

# SAKURA TAKAHASHI

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## EDUCATION

### University of Hawaii at Manoa

B.S. Mathematics; *Minor in Computer Science*

Honolulu, HI

*Expected Graduation: May 2026*

## WORK EXPERIENCE

### University of Hawaii at Manoa

*Math Learning Assistant*

*Aug '24 - present*

- Provided one-on-one and group tutoring to college students in pre-calculus & single variable calculus on concepts and arithmetic
- Created supplementary materials such as exams to support student learning outside of sessions

### Palolo Factory

*Dec '21 - Dec '23*

*Co-owner*

- Managed finances of family owned musubi pop-up events and negotiated with various vendors
- Organized and planned events, including venue selection, setup, and social media marketing efforts

## RESEARCH & INTERN EXPERIENCE

### Majesco Math Research

*Jan '25 - now*

*Math Research Assistant*

- Used LEAN V4 and Mathlib to code mathematical proofs from the Journal of Logic and Analysis, to be added as formal marginalia for an article published in Marginis under Professor Bjoern Kjos-Hanssen

### Mechanical Engineering Lab at UH Manoa

*Jan '25 - now*

*Undergraduate Research Student*

- Used JAX MD and JAX with Python to optimize auto-differentiating algorithms for binding energy landscapes with respect to handshake magnetic dipoles under Professor Chrisy Xu Du.

### Urban Land Institute

*Summer '22*

*Institute Scholar*

- Collaborated with fellow participants and experts on urban development projects on low-income housing in Oahu
- Presented proposals in front of local lawmakers and industry executives

## PROJECTS

### Optimal Pathing and Topological Data Analysis for City Bus

*Aug '24 - present*

*Undergraduate Researcher/Creator*

- Aims to address service issues of the bus system in Oahu by investigating topological data analysis (TDA) and control theory can be applied to optimize networks
- Designed Python algorithms to intake TheBus API data into matrices for TDA
- Constructed mathematical models for optimization functionals

## LEADERSHIP & INVOLVEMENTS

### Natural Sciences Student Ambassador Club

*Aug '24 - present*

*Student Ambassador*

### Mathematics Club

*Aug '23 - present*

*Co-president*

## SKILLS

### Technical Skills

*Computer & Software Languages & Libraries/Packages*

- Java, Python, Matplotlib, Gephi, pandas, Microsoft Office Suite, Adobe Creative Suite, LEAN, MATLAB, AutoCAD, Rhino

*Other Experience*

- Mathematical Modeling, Data Analysis, Object-Oriented Programming, Financing, Discrete Math, POS systems, Project Management, Urban Planning

### Interpersonal Skills

*Languages*

- English (Fluent), Japanese (Conversational)

## VOLUNTEER

### Urban Land Institute

*Summer '22 - present*

*City Council Member*

- I volunteer for the annual ULI Urban Plan State Competition held in the state of Hawai'i as a City Council Member (Judge) on student made development sites in the town of Elmwood (Elmwood is a theoretical 6 block neighborhood that is seeking for redevelopment)