

Connor McCue

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EDUCATION

Virginia Polytechnic Institute and State University

August 2022 - May 2026

Blacksburg, VA

- *B.S. in Computer Science, minors in Cybersecurity and Mathematics* | GPA: 3.45/4.0
- *Dean's List: Fall 2022, Spring 2023, Fall 2024, Spring 2025, Fall 2025, Spring 2026*

Relevant Coursework:

- Data and Algorithm Analysis, Computer Systems, Data Structures and Algorithms, Fundamentals of Info Security, Principles of Computer Security, Network Architecture Programming, Cryptography, Differential Equations, Combinatorics, Linear Algebra

EXPERIENCE

Systems Support Specialist

September 2026 - Current

Atmospheric Interdisciplinary Research Institute

Remote

- Support SOC2 initiatives by evaluating security controls, documenting compliance requirements, and implementing processes for access management, audit evidence, and cloud security.
- Analyze and modernize a NOAA Short-Range Weather application, evaluating legacy components and adapting functionality
- Collaborate with principal scientists on technical requirements and software evaluation and development lifecycles

Contract Software Engineer

July 2026 - Current

Five 9's Consulting

Hoboken, NJ / Remote

- Build an invoice automation system that centralizes storage, classifies vendors, extracts billing data, and generates reports.
- Develop a Python/FastAPI backend with PostgreSQL, Azure Blob Storage, and Microsoft Graph API to automate workbooks.
- Integrate Azure AI Document Intelligence to extract invoice fields, validate results, and apply vendor-specific logic.
- Engineer data pipelines to aggregate invoices by vendor/month, populate Excel worksheets, and support spend analysis.

Undergraduate Researcher

January 2026 - May 2026

Virginia Polytechnic Institute and State University

Blacksburg, VA

- Designed a relational database schema modeling web-scale data (URLs, domain names) for an open-source search engine.
- Architected a multi-database solution using MySQL, Redis, and MongoDB for distinct storage and access requirements.
- Partnered with research team members to document changes and integrate database components into the broader project.

Software Design Intern

March 2025 - July 2025

Center for Engineering Excellence and Discovery

Blacksburg, VA

- Developed a custom embedded systems device from concept to deployment, supporting 120+ kits for pre-college programs.
- Built software from scratch in C/C++ for an ESP32 platform with custom features, system settings, and Bluetooth functionality.
- Collaborated within a 10-person team to integrate software with an LCD display, GPIO-controlled buttons, and custom PCB.
- Diagnosed and resolved hardware-software integration issues involving button inputs, PCB communication, and system testing.

PROJECTS

Coverage-Guided Fuzzer for Real-World Software

- Developed a high-performance coverage-guided fuzzer in C/C++, improving testing depth and bug discovery.
- Integrated LLVM sanitizer instrumentation to collect fine-grained execution coverage reaching 26.15% coverage over 24 hours.
- Engineered in-process fuzzing architecture achieving 204 exec/s, improving throughput by ~3x the previous design.
- Generated 17.66 million test cases, analyzing coverage growth, corpus behavior and crash patterns on complex software.

Firebase Authenticated Virtual Queue Website

- Built a real-time queue management system using JavaScript/HTML & Firebase, supporting live updates and multi-user access.
- Protected sensitive information by separating public and private data models and enforcing strict Firestore security rules.
- Designed a role-based admin dashboard with secure access control for queue operations for 10+ people.
- Applied server-side validation and atomic updates to prevent race conditions/inconsistent state.

StrideMind: Analytics Dashboard & AI Running Coach

- Built a full-stack running analytics dashboard utilizing Strava API to integrate activity data and track mileage, pace, and trends.
- Engineered a Flask and SQLite backend with API endpoints for activity syncing, metrics, chart data, and AI functionality.
- Embedded an LLM-powered coaching assistant that analyzes recent runs and training context to generate personalized feedback, insights, and improvement suggestions.

LEADERSHIP

Peer Leader

May 2025 - May 2026

Center for Engineering Excellence and Discovery (CEED)

- Co-led the implementation and execution of a peer mentoring program supporting ~700 freshman engineering students.
- Organized recruitment events, facilitated meetings, and established mentor roles to promote consistent program delivery.
- Coordinated with fellow peer leaders and program staff to distribute responsibilities and plan events throughout the semester.

Executive Board Member, Scribe

Theta Tau - Professional Engineering Fraternity

January 2024 - January 2025

- Maintained and organized information for 50+ members tracking professional paperwork, including bylaw information, university documentation, and standard operating procedures.

SKILLS

Languages: Java, Python, C, C++, HTML, CSS, TypeScript, Javascript, SQL

Frameworks: Flask, Firebase, Firestore, NumPy, Pandas, Chart.js, Tailwind CSS

Tools: Git, GitHub, GitLab, Linux, SQLite, Wireshark, VSCode, Firebase Auth, Firebase Hosting

Concepts: REST APIs, API Integration, Full-Stack Development, Systems Programming, Fuzzing, ETL Pipelines, Database Systems