Samir Ghosh

Virtual Reality Researcher and Developer

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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 and Coastal Climate Resilience Center, UC Santa Cruz — *Santa Cruz, California*

Graduate Student Researcher — *Jun 2023 - Present*

- Researches multi-user VR interfaces for scientific applications in civil engineering, marine science, and other technical domains.
- Collaboration with Soga Research Group at UC Berkeley and Coastal Climate Resilience Center at UC Santa Cruz for collaborative scientific XR prototypes
- 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

Coral Reefs, XR, and AI — Ongoing project to display coral reef photogrammetry integrated with spatial AI tools in XR for restoration and awareness efforts. Uses cutting-edge gaussian splat approaches with LLM integration and embodied interface design.

AI War Cloud — Ars Electronica 2025 piece by Sarah Ciston that illustrates complex relations of AI technology across industry and government. Developed XR views using a bespoke rendering technique. Winner of the S+T+ARTS Grand Prize of the European Commission.

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.

Skills

Development, Programming — JavaScript (WebXR + Three.js), GLSL, Python, C# (Unity), C++ (Unreal Engine)

Design Methods — VR Mockups, Interface Prototyping, User Research, Co-Design, Research-through-Design Qualitative and Quantitative Methods