

# JASMINE TAI

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## WORK EXPERIENCE

### Monterey Technologies, Inc.

Software Engineer

Remote

Jan. 2025 – present

- Developing comprehensive mission planning software systems to support the US Navy and Marine Corps
- Building complex full-stack applications using frameworks/technologies including React, Material UI, Jest, and Spring Boot

### Computational Ecology Lab

Undergraduate Research Assistant

Santa Cruz, CA

Dec. 2021 – Dec. 2024

- Contributed to the creation of a novel connectivity computation model for predicting bird species movements that runs over 1,000 times faster than existing models, developed both as a Python package using PyTorch and as an R package using torch
- Produced the ecoscape-layers Python package for automating Area of Habitat generation for 1,000+ bird species with GDAL
- Produced the scgt Python package for efficient reading and handling of geospatial data with GDAL, Rasterio, and NumPy

### Tech4Good Lab

Lead Web Developer

Santa Cruz, CA

Sept. 2023 – Dec. 2024

- Led student developer team of 20+ in building software applications used in social computing research initiatives
- Guided students in the practical acquisition of web development skills with a tech stack that includes TypeScript, Angular, RxJS, NgRx, and Firebase by offering regular mentorship, performing code reviews, and assigning project tasks
- Assisted in management of 100+ member lab by evaluating quarterly lab applicants and presenting long-term project goals

### NASA Jet Propulsion Laboratory

Software Engineering Intern

La Cañada Flintridge, CA

June 2024 – Aug. 2024

- Automated the generation of test procedure scripts for Deep Space Network (DSN) emulator machines from human-readable documents in Tcl, reducing manual overhead and cutting average time to produce automatic regression tests by over 90%
- Rewrote existing software for automatic test execution on one DSN emulator to support automatic test execution on all DSN emulators, making software viable for supporting various ongoing and future missions such as JWST and Mars 2020

Software Engineering Intern

June 2023 – Aug. 2023

- Implemented data processing and validation functionalities for software that builds mission configuration files in Perl, which are needed to support 40+ active spacecraft missions relying on telemetry subsystems within the DSN
- Created accompanying web interface and file browser for automation software using HTML, Bootstrap, jQuery, and Python

## PROJECTS

### Localization/Mapping and Path-finding Agent | Python

Mar. 2025 – Apr. 2025

- Implemented graph SLAM path-finding algorithm to navigate a robot agent towards landmarks in an unmapped 2D setting

### Quiz Game Web Application | TypeScript, React, Next.js, Express

Apr. 2023 – June 2023

- Worked in team of 6 to build Kakaw! (<https://kakaw.190n.dev>), a platform that supports learning through live quiz sessions
- Developed playful and engaging user interfaces compatible with desktop and mobile screens, designed with Figma and implemented with React, Tailwind CSS, and Next.js

### Multi-Threaded HTTP Server | C

Jan. 2023 – Mar. 2023

- Developed a robust HTTP 1.1 server that efficiently processes GET and PUT client requests in C
- Utilized a thread pool design involving the use of worker threads and a bounded buffer implementation to serve multiple clients concurrently and efficiently, while ensuring the atomic and consistent linearization of requests

## EDUCATION

### Georgia Institute of Technology

M.S. in Computer Science

Remote

Jan. 2025 - present

### University of California, Santa Cruz

B.S. in Computer Science and Applied Mathematics | GPA: 3.99

Santa Cruz, CA

Sept. 2021 – Dec. 2024

## TECHNICAL SKILLS

**Languages:** JavaScript/TypeScript, Python, C, C++, HTML/CSS, R, Java, SQL, Perl, Fortran, Tcl

**Frameworks/Libraries:** Angular, React, Redux, Next.js, Flask, Jest, Puppeteer, Bootstrap, NumPy, Matplotlib, GDAL, Spring Boot

**Developer Tools:** Node.js, PostgreSQL, Firebase, MongoDB, Jupyter, Linux, VS Code, Git, Heroku, Docker, Kubernetes