Shamus Li

Computational Imaging Researcher
Technical expertise in camera optics, machine learning, and design

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Education

Cornell University — Ithaca, NY
PhD, Computer Science; Advised by Kristina Monakhova — *Aug 2024 – Present*

University of California, Berkeley — Berkeley, CA
MS, Electrical Engineering and Computer Sciences; GPA: 3.92; Advised by Laura Waller — *Aug 2023 – Aug 2024*
BS, Electrical Engineering and Computer Sciences; GPA: 3.84 — *Aug 2020 – Aug 2023*

Work Experience

Apple — Sunnyvale, CA
Software Engineer Intern, Vision Products Group — *May 2024 – Aug 2024*

- Created tooling that improved internal test automation coverage to near 100%, and significantly reduced (>5x) the time it took quality engineers to run tests.
- Collaborated with multiple cross-organizational teams to develop a novel task-driven camera simulation pipeline.
- Presented work to Mike Rockwell and Vision Products Group leadership.

Lawrence Berkeley National Lab — Berkeley, CA
Research Intern — *Oct 2022 – Aug 2023*

- Wrote a human-in-the-loop, real-time semantic segmentation pipeline for 3D cell volumes, surpassing single-structure segmentation methods found in state-of-the-art systems, and reducing segmentation time from days to minutes.
- Designed an adaptive brush for organelle detection, an intuitive interface that improved usability and efficiency (>10x) compared to traditional thresholding techniques.
- Presented work to National Center for X-Ray Tomography (NCXT) leadership as well as at LBNL Molecular Biophysics & Integrated Bioimaging conference.
- First undergraduate student to work at NCXT.

Meta — Menlo Park, CA
VR Instructor — *Jun 2023 – Aug 2023*

- Developed and taught a course on advanced VR experience design in partnership with Mission Bit.
- Worked with the State & Local Policy team to host events for students from underrepresented backgrounds in the Bay Area.

Palo Alto Research Center — Palo Alto, CA
Research Intern — *Jun 2022 – Aug 2022*

- Designed a workflow to efficiently visualize thermal properties in large buildings using multimodal imaging. Enabled real-time room temperature & humidity sensing using Bluetooth Low Energy and MQTT.
- Created iOS app to automatically visualize sensor data in a 3D environment using augmented reality, improving setup time by 80%.
- Two papers published at the IBPSA Building Simulation conference.

Projects

Light Field Camera for NeRF — Aug 2023 – Aug 2024

- Developed light field camera prototype to generate wide-angle, photorealistic reconstructions of 3D scenes in a single shot. Used Gaussian Splatting to achieve high fidelity and fast rendering.
- Created light field optics model using Zemax OpticStudio and multiplexed view synthesis model in PyTorch.

Cinematic Arts & Production Club — Jan 2022 – Jan 2024

- Scaled the club from 20 to 150 active members in 2 years, becoming the largest film organization at Berkeley.
- Handled $20k in year-to-year cash flow, and organized film festivals with over 1,500 yearly attendees.

Human Color Perception Simulation — Aug 2023 – Dec 2023

- Developed computational neuroscience model to simulate and evaluate notch-filter glasses for amplifying color perception in humans.
- Collaborated with teams in Vision Science and Cognitive Science.