Daniel Mayer

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EDUCATION

Carnegie Mellon University Pittsburgh, PA
Bachelor of Science in Electrical and Computer Engineering *Anticipated May 2026*
Master of Science in Electrical and Computer Engineering (integrated program) *Anticipated May 2027*

- **GPA:** 3.87/4.00
- **Relevant Coursework:** Computer Networks (18-441), Computer Systems (18-213), Object-Oriented Software Construction (17-214), Electronic Devices & Analog Circuits (18-220), and Signals & Systems (18-290).

EXPERIENCE

Combined Joint Systems Integration Laboratory, U.S. Army C5ISR Center Aberdeen Proving Ground, MD
Student Intern — Technology (Civilian) May 2024 - August 2024

- Analyzed potential Army technologies for security vulnerabilities, unexpected behavior, and specification compliance.
- Learned about network engineering and security by configuring, testing, and monitoring development and evaluation networks.
- Wrote Python programs to automate core evaluation tasks, reducing the need for time-consuming manual evaluation.
- Practiced use-case analysis by understanding the specialized technical needs of Army organizations.

Mayer Studios West Lafayette, IN
Co-Founder and Co-President March 2018 — May 2024

- Co-founded a mobile software development business that achieved more than 9,000 sales to 8,250 unique customers in more than 90 countries.
- Designed, developed, and debugged top watchfaces and apps for the Fitbit (JavaScript) and Android (Java) platforms, in addition to backend services for those apps (Node.JS and Python).
- Operated business technical infrastructure – including Linux-based servers with email and web support – with near-100% uptime and a perfect security record.

Carnegie Mellon University Pittsburgh, PA
Teaching Assistant Jan 2024 — May 2024 *and* Aug 2024 — Present

- Supported *18-100 (Introduction to Electrical and Computer Engineering)* during the Spring 2024 semester by conducting small-group teaching sessions, assisting students during office hours, and grading students' work.
- Supported *18-220 (Electronic Devices and Analog Circuits)* during the Fall 2024 semester by helping to run one lab section and assisting students during office hours.

PERSONAL PROJECTS

MitM Proxy with TLS
Request-Intercepting (Man-in-the-Middle) HTTP Proxy with TLS Support (C)

- Used the UNIX sockets interface and the POSIX threads library to concurrently accept and handle multiple proxy clients.
- Enabled support for invisible decoding of TLS-enabled (HTTPS) requests using on-the-fly SSL certificate generation.
- Wrote a parser to separate components of the HTTP requests received by the proxy.
- Optimized resource allocations (memory, storage, and networking) to improve performance under heavy loads.

Markdown++ (or MD++)
Markup Language and Parser (Java)

- Developed a novel specification for a markup language.
- Implemented a high-efficiency, concurrency-enabled MD++ to HTML converter.
- Authored documentation and tests for the markup language and its parser.

What's Next
Subscription-Tracking Android App (Java)

- Constructed an Android app to permit users to log their subscriptions, view their total spending, and receive alerts on subscription renewal dates.
- Implemented support for push notifications, in-app purchases, and advertising within the app.

SKILLS

- **Programming Languages:** C, Java, Python, and JavaScript/TypeScript
- **Software Development Toolchains:** Version Control (Git), CI/CD (Maven and GitHub Actions), and Linux
- **Engineering Tools:** MATLAB and Electrical Lab Equipment