

# Eliañ Hijmans Malessy

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## EDUCATION

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### University of California - Irvine

B.S. in Computer Science, Specialization in Intelligent Systems

GPA: 3.948/4.0

Sep. 2023 – June 2027

Irvine, CA

## EXPERIENCE

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### Microsoft

Software Engineer Intern

June 2025 – Sep. 2025

Redmond, WA

- Developed thermal throttling functionality for Surface camera drivers to optimize performance under AI workloads
- Built an automated pipeline for camera sensor validation, cutting testing time by 27%
- Optimized HLK workflows, reducing smoke test runtime from days to under an hour

### UC Irvine

Artificial Intelligence Research Assistant

Apr. 2025 – Present

Irvine, CA

- Researching under UC Irvine professor Roy Fox on gradient estimators and control variates
- Contributed PyTorch code to the Clowder library, extending functionality for stochastic optimization

### Calit2

Software Developer

Sep. 2023 – April 2025

Irvine, CA

- Implemented a real-time video analysis service for detection, tracking, and pose estimation
- Built a streaming pipeline with Kafka for real-time processing and MongoDB for result storage
- Simulated thermal energy storage systems by generating synthetic time-series data
- Trained regression models to predict temperature evolution, improving forecasting accuracy

## PROJECTS

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### Art Recommender | Python, PyTorch, FastAPI

Sep. 2025 – Present

- Trained a MMD-VAE to encode CLIP embeddings of artwork into a latent space
- Implemented pairwise preference learning with a Bradley-Terry model and max-entropy sampling
- Built a FastAPI-powered interface for real-time, user-driven art recommendations

### ZotNFound | Next.js, Express.js, AWS, SST, Firebase

Nov. 2023 – Present

- Launched a lost-and-found web app serving 2,000+ UC Irvine students
- Migrated backend from Firebase to AWS with SST, improving scalability and maintainability

### Face Generation | Python, PyTorch

May 2025 – June 2025

- Trained a VAE with a structured latent space on the CelebA dataset
- Trained a conditional latent diffusion model to generate faces given specified attributes

### UCI CubeSat | C++, Docker

Mar. 2024 – Mar. 2025

- Developed embedded software in C++ and Docker for a 2U nanosatellite payload mission
- Led onboarding and task management for new software team members

### UCI Search Engine | Python, Apache Spark, Flask

Nov. 2024 – Dec. 2024

- Developed a multithreaded web crawler for the UCI directory, storing and indexing collected pages
- Created a search engine with TF-IDF relevance ranking and PageRank scoring
- Accelerated indexing with Apache Spark and built a Flask web interface for search

## TECHNICAL SKILLS

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**Languages:** Python, C, C++, CUDA, R, Rust, SQL, HTML, CSS, JavaScript, TypeScript

**Frameworks:** React, Node.js, Flask, FastAPI, Apache Spark, Apache Kafka

**Developer Tools:** Git, Docker, Azure DevOps, AWS, PostgreSQL, MongoDB, Vercel

**Libraries:** PyTorch, Pandas, NumPy, SciPy, PySpark, OpenCV, Scikit-learn, Synthetic Data Vault, Ultralytics