

Spencer Lin

Los Angeles, CA

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Education

University of Southern California (2024-2025 Spring)

Master's: Computer Science (GPA 4.0)

University of Southern California (2020-2024 Spring)

Major: Computer Science (GPA 3.48)

Minor: Immersive Media

Relevant Coursework

Software Engineering | Affective Computing

NLP for Interactive AI | Introduction to Robotics

Introduction to Computer Systems

Introduction to Algorithms & the Theory of Computing

Experience

Estuary | Project Lead

September 2023 - Present

- Leading a multidisciplinary team of AI, XR, and Affective Computing researchers to develop an open-source distributed framework for building low-latency real-time embodied conversational agents in AR

USC Mobile & Environmental Media Lab | Student Researcher

June 2023 - Present

- Developed and presented at SIGGRAPH 2023, AWE 2024, and IEEE AIxVR 2024 an Immersive Archive VR experience that digitizes and archives seminal works in XR history
- Developed a WebXR 8th Wall experience and mobile AR app in partnership with LA Metro, The Huntington Library, and the LA Chinese Historical Society which utilizes geospatial data and visual positioning to superimpose old Chinatown in its original positions at LA Union Station and provide an educational experience
- Aforementioned Chinatown project won the 2024 Niantic Time Capsule challenge

USC MxR Lab | Student Researcher & Intern

April 2023 - Present

- Concepting & developing an AR HUD which combines AI-driven analysis to improve situational awareness and decision making of first responders in a variety of contexts
- Developing a mobile AR app with the Army Research Lab to explore novel intuitive ways to visualize SAR images
- Developed a mobile AR app 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 simulator in 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
- Developed a collaborative AR terrestrial exploration application on the HoloLens 2 that features gps-enabled navigation and dynamic loading of photogrammetric UAV maps
- 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 such as in space
- 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
- Authored a 40 page project proposal that was approved by NASA, allowing our team to participate in 2023

Publications

- [1] **Spencer L.**, Basem R., Miru J., et al. - "Estuary: A Framework For Building Multimodal Low-Latency Real-Time Socially Interactive Agents" [**Accepted IVA 2024**]
- [2] Kimberly P., Benjamin F., Brent L., David N., Ben N., Rhys Y., **Spencer L.** - "See Like a Satellite: Adapting Human Vision to Complex Sensing Technologies with Adaptive Synthetic Aperture Radar Image Recognition Training (ASIRT)" [**Accepted I/ITSEC 2024**]
- [3] Bin H., Brian K., Kaleen S., **Spencer L.** - "The Impact of Personality on Conflict Resolution with LLM-Based Virtual Agents" [**In Preparation**]

Skills

Coding Languages

Proficient

C#, C++, Java

Intermediate

Python, HTML, CSS

Exploring

Javascript, Ruby, Batch

Software

Unity game engine, Meta XR SDK, OpenXR, Polyspatial, ARKit, XR Interaction Toolkit, MRTK, AR Foundation, Niantic ARDK, 8th Wall, Vuuforia, OpenCV, Maya, Blender, Fusion 360, Jekyll

Hardware

Apple Vision Pro, Quest HMDs, HoloLens 2, SteamVR, Soldering, FDM & SLA 3D printing