

# Arya Rahmanian

[aryarahmanian23@gmail.com](mailto:aryarahmanian23@gmail.com) • [LinkedIn](#) • [Personal Website](#) • [GitHub](#)

(972) 974-7423 • Dallas, TX

## Objective

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Looking to launch a career in embedded systems and firmware development, with a strong understanding of computer architecture and communication protocols. Proficient in leveraging C++ and C to create robust firmware and drivers. Committed to applying problem-solving skills and efficient time management to thrive in a dynamic, fast-paced environment.

## Skills

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- **Assembly, C, C++, Device Drivers, Raspberry Pi, Unix, Ubuntu, Git**
- **Cadence Virtuoso, Vivado, FPGA, SPICE-simulators, oscilloscopes**
- **Python:** SciKit-learn, Pandas, TensorFlow, PyTorch, Matplotlib, Machine Learning
- **Java, JavaScript, mySQL, HTML/CSS, AWS:** Lambda, EC2, S3

## Work done with Skills

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- **ARM and C** on a Raspberry Pi 4; Built a single cycle ARM-based processor in **Verilog**.
- **Cadence Virtuoso EDA** to create logic gates and registers in a digital integrated circuit design course. Built a 4-bit ALU and 4-bit register.
- **Zybo FPGA** board using **Verilog** and **C**; Built several **Finite-State-Machines**, such as creating a stoplight.
- **Vivado Zybo** board to create Zynq based microprocessor system to run **Linux** on the **FPGA** board and created built in modules on the OS.
- Designed circuits with **Spice-Based (Multisim)** simulators and breadboarded them, providing input waveforms with National Instruments **oscilloscopes** and measured outputs in an analog circuits course. Worked with Bipolar transistors in creating a three-stage audio amplifier.
- Co-wrote a literature survey on **SIMD** extensions and modern ISA techniques. Currently doing research into a comparative analysis of different **SIMD** extensions currently available.
- **Python** in a **Machine Learning** setting; Created a **CNN** using **PyTorch** and **SciKit-learn** with the fashion-mnist dataset to classify images of clothing with 90% accuracy.
- **PostgreSQL, JavaScript, JavaFX, and Git** to create a database and GUI for a fast-food restaurant.
- **C++** in socket programming using **TCP/IP** protocols.
- **HTML/CSS** and **JavaScript** to create a web app that plans camping trips at national parks using **Agile** development. Used JavaScript to work with several API's. **Heroku** to set up website hosting.
- Built **AWS Amplify** web application that visualizes and tracks satellites; **WebGL Globe** with **AWS Lambda** and **EC2** to build the web app seen [here](#).

## Personal Projects

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- **Python** to create a virtual assistant on a **Raspberry Pi** to summarize daily google calendar tasks, weather, news headlines, and more.

- **PyTorch** and **TensorFlow** to build a **CNN** AI image detection model with 80% accuracy and 0.69 F1 score.
- **JavaFX** Connect-4 with two different opponent modes, random placement and “smart AI”.
- **Self-taught x86** assembly on 8086 emulator to build a calculator and mouse tracker.

## Work Experience

**Airsight: Richardson, TX** – *Testing Engineer*

*June 2024 – Present*

*Airsight is a startup working on providing drone security and detection services for customers.*

- Executed validation testing for a 3-panel radar system, ensuring the precision of tracking drones.
- Developed and implemented automation of daily sensor status checks, ensuring operational consistency at customer sites. Tool utilized: **Python**.
- Configured network-attached power supply systems for remote power cycling at client installations, enhancing system reliability.
- Performed performance assessments for camera tracking systems in night environment.

**Strike Photonics: Allen, TX** – *Computer Engineering Intern*

*May 2023 – August 2023*

*Strike Photonics is an innovative startup specializing in the development of groundbreaking photonics chips.*

- Aided in development of firmware on the custom laser and temperature control board using the **TI MSP430** microcontroller to control the I/O. Tools utilized: **Assembly, C**.
- Updated the electrical schematic of the Laser Temp Control Board PCB to create the next cycle of the circuit board currently being used.
- Created the company-wide **Git** server through a **Dell PowerEdge R710** with **Ubuntu 22.04** that is still in use.
- Established a Group Office file storage server for internal application; Consolidated file sharing and distribution to cut cloud-based storage subscription costs.

**Chemours: Fayetteville, NC** – *Electrical Engineering Co-op*

*August 2022 – December 2022*

*Chemours is a chemical company manufacturing advanced materials for electronics and semiconductors.*

- Led two projects to replace a temperature transmitter and add a flow meter for a water pipe, cutting approx. one hour per day spent on the chemical process.
- Worked with the Distributed Control System, **DCS**, and adjusted boiler parameters to improve energy production efficiency by approx. 5% overall.
- Aided in developing **PLC** (Programmable Logic Controllers) and its **HMI** (Human-machine interface) to integrate new equipment into the control line.
- **Seeq** to analyze spikes in utility usage and predict future unexpected hikes.

## Education

<b>Rice University</b>	MS Data Science GPA: N/A	December 2025
<b>Texas A&amp;M University</b>	BS Computer Engineering w/ Minor in Mathematics Final GPA: 3.7 / 4.0, Graduated Cum Laude	December 2023

**Relevant Coursework:** Computer Architecture, Advanced Computer Architecture, Microprocessor System Design, Digital Systems Design, Programming Languages, Information Theory and Learning Algorithms, Machine Learning

## **Other Experience**

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### **Baha'i Club – Vice President**

*October 2021- December 2023*

- Created and set up the Baha'i club at Texas A&M, focusing on community service.
- Organized monthly service events in the College Station area, partnering with food banks and conducting projects for the elderly community.

### **TAMU IEEE – Corporate Officer**

*August 2022 – May 2023*

- Organized various opportunities for the IEEE chapter at A&M, including corporate workshops, career development resources, guest speakers, and social networking events.