Sonia Lin

sonia.lin.144@gmail.com | 646.932.0173 | New York
Personal Portfolio: https://sonialin144.github.io

EDUCATION

University of Michigan, *Ann Arbor, MI*   *GPA: 3.4*
Bachelors of Science in Engineering, Major in Computer Science   *Expected May 2025*

WORK EXPERIENCE

NASA - AR/VR Engineer Intern   *June 2024 - Aug 2024*
- Contributed to the development of an Earth science visualization tool in VR, using Unity/C# to visualize GEOS data and Lagrangian trajectories for scientific research
- Refactored layer management for the holographic table, led improvements to UI and user control features
- Developed a dynamic legend interface to allow scientists to visualize and interact with multiple data layers
- Integrated and visualized NexRAD radar data fetched from UCAR server as a deformable mesh layer
- Chunking volumetric NetCDF data into 3D tiles to render large datasets without incurring performance loss

NASA - Software Engineer Intern   *Jan 2024 - May 2024*
- Developed an interactive educational VR experience for users to pilot the X-15 plane using Godot/GDScript
- Integrated VR and joystick controller input, and motion chair movement via UDP connection
- Leveraged Godot's physics to program flight behavior of the X-15 at various altitudes and engineered aileron and ballistic controls based on air density; resolved position offset issues by deploying HTC Vive trackers
- Playtested with coworkers and test pilots, and conducted research to design an accurate flight experience
- Operated and demoed project at a NASA booth at IMS Eclipse 2024 to 50+ participants of different ages

Urban Electronics, Inc. - Software Engineer Intern   *Feb 2024 - Aug 2024*
- Designed and implemented FTUE UI/UX for an AR-Blockchain mobile app to improve retention; Performed QA testing; Integrated NFT collection from blockchain to enable more customization
- Conceptualized and launched new gamified e-commerce feature for mobile AR tourism app
- Revised features based on client feedback including programming consolidated POI's and categorical listing

AiRPlay (Inclusive Augmented Reality Game Development) - Research Assistant   *Dec 2022 - Dec 2023*
- Collaborated with a multidisciplinary research team led by three professors to improve an inclusive augmented reality projection-based game system for players with different mobilities
- Optimized player detection with OpenCV/C++, implemented new games through a Unity-ROS2 bridge, and connected system to a React web app controller, resulting in a fully interactive gaming experience
- Achieved a 10% reduction in latency, streamlining system performance and enhancing user experience
- Conducted playtesting sessions involving more than 20 participants to collect valuable feedback

Emerging Technologies Group - XR Student Developer   *May 2023 - Sep 2023*
- Built an interactive labeling system in VR using Unreal Engine 4's Blueprint scripting to educate a class of over 30 students about nuclear reactor components and their impact
- Produced procedurally generated realistic residential and civilian environments with Blender, Houdini FX, and Unreal Engine, enabling engaging focus group discussions during community outreach

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PROJECTS

CLAWS (Collaborative Lab For Advancing Work in Space) **-** NASA Suits Challenge   *Mar 2023 - Dec 2023*
- Constructed effective AR interfaces for lunar astronauts on the HoloLens 2 using Unity/Microsoft's MRTK
- Implemented scripts to support collecting geological samples and photo captures, integrated them into AI chatbot voice commands, utilized WebSockets to communicate data with Python servers

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Relevant Coursework: Data Structures and Algorithms, Web Design Development and Accessibility, UI/UX Development, Cybersecurity, Extended Reality and Society, Computer Vision, Operating Systems, Machine Learning
Programming Languages: C#, C/C++, Python, HTML/CSS, JavaScript, Java
Tools/Frameworks: Photoshop, After Effects, Figma, Blender, Git, Jira, Unity, Unreal, Houdini, React, Vue, ROS2
Awards: Lightship Real-World AR Challenge - Grand Prize, 2023 PICO Dev Jam - 1st Prize, ArtsEngine Student MicroGrant, XR @ Michigan 2023 Student Showcase - Best Environment