Irene Geng

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Education

Stanford University   *M.S. Computer Science (Systems, Graphics/Visual Computing)*
Expected Graduation: Spring 2026

University of California, Berkeley   *B.A. Computer Science, B.A. Data Science*
Graduated May 2024   GPA 3.99

Courses: Animation & Simulation ● Computer Graphics ● Computational Photography ● Parallel Computing ● Operating Systems ● Computer Vision ● Compilers ● Computer Security ● Machine Learning ● Artificial Intelligence ● Data Visualization ● Databases ● Algorithms ● Data Structures ● Computer Architecture & Machine Structures ● Information Devices & Systems ● Discrete Math & Probability ● Linear Algebra & Differential Equations

Work Experience

Research Assistant — Prof. Ren Ng's Lab, UC Berkeley   *Jun 2024 - Sept 2024*
- Collaborated on the development of a tetrachromatic DLP projector that is capable of displaying colors beyond the range of standard RGB displays; engineered real-time graphics application to render projector frames
- Extended Polyscope, an open-source graphics rasterizer and viewer, to accept 4-channel color data and produce raster graphics in tetrachromatic image and video formats
- Optimized Polyscope video export process, achieving a 5x increase in speed
- Developed and integrated a lighting and shading system in Polyscope to improve surface mesh visualization

Head Teaching Assistant — Computer Graphics and Imaging, UC Berkeley   *Dec 2023 - May 2024*
- Provided instruction and resources to more than 400 undergraduate and graduate students
- Collaborated closely with Prof. Ren Ng to lead a team of 10 TAs, developing course materials and exams while overseeing the grading process
- Taught weekly discussion sections and held office hours, assisting students with conceptual questions and exam prep
- Organized and led project parties for 30+ students at a time, fostering collaboration between students and providing assistance with debugging
- Guided teams of students to complete open-ended final projects, encouraging creative problem-solving
- Served as the primary point of contact for students navigating academic or personal challenges, offering tailored support to ensure their success in the course

Flight Software Engineering Intern — NASA Jet Propulsion Lab   *May 2023 - May 2024*
- Worked on the software initialization system for the Mars Sample Retrieval Lander to coordinate the loading and start-up of flight software applications after CPU boot
- Deployed a more flexible, modular pipeline for loading application binaries and created a dynamically-linked library for encoding application metadata to facilitate in-flight software updates in low data uplink scenarios
- Developed embedded software under constraints of limited memory, strict timing requirements, and high reliability standards

Software Engineering Intern — L3Harris Technologies, Broadband Communications   *May 2022 - Aug 2022*
- Developed a Data Distribution Service (DDS) application in C++ for Raspberry Pi as proof of concept for hardware simulation of satellite communication terminals and computer servers
- Designed and implemented status publication interface between servers of the Airborne Resilient Communications System (ARCS) that calculate link budgets for 5,000+ satellites

Research Assistant — UCSF Neuroscape, Education Division   *May 2018 - Sept 2019*
- Coauthored paper on the protective effects of growth mindset in populations of academically vulnerable students (doi.org/10.1007/s11218-023-09863-2)
- Designed novel gameplay patterns for Coherence, a VR rhythm training game used to evaluate cognitive function

Skills
- Python, C, C++, C#, Java, SQL, OCaml
- OpenGL, Blender