a month

Skills & Interests

Coding Languages	*Proficient*	*Intermediate*	*Exploring*
	C#, C++, Java	Python, HTML, CSS, C	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		