

# Tianshuang (Ethan) Qiu

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## Education

### University of California, Berkeley

Master of Science, Electrical Engineering and Computer Science

Aug. 2024 - May 2025

GPA: 4.0/4.0

### University of California, Berkeley

Bachelor of Arts, Computer Science

Aug. 2020 - May 2024

GPA: 4.0/4.0

## Employment

### Research Engineer

General Robotics Company

July 2025 - Present

Redmond, WA

- Co-designed a system for agentic manipulation and pick and place tasks
- Deployed various models such as grasp prediction and depth estimation to the cloud
- Co-designed custom camera mounts for rapid calibration of the robot
- Co-authored a paper on the agentic system, published in October 2025
- Finetuned  $\pi_{0.5}$  model for pick and place actions and set up pipeline for remote inferencing using Real Time Chunking

### Robotics Systems Intern

Robert Bosch LLC

May 2024 - August 2024

Sunnyvale, CA

- Set up robotic systems including a robot arm and a mobile robot for remote control
- Designed new Gaussian-Splat based system to rapidly construct a scene with semantic understanding
- Integrated computer vision models into the pipeline to enable rapid updating, and deployed it to the cloud
- Authored an invention report for the Gaussian-Splat system in preparation of a patent
- Coauthored the patent *Systems and Methods for Ensuring Probabilistic Latency-Reliability for Cloud Robotics*

## Projects

### Berkeley Artificial Intelligence Research

Dec. 2021 - May 2025

AUTOLAB

Prof. Ken Goldberg

### Omni-Scan

Oct. 2024 - Apr. 2025

- Co-designed a system that can scan objects in-hand using a bimanual robot with a webcam
- Developed pipeline of re-grasping to reveal previously occluded surfaces and for Gaussian Splat training
- Integrated the system for defect detection with 83% accuracy on novel objects
- The project was accepted to *Intelligent Robots and Systems (IROS) 2025* for an oral presentation

### Manifold

Aug. 2024 - Jul. 2025

- Designed and simulated an 8 foot tall robotic hand that can interact with visitors
- Developed an agentic system that can interpret human hand gestures and respond with robotic hand movements
- Developed a pipeline that uses Thompson Sampling to select hand movements to maximize audience engagement
- A performance, choreographed by choreo-roboticist Catie Cuan, premiered at *Stanford Live* in May 2025
- The project was featured in the *Adventures in AI* exhibit at *The Exploratorium* for the summer of 2025

### Additive Manufacturing Representations

Mar. 2023 - May 2025

- Designed models to predict the success of Additive Manufacturing (AM) based on mesh geometry
- Co-created the largest AM dataset using crawlers and generated labels as a proxy for AM shape representation
- Proposed using point clouds, depth images, and distance fields as novel AM shape representations
- Co-authored a paper on the AM dataset and shape representations, accepted to the *53rd North American Manufacturing Research Conference*
- The paper was selected for publication in *Manufacturing Letters*

### Blox-Net

May 2024 - Dec. 2024

- Co-designed a system that can take text input and construct 3D models of the objects described
- Developed pipeline of multi-state prompting and simulation feedback for VLMs to reduce hallucination
- Integrated the system with the UR5e robot to manipulate real blocks to realize the 3D designs of the VLM
- The project was accepted to *International Conference on Robotics and Automation (ICRA) 2025*
- Co-authored another paper focusing on the artistic side of VLM-aided design, accepted to *Arts in Robotics Program ICRA 2025*

### Breathless: Catie and the Robot

Jun. 2022 - Dec. 2024

- Collaborated with Catie Cuan, a choreo-roboticist, and used CV models to extract her motions from videos
- Programmed graphical tool to apply signal processing techniques to the extracted motions
- Designed mappings from Catie's movements onto robotic joints to mimic the dancer
- The project premiered for an 8 hour performance in New York City at *National Sawdust* in December 2023
- Interviewed with reporter about the performance and the article was published in *Forbes*
- Co-authored a paper on the project, which was accepted to the *International Symposium on Robotics Research*
- The project was invited for a special performance in December 2024 at *The Exploratorium* in San Francisco