Samir Ghosh

Virtual Reality Researcher and Developer

+1 (650)-793-6186 | mail@samir.tech | samir.tech | smrghsh | 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, Neurogastronomy, 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