Elvyn Cachapero

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EDUCATION

Louisiana State University (LSU), Baton Rouge, LA **May 2025**

Bachelor of Science, Computer Engineering

Related Coursework: Digital Logic, Electronics, Circuits, PLC, C++, MIPS Assembly, ARM Assembly, Verilog, Microprocessors, PSPICE/MATLAB, Signals & Systems, Computer Networking, Operating Systems, Data Structures, Computer Organization & Architecture, Communications in Computing

EXPERIENCE

Personal Technical Projects **July 2019 – Present**

Self-Initiated Projects & Enthusiast Work

- Built SEO Optimizer Web App, a browser-based tool for website SEO analysis and improvement, featuring keyword extraction, meta tag auditing, and real-time content suggestions (Go, React).
- Developed a self-hosted portfolio website using Go, Git, Docker, and Nginx, showcasing embedded systems, self-hosting infrastructure, and robotics projects.
- Created and maintained a personal homelab using Proxmox and Docker, hosting services such as Pi-hole, WireGuard VPN, Nginx Reverse Proxy Manager, Jellyfin, and Samba file shares.
- Deployed and managed network/system administration tools (firewall, reverse proxy, service automation), enforcing network segmentation and security best practices.

Robotics Installment & Deployment **Aug 2025 – Sept 2025**

Electro-Mechanical Technician (Contract)

- Assembled and installed automated robotic equipment and material handling systems (MHE) within a high-throughput e-commerce facility
- Followed detailed mechanical / electrical schematics and installation procedures to ensure accurate build and system alignment
- Collaborate with cross-functional teams to resolve electrical / mechanical faults under tight operational timelines
- Enforced and adhered to strict safety protocols while working with live machinery and during system power-up
- Supported site readiness by preparing, staging, and verifying components during the robotics deployment phase

Multi-Terrain Drone Team **Aug 2024 – May 2025**

Team Lead – Payload Delivery Drone Project

- Led a multidisciplinary team developing a multi-terrain autonomous delivery drone with ML integration, meeting sponsor requirements.
- Architected system design and selected hardware, balancing power and compatibility constraints.
- Wrote autonomous control scripts in Python using MAVLink protocol for Pixhawk flight controller.
- Implemented a real-time object detection via custom-trained YOLO11 model on OAK-D S2 AI camera; trained model on 1,000+ annotated images using Roboflow and Python.
- Executed structured validation testing for flight behavior, object detection accuracy, and communication range.
- Diagnosed/resolved power distribution and EMI issues to ensure stable sensor and peripheral operation.
- Managed project documentation, regression testing cycles, and design reviews to meet scheduled project milestones.

SKILLS & ACTIVITIES

Programming Languages: C++, Python, Go, Java, Verilog, MIPS, Arm Assembly, PLC

Frontend Development: JavaScript, HTML, CSS, Web Scraping / Parsing

Tools: Xilinx Vivado, PSPICE, Matlab, Keil uVision, LogixPro500, Microsoft Office, Git

Hardware: Soldering, Oscilloscope use, PCB diagnostics, Circuit analysis, Multimeter

Activities: UVSA GC Summit III Family Leader, Repairing/modding personal electronics, Home automation