Samir Ghosh

VIRTUAL REALITY RESEARCHER AND DEVELOPER

✉ mail@samir.tech | 🏠 samir.tech | ⌂ github.com/smrghsh | in linkedin.com/in/vertexshader

Education

University of California, Santa Cruz   *Santa Cruz, California*

PhD in Computational Media (in progress, expected graduation 2027)   *2022 - Current*

- **Advisor**: Katherine Isbister
- Research topics: Human Computer Interaction (HCI), Proxemics, Collaborative Sensemaking, Data Visualization, Embodied Interaction

University of Southern California   *Los Angeles, California*

BS Computational Linguistics + BS Cognitive Science   *Class of 2018*

- Independent project to chart phonological data in virtual reality under Prof. Sandra Disner
- **Courses**: Artificial Intelligence, Cognitive Neuroscience, Advanced Logic, Information Visualization, Neurograstronomy, Psycholinguistics

Experience

SET Lab, UC Santa Cruz   *Santa Cruz, California*

Graduate Student Researcher   *Jun 2023 - Present*

- Researches multi-user VR interfaces for scientific applications in civil engineering and marine science.
- Collaborated with Soga Research Group at UC Berkeley to develop VR prototypes for evacuation simulation
- Support for research from the Sloan Foundation.

Ahmanson Lab, USC Harman Academy   *Los Angeles, California*

Assistant Director   *Jan 2019 - Aug 2022*

- Produced VR, AR, and installation experiences, collaborating across institutions (i.e., The Vatican, California Science Center, Library of Congress).
- Created and taught hands-on workshop series spanning AI, VR/AR development, computer graphics, robotics, 3D printing, and civic issues.
- Maintained fabrication resources for faculty/students, including 3D printing and microcontroller resources (weekly usage 100 to 250 people).

YUR Inc.   *Los Angeles, California*

VR Developer   *Jul 2021 - Dec 2021*

- Specified and implemented network architecture for Unreal Engine VR app with social networking, health metrics, and account APIs.
- Created efficient GPU-based instanced materials for gameplay mechanics and ambient environment elements.
- Migrated assets, netcode, and machine learning models from Unity plugin to Unreal with XR integration and cybersecurity considerations.

Intel Corporation   *Santa Clara, California*

DevOps Engineering Intern   *Summer 2016, Summer 2018*

- Implemented a real-time cybersecurity threat responder and visualization using OSSEC, Wazuh, and Elasticsearch (200k+ servers per instance).
- Extended a hardware-agnostic firmware service tool from CLI to a web interface using Node.js and full-stack development practices.
- Created real-time visualizations of server availability and update status during scheduled server farm downtime using Kibana and Python.

Selected Projects

Google Summer of Code	With the Processing Foundation I learned how to commit open source code and made contributions to p5xr a library that implements the WebXR standard and helps to view p5 3D sketches from VR headsets.
Booksnake AR	NEH funded iOS AR app displaying assets from the Library of Congress and other archival information. Early design, software architecture, and project management contributions.
Bunker Hill VR	Historical recreation of 1930s downtown Los Angeles using civil engineering data. Project management, documentation, and technical contributions.
Stanza Del Segnatura	WebGL 3D app that overlays primary sources over frescoes from The Vatican. Build and distribution contributions.
Bodyscape	Internationally exhibited (i.e. SIGGRAPH, Ars Electronica) wearable technology fashion piece by Behnaz Farahi. Contributions in gait responsive algorithms, circuit design, safety systems, and generative design.

Skills

Programming	JavaScript (WebXR + Three.js), GLSL, Python, C# (Unity), C++ (Unreal Engine)
Design Methods	VR Mockups/ShapesXR, VR Interface Prototyping, User Research, Qualitative and Quantiative Methods