Elian Hijmans Malessy

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EDUCATION

University of California - Irvine — Sep. 2023 – June 2027
B.S. in Computer Science, Specialization in Intelligent Systems — Irvine, CA
GPA: 3.948/4.0

EXPERIENCE

Microsoft — June 2025 – Sep. 2025
Software Engineer Intern — 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 Hardware Lab Kit (HLK) workflows, reducing smoke test runtime from days to under an hour

UC Irvine — Apr. 2025 – Present
Artificial Intelligence Research Assistant — Irvine, CA
- Researching under UC Irvine professor Roy Fox on gradient estimators and control variates
- Contributed PyTorch code extending functionality for stochastic optimization under discrete action spaces

California Institute for Telecommunications and Information Technology — Sep. 2023 – April 2025
Software Developer — 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
- Developed physics-informed neural networks as a surrogate model to predict temperature evolution in materials
- Accelerated temperature forecasting by replacing computationally expensive finite element simulations

PROJECTS

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

Languages: Python, C, C++, Java, 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