CAMREN KHOURY

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EDUCATION

Clemson University – Clemson, SC
Bachelor of Science in Computer Engineering (In Progress)
Bachelor of Science in Electrical Engineering (In Progress)
Expected Graduation: May 2026

Engineering student with hands-on experience in embedded systems, FPGA development, computer vision, and high-performance computing. Seeking embedded/IoT, firmware, Intelligent Systems, or Software Engineering roles.

EXPERIENCE

Technical Solutions Director — Clemson Engineers for Developing Communities (CEDC), Clemson SC | Fall 2024 – Present

- Lead a 6-member team overseeing project schedules, deliverables, and weekly engineering stand-ups.
- Designed new organization website layout; improved clarity and navigation based on internal feedback.
- Initiated design research for microcontroller-based modular water-quality sensor system.

Swim Coach — North Charleston Aquatic Center, North Charleston SC | May 2024 – July 2024

- Coached youth swimmers ages 5–16, including skill development and competitive readiness.
- Supported six seasonal meets + a 24-team championship event.

Lifeguard — North Charleston Aquatic Center, North Charleston SC | March 2021 – August 2024

- Monitored pool safety and maintained operational protocols during high-traffic periods.

Cybersecurity Intern — Athena Consulting Group (ACG), North Charleston SC | May 2022 – August 2022

- Assisted cybersecurity engineers with basic vulnerability scans and patch-compliance workflow support.
- Worked on weekly presentations, graphic design, and spreadsheets.

TECHNICAL PROJECTS

Automated Pool Vision & Control System – Senior Design I (ECE)

- Built a MATLAB computer-vision pipeline (HSV masking, morphology, centroid extraction, homography calibration, shot geometry).
- Developed a MATLAB App Designer UI for calibration, real-time ball detection, and automated shot execution.
- Implemented Arduino-based PWM control for DC motor, servo, and solenoid firing and tuned PID based closed-loop control via Simulink HIL.
- Integrated full workflow from computer-vision detection → shot planning → physical execution, enabling autonomous play.

Water-Quality Sensor System — CEDC Technical Solutions

- Researching modular sensor platform for turbidity, chlorine, pH, and TDS trend detection.
- Supporting PCB architecture planning and early deployment feasibility analysis.

Raspberry-Pi High-Performance Computing Cluster

- Built and configured a Raspberry-Pi compute cluster including MPI, static-IP networking, SSH key authentication, and NFS shared-filesystem integration.
- Benchmarked cluster performance using HPL and performed workload-distribution tuning to evaluate scaling efficiency.
- Competed in the 2025 SBCC Small-Board Cluster Competition, operating an 11-node cluster and running distributed workloads including password-cracking and ParFEMWARP. Completed single-node execution and diagnosed multi-node MPI failures; placed Top-3 in systems interview.

TECHNICAL SKILLS

Programming: C, Python, C++, Swift, MATLAB, SQL, HTML/CSS/JS, OCaml, R

Hardware: Microcontrollers (Arduino/RPi/ESP32), Circuit Design, PCB Fabrication, Verilog HDL, Simulink

Tools: Git/GitHub, Linux, MATLAB App Designer, Excel Analytics, AI Workflow Automation

GROUPS & AFFILIATIONS

IEEE Student Branch Member • Clemson Engineers for Developing Communities • Clemson Club Swim Team • Clemson SBCC High-Performance Cluster Team