

Tristin Xie

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Education

University of California San Diego

M.S. IN COMPUTER SCIENCE

Sep. 2023 - Jun. 2025

University of California San Diego

CS GPA: 3.722 / 4.0

DOUBLE MAJOR: B.S. IN COMPUTER SCIENCE AND APPLIED MATHEMATICS · MINOR IN BUSINESS

Sep. 2019 - Sep. 2023

- **Tau Beta Pi**: Oldest engineering honor society with invitations only sent to the **top 1/8th of the Junior class and top 1/5th of the Senior class**
- **Relevant Coursework**: Advanced Data Structures · Design and Analysis of Algorithms · Systems Programming · Software Engineering · Machine Learning · Computer Vision · Operating Systems · Computer Architecture · Programming Languages · Recommender Systems · Deep Learning

Work Experience

Advanced Robotics and Controls Lab (ARClab) at UC San Diego

San Diego, CA

RESEARCH ASSISTANT

Mar. 2023 - Present

- Constructed a full **dataset collection pipeline** for the Franka Emika Panda consisting of video, camera calibration parameters, and timestamps
- Hand-labeled thousands of frames of video to correct erroneous predictions from **Segment Anything 2** for evaluation on ground truth mask
- **Parallelized** and implemented a **particle filter** to smooth noisy real-time predictions from the camera to robot pose neural network (CtrNet)

Amazon Web Services

Seattle, WA

SOFTWARE DEVELOPMENT ENGINEER INTERN

Jun. 2023 - Sep. 2023

- Overhauled **autocomplete** from a static frontend approach to a dynamic backend approach reflecting real data in **Elasticsearch**
- Tested implementation by writing new **unit, integration, and canary tests** and created **AWS CloudWatch alarms, metrics, and dashboards**
- **Improved search results by 28%** for exact keyword match queries of a major category, diagnosed by writing a **multithreaded Python** script

SOFTWARE DEVELOPMENT ENGINEER INTERN

Jun. 2022 - Sep. 2022

- Implemented and tested an **AWS DynamoDB** schema and **AWS Lambda** API using **Go** to support Word-like notes for **10,000+ AWS partners**
- Defined cloud infrastructure using **AWS Cloud Development Kit** with **TypeScript** and deployed **CloudFormation** stacks for my application

UC San Diego Computer Science and Engineering

San Diego, CA

INSTRUCTIONAL ASSISTANT

Jul. 2021 - Mar. 2023

- Tutored preparatory and lower division courses on **algorithms, recursion, state machines, Pygame, Python, and image manipulation**
- Tutored upper division course with assigned **C++** programming assignments and conceptual problems for a combined total of **100+ hours**
- Tested **30+** advanced data structures assignments including **self-balancing binary search trees, tries, hash maps, bloom filters, and more**

Leadership

Association for Computing Machinery at UC San Diego

San Diego, CA

VICE PRESIDENT PROJECTS

May 2022 - May 2023

- Oversaw the processing of **250+ applicants** and hosted a project showcase event with **90+ attendance** for the quarterly ACM Projects program

VICE PRESIDENT FINANCE

May 2021 - May 2022

- Directed the finance team to create financial documents to **obtain funding** for **200+ events** from school departments and student government
- Managed and budgeted **thousands of dollars** of department funds, sponsorship money, and other miscellaneous University allocated funds

Projects

ACM Teammate Finder: Web App To Find Teammates Easily | [GitHub](#)

Oct. 2020 - Jan. 2021

- Implemented **Material Design** webpages with **React, HTML/CSS, and React Material Web Components**
- Developed **CRUD functions** for back-end using **Express** to fetch and post updates to the **Firestore** database

EnviroSense: Internet of Things Pollution Sensor | [Devpost](#) | [GitHub](#)

Oct. 2019

- **SDHacks WINNER (3rd)**: Best IoT that Incorporates Multiple Nodes (team of 4)

PictureTranslate: Real-time Computer Vision Object Translator | [GitHub](#)

Aug. 2019

- Pair programmed and trained **Haar Cascades** on 4 different smartphones, 4 denominations of money, and more
- Displayed video feed and paused with translation of the detected object to **100+ supported languages** using the **Google Translate API**

Skills

Languages Python · C/C++ · Go · JavaScript/TypeScript · Haskell · HTML/CSS · Sass · ARM Assembly · Bash · Java · \LaTeX

Frameworks and Tools NumPy · PyTorch · ROS Noetic · SciPy · Pandas · Matplotlib · SymPy · OpenCV · PIL · Git · AWS · Node.js

Software Vim · Visual Studio Code · Visual Studio · IntelliJ IDEA Ultimate · Adobe Illustrator