

CAMERON DEBOUGH

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EDUCATION

University of Arizona — B.S. Computer Science, Minor in Mathematics

Expected May 2029

GPA: 3.87 · Dean's List with Distinction (Fall 2025) · Dean's List (Spring 2026) · 67 Credits Completed

Coursework: Software Development, Discrete Mathematics for CS I–II, Analyzing Data, Web Programming, Calculus I–II, Linear Algebra (II-level and Fall 2026 courses in progress)

EXPERIENCE

Research Programmer — NewFOS Center (New Frontiers of Sound), University of Arizona — NSF Science & Technology Center March 2026 – Present

- Built Python experiment-automation pipelines for nonlinear acoustics research — sweep-rate hysteresis test suite, harmonic SNR analysis, and transfer-function extraction — supporting Volterra-kernel characterization of transducer nonlinearity
- Developed MATLAB SVD and Hankel-DMD signal analysis pipeline producing publication-quality figures for phi-bit (acoustic qubit analogue) experiments on a three-rod coupled acoustic waveguide system
- Automated Tektronix oscilloscopes and function generators via VISA/SCPI for synchronized multi-channel impulse-response capture and frequency-sweep acquisition across dual instruments

Undergraduate Research Assistant — VSI Lab, ECE Department, University of Arizona — Embodied AI & Accessibility · Advisor: Prof. Eungjoo Lee September 2025 – Present

- Developing Gaussian-splatting 3D reconstruction pipelines and NVIDIA Isaac Sim environments for embodied-AI research, including ROS 2 control of LeRobot SO-101 robotic arms and TurtleBot4 autonomous navigation
- Engineering wearable computer-vision pipelines with Meta Aria 2 smart glasses — hand tracking, gaze data, and real-time ML inference on edge devices — for ASL accessibility and skill-assessment applications

Software Engineering Intern — SkillfullyAware / SAAQ January 2025 – Present

- Own the production backend of an AI-powered leadership diagnostic platform serving EO/YPO organizations — Python/FastAPI services with Supabase (PostgreSQL), deployed and live in production
- Built streaming LLM analysis pipeline with a multi-stage scoring model and two-pass generation to eliminate timeouts and truncation; automated end-to-end DOCX report generation from NLP analysis results
- Implementing authentication, Stripe payments, and persistent user storage for MVP launch

Founder & Operator — Durian Car Detailing May 2023 – Present

- Founded and scaled a service business to 100+ completed jobs; built the company website and a Supabase-backed CRM, using data analytics for pricing optimization and customer retention

TECHNICAL PROJECTS

APEX QUANT — Algorithmic Futures Trading System

- Architected event-driven backtesting and paper-trading engine for micro futures (MES/MNQ/MGC) with modular strategy framework, risk management controls, and a broker-integration layer targeting Interactive Brokers (ib_insync)

Thermal-Tracking Turret — Embedded Systems / Robotics

- Built an autonomous heat-tracking pan/tilt turret on Raspberry Pi: AMG8833 8×8 thermal array over I²C, PCA9685 hardware PWM servo control, and a closed-loop feedback algorithm that centers a moving heat source in real time; deployed as a headless systemd service

Synapse Finance — Full-Stack Financial SaaS Platform

- Shipped production app with 50+ active users — Flask backend, React frontend, PostgreSQL, JWT authentication, RESTful APIs, and CI/CD pipeline — applying unit testing, code review, and agile practices

TECHNICAL SKILLS

Languages: Python, Java, C++, JavaScript/TypeScript, C#, MATLAB, SQL, Bash, Golang, HTML/CSS

Backend & Frontend: Flask, FastAPI, Node.js, React, Next.js, Tailwind CSS, RESTful APIs, Microservices, Concurrent Programming

Embedded & Hardware: Raspberry Pi, I²C sensor integration, servo/PWM control (PCA9685), instrument automation (VISA/SCPI), real-time control loops, ROS 2

Data & ML: Signal Processing (FFT, SVD, DMD), Machine Learning, Computer Vision, NLP, NumPy/SciPy, Pandas

DevOps & Databases: Docker, Git/GitHub, CI/CD, Linux, AWS, PostgreSQL, Supabase, MySQL, Firebase, Database Design

Certifications: Certiport Java Foundations · JavaScript Specialist

LEADERSHIP & ACTIVITIES

Coke Fellow — The Coca-Cola Company, Introships Career Discovery Program May – July 2026

- Selected as 1 of 50 fellows nationwide; served as a student leader in a coached cohort program with Coca-Cola executives, developing communication, networking, and professional-development skills

University of Arizona AI Club · MLH Global Hack Week Participant · 13+ GitHub projects