

Aref Malek

510-857-9401 | arefmalek02@gmail.com | [linkedin.com/in/aref-malek](https://www.linkedin.com/in/aref-malek) | github.com/arefmalek | arefmalek.github.io

EDUCATION

Purdue University

Aug. 2020-May 2024

Bachelor of Science in Computer Science Honors, Minor in Mathematics

GPA: 3.90 / 4.0

Honors, Scholarships: Dean's List, Semester Honors, VIP Outstanding Student Scholarship, Thermo Fisher Scientific Scholarship, Clara Abbott Foundation Scholarship

Courses of Interest: Data Structures and Algorithms, Artificial Intelligence, Data Mining/Machine Learning, Software Engineering I, Software Testing, Systems Programming, Operating Systems, Computer Architecture

Awards: VIP Outstanding Student (2/395), UC Berkeley Datathon (2nd/20), UCSD Hackathon (Wolfram Award)

EXPERIENCE

Tesla

September 2023 – December 2023

Software Engineering Intern

Palo Alto, CA

- Introduced UI/UX improvements and new features onto Tesla's internal mapping tool used for monitoring health and expansion of supercharger network
- Developed a greenfield platform-agnostic analytics-proxy service to automate setup and handling of user analytics
- Deployed a Typescript API wrapper to abstract interaction with proxy for Tesla's frontend energy teams.

NASA Langley Research Center

June 2023 – August 2023

Computer Vision Intern

Hampton, VA

- Built a real-time wildfire detection algorithm with OpenCV/Tensorflow, and demonstrated in simulation
- Designed and trained classification/segmentation deep neural networks for multispectral remote sensing imagery
- Completed full, self-directed research pipeline including literature review, experimentation, and presentation

Amazon Web Services

May 2022 – August 2022

Software Development Engineer Intern, Edge ML Services

Santa Clara, CA

- Reduced customer development waiting time by 70% on AWS Panorama by creating new 'Sideloaded' feature
- Utilized a device-side multi-threaded server that manages internal device state and receives customer data
- Sideloaded solved customer pain point of code deployment by leveraging local network and custom TCP-based protocol for faster deployment compared to traditional cloud deployment.

Purdue Computer Science

January 2022 – April 2022

Undergraduate Lab Teaching Assistant, Computer Architecture

West Lafayette, IN

- Instructed, assisted, and assessed 20 students in weekly recitation about their Computer Architecture knowledge
- Organized lab procedures in weekly collaborative lab reviews with 10+ Undergraduate and Graduate TAs

NASA Langley Research Center

June 2021 – August 2021

Software Engineering Intern, Cloud AI

Remote

- Automated archival and research efforts at NASA by creating a web service that translates and stores research.
- Integrated AI models and storage from Google Cloud in Python to allow service to operate entirely on the cloud
- Implemented an object detection neural network for an additional NASA AR/VR project, achieved 20% accuracy improvement from GCP models with hypertuned YOLOv5 network trained on pre-processed dataset

PROJECTS

Airdraw | React, Typescript, Python3, OpenCV, Vercel

<https://www.airdraw.io>

- Developed a novel camera-only drawing application by integrating computer vision API's with Linear Algebra
- Implemented User-Interface with multiple drawing modes and colors through vector analysis of hand-positions
- Created a web application of Airdraw with React, Typescript, and Mediapipe, hosted project with Vercel
- Webapp now fields 20,000 monthly visitors, reaching #4 on Hackernews, Python subreddit's front page, 200+ Github Stars, and open source contributors

XINU OS | C, x86 Assembly

<https://xinu.cs.purdue.edu/>

- Developed multiple features on the XINU Operating System such as interrupt handling, CPU usage dynamic priority scheduling, and asynchronous callback functions on top of the XINU Operating System.
- Implemented lower-level kernel features such as trapped system-call dispatchers and exception handling in x86 Assembly.

TECHNICAL SKILLS

Languages: Python, Java, C/C++, Typescript, JavaScript, Rust, Bash, HTML/CSS

Frameworks: React, Vue.js, PyTest, PyTorch, Tensorflow, Keras, Flask

Libraries: OpenCV, NumPy, Pandas, Matplotlib, Seaborn, Scikit-learn, BeautifulSoup4, PRAW, Tweepy