

Riley Fletcher

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Education

University of Virginia – Bachelor of Computer Science, Minor in Data Science

3.8 GPA, May 2025

Experience

Software Engineering Intern, Dell Technologies – Hopkinton, MA

May 2024 – Aug 2024

- Added feature within Dell PowerStore appliances in C to collect IO metadata on NVMe SSDs for performance profiling, bottleneck detection, root cause analysis, and generated graphs for response time, IO depth, bandwidth, and IOPs
- Utilized Datashader, Pandas, and HDF5 to query 10GB+ datasets, and visualized 30+ million data points in seconds with interactive graphs using Jupyter and HoloViews to reduce developer triage time for regression testing and customer issues
- Implemented a drive filtering feature with C++ that reduced binary IO trace file size by up to 90% in some cases
- Created a Python CLI tool with argparse and fio to automate bandwidth and throughput workloads on storage appliances
- Utilized Protobuf to generate C++ headers and Python classes as an interface between frontend CLI and backend service

Software Engineering Intern, United States Navy – Dahlgren, VA

May 2023 – Aug 2023

- Obtained secret clearance to enhance Navy telemetry-based training software, implementing new UI features with JavaFX, FXML, and CSS, and integrating a VMWare dashboard via RDP, reducing screen freezes to 0% in most cases
- Automated the refactoring of 250+ code smells addressing OWASP Top Ten security issues and outdated Java practices
- Introduced the JUnit testing framework to critical codebase sections, increasing code coverage from 0% to 25-50%
- Leveraged Bash, Gradle, and GitLab to streamline testing, building, packaging, and deploying binaries to an artifactory
- Participated in a daily stand-up with 8 developers, utilizing Jira and Confluence to track and triage daily issues

Computer Science Teaching Assistant, University of Virginia – Charlottesville, VA

Jan 2024 – Present

- Led labs and office hours for 30+ students; proctored exams for 150+ in Computer Systems and Organization, a course covering logic gates, CPU architecture, x86 assembly, C programming, memory management, and Linux networking

Information Technology Intern, Virginia Railway Express – Alexandria, VA

May 2022 – Apr 2023

- Built a PowerShell utility for querying and filtering data to provide for a cybersecurity audit of 75+ employees
- Resolved over 100 help desk tickets involving Windows Server, OneDrive, Azure virtual machines, and Cisco devices
- Performed maintenance on Cisco switches, security appliances, and servers to help re-architect office network layout

Projects

Automotive Chatbot – Python, SQLite, OpenAI API, Matplotlib

github.com/nrfletcher/openai-chatbot

- Customizable chatbot embedded into a Discord server that can answer questions using an internal corpus of data
- Created an ETL pipeline to aggregate data, build necessary databases, and provide an API to the chatbot service

r86 Virtual Machine – C++, C, CMake

github.com/nrfletcher/r86-virtual-machine

- LC-3 and x86 based virtual machine for emulating a 32-bit processor on a small instruction set for educational purposes
- Stand-alone tool that features a program loader and GDB-esque debugging utility to analyze memory and instructions

Discord Trivia – Python, MySQL, PyQt, Discord API

github.com/nrfletcher/trivia-bot

- Trivia bot utilizing OpenTrivia API that adds a leaderboard, server analytics, and admin commands to a Discord server
- Features a backend service for storing and modifying user data using a PyQt desktop app and MySQL database

HistoryMaps – React.js, Next.js, Google Maps API, Spring Boot, PostgreSQL

github.com/nrfletcher/historymaps

- Full-stack educational app that explores the intersection of history and geography with a React frontend and Java backend
- Utilizing AWS Amplify for hosting, Route53 for DNS, RDS PostgreSQL for storage, and styling with Bootstrap

theCourseForum – Python, Django, PostgreSQL, Docker

theCourseForum.com

- Developer for a course rating and professor review website used by thousands of UVA students each semester
- Implemented Microsoft authentication for user accounts during the school's transition away from Google services

Skills

Languages: Python, Java, C++, C, TypeScript, JavaScript, HTML/CSS, SQL, Bash

Libraries/Frameworks: React.js, Next.js, JavaFX, Spring Boot, Django, TailwindCSS, JUnit, PyQt, Java Swing

Tools: Amazon Web Services, Google Cloud, Docker, Git/GitLab, MySQL/PostgreSQL, CMake, Gradle, Node.js