

LILY MARY FARIS

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Software engineer focused on building and deploying production AI systems, with experience in LLM-based workflows, automation, and reliability for real-world use cases.

SKILLS AND INTERESTS

- **Languages:** Python, SQL, JavaScript, Java, C++
- **AI / ML:** LLMs, RAG pipelines, FAISS, OpenAI APIs, PyTorch, NLP, Computer Vision, prompt design, evaluation metrics, human-in-the-loop systems
- **Data & Automation:** Workflow automation, web scraping, data extraction, data normalization, Apify, SerpAPI, API orchestration, unstructured-to-structured data pipelines
- **Systems & Tools:** Docker, Kubernetes, Linux, AWS, Node.js, React, n8n, ClickUp, Slack integrations, REST APIs, webhooks
- **Engineering Concepts:** Backend systems, distributed systems, system reliability, error handling & fallback logic, monitoring, data modeling
- **Additional:** Conversational Spanish, Arabic, and Chinese; environmental justice, visual arts

EDUCATION

UNIVERSITY OF CALIFORNIA, SANTA CRUZ

Santa Cruz, CA

(MS) **Master of Science in Computer Science;**

Sep 2024 - Jun 2025

Degree completed in one-year intensive contiguous program, graduated with honors.

(BS) **Bachelor of Science in Computer Science with Honors;**

Sep 2021 - Jun 2024

Awards: Undergraduate Dean's Award Merit Scholarship, Dean's List 2021-24 (top 10%), College Scholars Program.

WORK EXPERIENCE

ARROW NORTH

Software Engineer Intern

Nov 2025 - Present

- Designed and deployed **production AI-powered automation systems**, transforming unstructured inputs (meeting transcripts, spreadsheets, notes) into reliable, structured workflows.
- Translated business requirements into maintainable backend logic for task routing, approvals, and delivery using ClickUp, Slack, APIs, n8n, and custom tooling.
- Optimized AI system performance using prompt design, confidence thresholds, and deterministic logic to improve accuracy and reliability.
- Implemented human-in-the-loop review flows, fallback logic, and monitoring to support safe deployment and stakeholder trust.
- Led communication with non-technical teammates, proactively identifying edge cases before deployment and independently debugging issues to improve system stability.

OUTLIER AI

AI Development Specialist

Nov 2024 - Dec 2025

- Evaluated LLM-driven systems by identifying failure modes, edge cases, and output inconsistencies.
- Provided structured feedback to improve model behavior, robustness, and downstream reliability.

AMAZON OPERATIONS

RL Area Manager Intern

Visalia, CA

Jun - Aug 2023

- Improved Outbound CPT efficiency by 5% via an independent improvement proposal project.
- Coordinated cross-functional stakeholders while managing timelines, deliverables, and performance metrics.

PROJECTS

'ROOT-WISE' CHATBOT

Developer, Product Owner (graduate thesis)

AIEA Lab, UCSC

Sep 2024 - Present

Developed an AI-powered retrieval-augmented generation (RAG) chatbot focused on sustainability and zero-waste cooking, leveraging **NVIDIA embedding models**, **OpenAI LLMs**, and a **FAISS** vector store with custom retrieval pipelines. Integrated domain-specific context from the Institute for Functional Medicine (IFM) toolkit.

- Achieved **82.5% personalization accuracy** across user context dimensions and **100% dietary compliance**.
- Evaluated output quality using **Self-BLEU (0.0357)** for diversity, **embedding-based relevance (0.72 avg)**, and **groundedness (0.067 avg)**.
- Recognized as an award winner in the **NVIDIA × LlamaIndex Developer Contest**; project developed in collaboration with Leilani Gilpin's AIEA Lab.

MARKETPLACE AI

Developer, Product Owner (undergraduate thesis)

LEEPS Lab, UCSC

Jan 2023 - Jun 2024

Investigated effects of algorithmic massification on features of a financial market using AI. Simulated increased accessibility of AI trading and reduced trader acquisition costs.

- Developed a configurable (continuous double auction) market simulation that handles multiple participant traders at once.
- Constructed an algorithmic interpreter using OpenAI's ChatGPT API and LlamaIndex (RAG) to deploy a market strategy from using a .txt database and a user's instruction.
- Connected trader client and AI components to implement user strategy in the market simulation.

'ROBOT EAR'

Developer

UC Santa Cruz, CA

Sep 2023 - Jan 2024

Engineered an ML web application to transcribe audio (.wav) into sheet music (.pdf) using vision transformers.

- Trained on 12,796 spectrograms (NSynth dataset), achieving **90% training accuracy**.
- Analyzed generalization limits and train-test distribution gaps (4% test accuracy), identifying opportunities for dataset refinement and model tuning.

'TRUTH BEE TOLD'

Product Owner

Ann Arbor, MI

Jan 2021

Independently developed link-based educational game about the ecological importance of native pollinators to environmental health. Collaborated with the Ann Arbor Environmental Commission (as a Youth Commissioner) on an educational campaign.

BEYOND ENGINEERING

SPARROW MEAT MARKET

Butcher

Ann Arbor, MI

2018

My first job at 14. Learned discipline, precision, and accountability in a fast-paced environment where preparation, cleanliness, and attention to detail was essential (plus it was fun).

ANN ARBOR PARKS AND REC

Lifeguard & Swim Instructor

Ann Arbor, MI

Spent five years responsible for swimmer safety, emergency response, and calm decision-making under pressure; mentored and trained younger guards while maintaining a safe, welcoming environment.

Youth Environmental Commissioner

Worked with city staff and community members on sustainability-focused education initiatives and local environmental policy discussions, representing youth perspectives in civic decision-making.

Art Instructor

Provided private art instruction to children across mixed media and figure drawing, adapting lessons to different learning styles and fostering creative confidence.

Artist-in-Residence (Upcoming)

Selected for a one-week oil painting residency in Ireland (and a complete scholarship), July 2026.