# 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/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)
- Created and maintained a personal homelab using Proxmox and Docker, hosting services such as Pi-hole, WireGuard, Nginx Reverse Proxy Manager, Jellyfin, and Samba file shares
- Developed a self-hosted portfolio website using Go, Git, Docker, and Nginx, showcasing embedded systems, self-hosting infrastructure, robotics, and machine learning personal projects
- Deployed and managed network/system administration tools (firewall, reverse proxy, service automation), enforcing network segmentation and security best practices
- Developed a card game AI advisor using Pydantic data models, SQL, heuristic scoring, and explainable decision logic (Python)

**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 (Amazon)
- 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 designing and 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 real-time object detection via custom-trained YOLO11 model on OAK-D AI camera and RPi 5; trained model on 1,000+ annotated images using Roboflow and Python
- Executed structured validation testing for flight behavior, object detection accuracy, communication range, and power consumption
- Diagnosed/resolved power distribution and EMI issues to ensure stable sensor and peripheral operations
- Managed project documentation, testing cycles, and design reviews to meet scheduled project milestones

## SKILLS

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

**Frontend Development:** JavaScript, HTML, CSS

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

**Misc:** Soldering, Oscilloscopes, PCB diagnostics, Circuit analysis, Multimeter, OSHA 30-hour certification