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Iyan Nekib

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Education

University of Pittsburgh Pittsburgh, PA
Bachelor of Science - Electrical and Computer Engineering January 2022 – December 2025

- **GPA:** 3.7/4.0
- **Dean's Honors List**: Designated as an Honors student every year in the Swanson School of Engineering (2022-2025)
- **Relevant Coursework:** Embedded Systems, Operating Systems, Computer Architecture, Data Structures & Algorithms, Systems Engineering, Software Construction, Real Time Operating Systems, Big Data & Algorithms, Machine Learning

Co-op Experience

Human Engineering Research Laboratories September 2023 - April 2024
Research Associate Co-op *Pittsburgh, PA*

- Integrated and validated an automated power wheelchair system on NVIDIA Jetson AGX Xavier (Linux) using an Intel RealSense depth camera and real-time control logic to enable curb detection and automatic curb climbing, reducing manual user intervention by 35%.
- Developed and debugged Python/PyQt software interfacing with Arduino-based encoders and load cells, validating real-time sensor pipelines and deployment behavior to reduce runtime failures and inconsistent sensor readings by 30%, supporting clinicians and veterans.

Industry-Sponsored Academic Project

Microsoft September 2025 – December 2025
Software Engineering Project Contributor *Pittsburgh, PA*

- Contributed reliability-focused control-plane enhancements to OpenEBS Mayastor, implementing Rust-based services and REST/OpenAPI-driven metrics endpoints to improve system observability and reduce recurring production alerts by 25%.
- Investigated and debugged production issues across distributed storage components by analyzing logs and Prometheus metrics, validating fixes through peer reviews and post-deployment checks in a Kubernetes-native environment.

Westinghouse Electric Company January 2025 – April 2025
Software Engineering Project Contributor *Cranberry Township, PA*

- Developed a diagnostic tool to parse and visualize 50+ XML-based system configuration files, supporting requirements traceability, documentation, and engineering analysis while reducing data retrieval time by 40%.
- Designed hierarchical system views and validation logic to support debugging, design reviews, and cross-functional engineering decision-making.

Relevant Projects

NEURA Glove – Senior Design Project | *ML, Computer Vision, Sensor Fusion* August 2025 – December 2025

- Built an ML pipeline, mapping IMU & flex-sensor data to 21-point 3D hand poses using an LSTM with Kalman filtering. It leverages synchronized MediaPipe ground truth for smooth Unity VR hand tracking with ≤ 50 ms inference latency.

Disease-Symptom Prediction Model | *scikit-learn, Pandas, NLTK, Matplotlib* June 2025 – August 2025

- Benchmarked Random Forest, SVM, and MLP models for disease prediction from textual symptom data, achieving $\geq 99\%$ accuracy using stratified splits, 10-seed validation, and confusion-matrix analysis.

Integrated Train System Simulation | *PyQt, Conda, MVC, Real-Time Systems* January 2025 – April 2025

- Architected a rail system simulation modeling centralized traffic control (CTC), wayside signaling, track infrastructure, and onboard train controllers. Used PyQt GUIs and a real-time MVC architecture to simulate multi-station operations with physics-based train motion and 0.1-second control updates.

Java-based Civilization VI Replica | *JavaScript, JUnit, Gradle, Git* September 2024 – December 2024

- Designed a modular Civilization-style strategy game implementing city, unit, and combat mechanics using OOP and Extreme Programming practices, achieving 90%+ test coverage through Test-Driven Development.

32-bit MIPS CPU (Multi-Cycle) | *VHDL, Vivado, MIPS32, FSM, Tcl, C++, Zynq* September 2024 – December 2024

- Implemented a multi-cycle 32-bit MIPS CPU in VHDL with FSM-based control, external memory interfacing, and validation via Tcl simulation and Zynq/BRAM C/C++ testing.

Technical Skills

Languages: Python, C++, Java, Rust, Go, JavaScript, C, MATLAB, VHDL, PostgreSQL
AI/ML: GPT-4, LangChain, OpenCV, PyTorch, TensorFlow, Agentic Systems
DevOps & Cloud: Docker, Kubernetes, Azure, GitHub Actions, GitLab, Helm, Prometheus, Grafana, REST APIs
Computer Architecture: VHDL, MIPS32, Multi-cycle CPU design, Vivado, Intel Quartus
Embedded Systems: ESP32, ATMega328P, Arduino, UART/I2C protocols, Zynq
Software Engineering: Agile/Scrum, TDD, Design Patterns, CI/CD, Version Control, System Architecture JUnit, pytest