HOK WAI CHAN

PROFILE

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EDUCATION

University of Hawai'i at Mānoa | Honolulu, HI ***08/2024 – 05/2025***
Master of Science in Computer Science
Relevant Coursework:

- Software Engineering II
- Machine Learning
- Video Game Design
- Human-Centered AI
- Advanced-Data Visualization
- Software Quality & Maintenance
- Advanced Data Management
- Intro to Fusion

University of Hawai'i at Mānoa | Honolulu, HI ***08/2022 – 05/2024***
Bachelor of Science in Computer Science
Relevant Coursework:

- Algorithms
- Software Engineering I
- Database Systems I
- Security and Trust I
- Machine-Level & Systems Programming
- Operating Systems
- Data Networks

EXPERIENCE

UH Groupings | Honolulu, HI ***07/2023 – 05/2025***
Title: Web App Developer

UH Groupings is a web-based access management service that organizes and manages University of Hawaii group affiliations, built on Grouper.

- API Development: Designed and enhanced Java-based APIs, adding new features and improving performance.
- Testing: Wrote unit and integration tests (Java, Jasmine), ensured ADA compliance, and performed automated testing with Selenium and performance testing with BlazeMeter.
- UI Development: Maintained legacy AngularJS UI and contributed to a new React-based UI.
- Collaboration: Participated in weekly meetings, followed ticket-based workflows, and collaborated across teams.
- Tools & Tech: Java, AngularJS, React, NextJs, Jasmine, Selenium, Jacoco, BlazeMeter, Confluence, GitHub, Jira
- Links: Project Page | GitHub Repo

VolunteerAlly | Honolulu, HI ***12/2024 – Current***
Title: Software Developer

VolunteerAlly is a nonprofit platform that connects volunteers with community organizations across Hawaii, streamlining event discovery, communication, and engagement to make volunteering simple and accessible.

- Developed and maintained front-end features using React and Next.js for a nonprofit volunteer-matching platform.
- Collaborated with a small, agile team to deliver user-focused improvements and streamline the volunteer experience.
- Participated in weekly planning meetings to align on priorities, discuss progress, and coordinate feature development.
- Contributed to enhancing UI/UX for event discovery, RSVP flow, and organization search.
- Links: Project Page | Github Repo

SKILLS

Technical Skills: Web Design and Development, Database Management, Machine Learning, Object Oriented Programming, Data Structure, Unit Testing, Integration Testing, Game Development
Languages: Java, Python, JavaScript, TypeScript, HTML, Assembly, SQL, C, C#, C++, R
Tools: Windows, Git/Github, GitKraken, IntelliJ IDEA, Visual Studio Code, jGRASP, Unity, Gephi, RStudio
Framework: NextJS, AngularJS, React-Bootstrap, React Native, Meteor, Tailwind CSS, Native CSS

LEADERSHIP & COMMUNITY INVOLVEMENT

National Science Foundation Geopaths - Impact (GP-IMPACT) | Honolulu, HI ***08/2021 – 12/2022***

- Role: Volunteer for STEM Expo and SURF, Web Designer
- Key Concepts Learned: Leadership, web design, user experience, and search engine optimization.
- Designed and created the event page for the KCC STEM website using the Elementor website builder.
- Developed a user-friendly, visually appealing, and SEO-friendly website.
- Assisted in organizing the STEM Expo and SURF.
- Performed additional duties as assigned by the faculty mentor.
- Award Letter

HONORS AND AWARDS

Phi Theta Kappa Honor Society, Ms.Julie Rancilio ***08/2020 – 08/2022***

- Phi Theta Kappa Honor Society (ΦΘΚ or PTK) is the international honor society of students attending open-access institutions and seeking associate degrees, bachelor's degrees, or other college credentials.

Manoa Dean's List

- Spring 2023
- Spring 2024

RESEARCH

Mars Rover Vision Research Project ***05/2024 – 12/2024***

Developed a deep learning pipeline for object classification and camera alignment on Mars rover imagery.

- Applied DeepLabv3, LRASPP, and SAM for segmentation and cross-domain object detection
- Built custom data loaders and unified label systems; cleaned and augmented datasets
- Fine-tuned pre-trained models with Mars-specific data; evaluated with TensorBoard
- Aligned bottom and top camera views; performed 3D reconstruction using COLMAP
- Integrated SLAM techniques; generated synthetic data with Infinigen

Distortion Generation and Restoration Project ***12/2024 – 05/2025***

Created a large-scale dataset and neural model for complex image distortion restoration to support the team's ICIP conference publication.

- Designed and applied distortion techniques (radial, vortex, smooth random field) to generate synthetic UV-mapped datasets
- Automated distortion pipeline with OpenCV and Perlin noise, stored UV displacement maps for supervised learning
- Trained a ResNet-based regression model (UVNet) to predict distortion fields from RGB input
- Evaluated model performance with L1 loss, MSE, and PSNR; visualized UV predictions for qualitative inspection
- Dataset and models prepared for internal team use and ICIP conference submission

PROJECTS

Digital Ammunition Counter | Team of 3

- Objective: Develop a digital ammunition counting system for the 25th Infantry Division to enhance accuracy and efficiency in counting ammunition, addressing the problem of manual ammo counting being inconsistent, time-consuming, and error-prone.
- Key Concepts Learned: Arduino programming, machine learning, object detection, data quality assurance, and model evaluation.
- Developed an Arduino-based counting device with infrared sensors and an LCD display.
- Created an initial machine learning model using Tensorflow for object detection.

Volunteer Management System (Voluntree) | Team of 8

- Objective: Develop a system to match willing volunteers with nonprofits and other organizations, providing an easy way for volunteers to find opportunities and for organizations to post them.
- Key Concepts Learned: Web development, user experience design, continuous integration, database management, and project management.
- Feature: Account Registration and Profile Management, Volunteer Opportunities Posting and Search, Communication between Volunteers and Organizations, Organization Statistics and Event Management, etc.
- Link: GitHub Repo

SHA-1 Cryptographic Hash Algorithm Implementation | Self

- Objective: Implement the Secure Hash Algorithm 1 (SHA-1) in C to understand cryptographic hash functions and their security characteristics.
- Key Concepts Learned: Fundamentals of computer science and cryptography, hash functions, data security, and integrity.
- Padding: Ensuring the input message is a multiple of 512 bits.
- Initialization: Setting initial values for five 32-bit registers (A, B, C, D, and E).
- Processing: Splitting the padded message into 512-bit segments, performing logical operations, and rotations.
- Link: GitHub Repo