Daniel Flynn

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Education

Northeastern University, Boston, MA   December 2025

Bachelor of Science in Computer Engineering and Computer Science

GPA: 3.59 (Cum Laude)

Relevant Coursework: Computer Architecture, Natural Language Processing, Software Engineering, Digital Design, Capstone, Linear Systems, Artificial Intelligence, Random Phenomena in EE, Computer Systems, Object-Oriented Design, Algorithms and Data, Logic and Computation, Circuits and Signals, Fundamentals of Networks, Embedded Design

Skills

Languages: Python, C/C++, JavaScript/TypeScript, Java, Assembly (x86/ARM/MIPS), Verilog, SQL, LaTeX, Bash

Software: Git, GitHub Actions, CI/CD, Docker, Kubernetes, Netlify, YAML, CMake, Makefile, SystemD, Ansible, SSH

Hardware and Embedded: Linux, STM32, ESP32, Raspberry Pi, Vivado, FPGAs, UART, SPI, I2C, JTAG, DFU, Qt

Web Development: Node, React, Vite, HTML/CSS, MongoDB, RESTful APIs, Sockets, OpenAPI, Jest, Cypress

Machine Learning: NumPy, PyTorch, TensorFlow, Hugging Face, Transformers, NLP, Deep Learning, OpenCV

Experience

NK Labs

Embedded Software Engineering Co-op   January 2025 – June 2025

- Developed software and firmware for a PCR machine using an STM32 microcontroller integrated with a TI AM62 SoC.
- Wrote C++ front-end code with Qt for menus, buttons, experiment graphs/files, and back-end communication over sockets.
- Implemented experiment timers, estimated time calculation, temperature ramping, and event handling on Python back-end.
- Created JavaScript web app to control the PCR machine with socket events by connecting to the device's IP in a browser.
- Built a custom Linux image with Buildroot, integrating front-end and back-end daemons for the PCR machine.

Schneider Electric

Software Engineering Co-op   January 2024 – June 2024

- Wrote C++ code handling server/client communication between edge devices using OPC UA and MQTT protocols.
- Deployed edge computing middleware for industrial automation, orchestrating services with Docker and Kubernetes.
- Cross-compiled edge computing middleware for multiple CPU architectures and integrated WebAssembly modules.
- Contributed to DevOps processes, CI/CD pipeline, and network management using GitHub Actions and Ansible.

Depuy Synthes Mitek Sports Medicine (Johnson and Johnson)

Software Engineering Co-op   January 2023 – June 2023

- Developed software and firmware for the FMS VUE saline and fluid management pump, utilizing a monochrome dot-matrix LCD for the front-end, and IBM Rhapsody for UML design, code organization, simulation, and validation on the back-end.
- Wrote C code for FMS VUE firmware and Python code to parse information from SystemD logs using journalctl.
- Used Arm Keil compiler and JTAG debugger to program flash memory, debug firmware code, and create release versions.
- Implemented auto calibration mode for FMS VUE pressure compensation based on elevation with laboratory testing.

Selected Projects

ARM LEGv8 CPU Implementation with Schematic Compiler   November 2025 – December 2025

- Verilog implementation and testbench for a 5-stage pipelined CPU with subset of the ARMv8 instruction set, 64-bit registers, ALU, register file, instruction decoder, program counter, control signals, and branching.
- Python schematic compiler that parses verilog code to generate a directed graph of components using DFS and Graphviz.
- CPU featured in the Northeastern COE Newsletter; Schematic compiler was built as a personal project outside of class.

Interactive System for Electronic Creativity   September 2024 – November 2024

- Interactive drawing system using an ESP32-based remote over BLE and C/OpenGL graphics software.
- Remote tracking via Raspberry Pi camera, laser pointer, and Python OpenCV; communication over MQTT.

AI Poker Solver and Simulator   June 2024 – August 2024

- Python poker simulator which generates betting strategies and plays games with mutable agents using genetic algorithms.
- Used NumPy to manage probability matrices based on hand strength, pot size, and balance when new agents are added.

Stack Overflow Plus   September 2025 – November 2025

- Implementation of a fake stack overflow code base with private threads/communities, and end of year Wrapped feature.
- React, Mongoose, Express, Resend/OpenAI APIs for development; GitHub Actions, Render, Cypress, Netlify for CI/CD.