

SAMUEL LYON

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Available May - December 2022 • Boston, MA

EDUCATION

Northeastern University, Khoury College of Computer Sciences

Candidate for BS in Computer Science and Mathematics

Candidate for MS in Computer Science

Sep 2020 - Present

Expected May 2024

Expected May 2025

- **GPA:** 3.88/4.0

- **Coursework:** Object-Oriented Design • Algorithms • Programming Languages • Computer Systems • Linear Algebra

- **Honors and Clubs:** Dean's List • Northeastern Honors College • Entrepreneur Club (Demo Day Finalist)

Mystic Valley Regional Charter School

Aug 2016 – Jun 2020

- **GPA:** 4.66/4.0

- **Activities:** STEM Club • Varsity Swim • Varsity Cross Country • National Honors Society • Class Secretary

- **Honors:** Excellence in Mathematics + Economics • Premio de Plata recipient, National Spanish Exam

SKILLS

- **Languages:** Python • C# • Rust • C • Java • Racket • HTML/CSS • x86 • MIPS • JavaScript • SQL • ACL2 • C++

- **Systems:** Linux • MacOS • Windows • WSL2

- **Technologies:** Unity • Git • GitHub • Emacs • PostgreSQL • Redis • Flask • Actix Web • Discord.py • SQLite3

PROJECTS

Gradetrack

Feb 2022 – Present

- Programmed web app allowing users to track and predict grades
- Uses Flask and PostgreSQL backend to store user data, deployed with Docker to a VPS
- Exposes an API to allow users to sync and manage grades in personal applications

Handins CLI

Mar 2021 – Present

- Wrote Rust command line application enabling students to submit homework and check grades from the command line
- Analyzed university homework server to implement remote authentication and web scraping

FUSE Filesystem Driver

Dec 2021

- Created a C driver for a FUSE filesystem, allowing reads and writes of small files
- Employed stress testing to quickly find and reproduce obscure bugs

Image Editor

June 2021

- Developed a Java GUI/command line app allowing users to edit images in various ways
- Implemented MVC pattern and used SOLID/functional principles for easily extensible code
- Documented and tested all functionality with complete code coverage

Games:

- Developed a rhythm game in Unity; serialized user-created content to enable easy sharing with other users
- Built a 2D platformer in Unity and a custom 2D physics engine for smooth gameplay

Additional Projects:

- Created a Flask backend for a tutoring forum, with user authentication and posts stored in a PostgreSQL database
- Designed a low-level binary multiplication implementation for Repl.it Challenge #1 (placed first)
- Decompiled MIPS code to C as a contributor to the Zelda Reverse Engineering Team

EXPERIENCE

Teaching Assistant, Fundamentals of Computer Science II Accelerated

Jan 2022 – Present

Khoury College of Computer Sciences | Boston, MA

- Taught 80+ students in a programming design course using Java and Object-Oriented Programming
- Introduced students to proper code documentation practices and Test-Driven Development
- Conducted lab and hosted office hours weekly to supplement lecture content and offer homework assistance

Swim Instructor

Jul 2021 – Jan 2022

British Swim School | Stoneham, MA

- Collaborated with other coaches to prepare children for competitive swimming
- Led swim lessons daily/weekly acclimating young children to water and training older children/adults

Teaching Assistant, Fundamentals of Computer Science I

Sep 2021 – Dec 2021

Khoury College of Computer Sciences | Boston, MA

- Assisted 1000+ students learning programming design principles and functional programming with Racket
- Guided beginners through learning Test-Driven Development and handling recursive data structures
- Led lab sessions and hosted office hours to supplement lectures and help students one-on-one

Instructor/Coach

Sep 2017 – Mar 2020

Mystic Swimming | Malden, MA

- Mentored and oversaw classes for newer volunteers
- Taught general water safety skills and basic swim techniques to large groups of children