

Arav Rawat

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EDUCATION

University of Texas at Austin

B.S. Computer Science, B.S. Mathematics, Robotics Minor

May 2028

GPA: 3.95

Relevant Coursework: Operating Systems, Machine Learning, Algorithms, Comp Arch, Data Structures, Robotics

EXPERIENCE

Google

Summer 2026

Software Engineering Intern (Pixel performance team)

Mountain View, CA

- Built a **Timeline API** tying Android Graphics to Pixel's Power HAL, exposing frame timings and thread mappings
- Improved **CPU/GPU duration** estimate accuracy by **12%** across all apps, enabling precise performance tuning
- Increased **gaming FPS/Watt** by **5%** using adaptive CPU/GPU power allocation derived from frame workloads
- Reduced **CPU cycles** by **28%** and **instructions executed** by **31%** by caching system calls in the PowerHAL

Apex Space (Satellite Manufacturing Series-D Unicorn)

Spring 2026

Flight Software Intern

Los Angeles, CA

- Created **4+ NASA C-based cFS apps** across **7 flight nodes** for shell commands, file ops, and health info
- Expanded **storage capacity 8x** via FPGA + Yocto Linux changes; built **10GB/s backorbit telemetry pipeline**
- Led **radiation/thermal** testing across **5+ subsystems** at NASA facilities, analyzing SEUs, SEFIs, and latches
- Designed a **C++ FreeRTOS blackbox task** on a Vorago MCU for bootlog capture over UART/SPI

Applied Research Laboratories - Signal and Information Sciences Lab

Fall 2025

Machine Learning Intern (Part-time)

Austin, TX

- Developed **PyTorch**-based ML anomaly detection pipelines for **time-series** network data
- Built an evaluation test harness (precision, recall, F1, ROC-AUC) for time-series **foundation models**

MIT Lincoln Laboratory - Group 47 Energy Systems

Summer 2025

Software & Embedded Engineering Intern

Boston, MA

- Built a **multithreaded C++ pipeline** for power system monitoring with **AWS**, **PostgreSQL**, and **Grafana**
- Optimized throughput from 1 Hz → 1 MHz using compression algorithms achieving **90% lossless compression**

Human-Enabled Robotic Technology Laboratory (HeRo Lab)

Jan 2025 – Present

Robotics Research Assistant

Austin, TX

- Developed an **OpenGL + ROS** HUD for the DVRK surgical robot, reducing alignment time by 40%
- Built an **ML speech-classification** model to transcribe words to actions, improving operator efficiency by 200%

Pharmesol (Pharmacy Conversational AI Assistant Startup)

Summer 2024

Software Engineering Intern

NYC, NY

- Built an **LLM testing** tool using conversation transcripts and **OpenAI APIs**, improving testing speed by **70%**

EXTRACURRICULARS + PROJECTS

Texas Rocket Engineering Lab (TREL) | C++, Rust, React, CI/CD

Aug 2025 – Present

- Implemented a **C++** safety-critical **abort controller** monitoring sensor timeouts, liftoff, and engine anomalies
- Designing a **React + TypeScript + Next.js** dashboard to visualize rocket telemetry, using **WebGL** graphs for real-time streaming and recording
- Developing a **Rust** backend for ground control using **ZeroMQ + FlatBuffers**, 100Khz data recording

FTC & BEST Robotics | Mentor, Founder, Captain | 3x Texas Winner, 2x Worlds Qualifier

2021 – Present

Let's Learn Robotics | Founded robotics education program at local library for underserved students

2022 – 2024

Taekwondo | 2nd Deg Black Belt | '25 Collegiates Gold, '25 UT Rumble Gold, '22 Nationals Silver

2014 - Present

TECHNICAL SKILLS

Languages: C/C++, Python, Rust, JavaScript, TypeScript, Java, SQL (PostgreSQL, MySQL)

Frameworks: FreeRTOS, Yocto, ROS, NASA cFS, PyTorch, TensorFlow, REST APIs, React, Node.js

Developer Tools: Unix/Linux, Git, CI/CD, Bazel, Docker, AWS (EC2, Lambda), TCP/IP, Vivado

Libraries: Scikit-learn, Ruptures, NumPy, Pandas, Matplotlib