Joe **McLaughlin**

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Education

Carnegie Mellon University *Pittsburgh, PA*

B.S. In Computer Science | GPA: 3.87 *Expected May 2025*

- Selected Course Topics: Parallel Algorithms, Computer Systems, Theoretical Computer Science, Machine Learning, Data Structures and Algorithms, Human-Computer Interaction, Probability Theory, Functional Programming

Experience

Human-Computer Interaction Institute *Pittsburgh, PA*

UNDERGRADUATE RESEARCHER *May 2023 - Present*

- Developing an automated system to upload daily posts to a forum and various social media sites in React improve

Carnegie Mellon University *Pittsburgh, PA*

Teaching Assistant *January 2023 - Present*

- Lead weekly recitations and office hours supporting 200+ students in parallel algorithm design and functional programming in Standard ML

Supplemental Instruction Leader *August 2022 - May 2023*

- Led weekly review sessions and provided tutoring for a 400+ student Data Structures and Algorithms and C programming course

Pennsylvania Governor's School for the Sciences *Pittsburgh, PA*

Teaching Assistant / Counselor *June 2022 - July 2022*

- Supported 70+ students in programming fundamentals and minimax algorithm design for turn-based games in Python and Java

Projects

Blackjack Simulator *Github*

Co-Developer *February 2023 - Present*

- Developing a terminal interface for testing Blackjack playing and betting strategies in Python

DFA Simulator *Website*

Developer *April 2023 - June 2023*

- Wrote a website to interactively design and test Deterministic Finite Automata using JavaScript, CSS and HTML

Binder *Github*

Co-Developer *March 2022 - Present*

- Developed a Rails application to facilitate tool transactions and second thing in Ruby using a MySQL database
- Actively used by Carnegie Mellon's Spring Carnival Committee

Website Tracker *Github*

Developer *October 2022 - Present*

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Skills and Interests

Programming Python, C, C++, Java, Javascript, HTML, CSS, Ruby, Standard ML
React, Rails, SQL, PyTorch, Git

Other Interests Teaching, _____, Cycling

Relevant Coursework: Parallel and Sequential Data Structures and Algorithms, Introduction to Computer Systems, Principles of Functional Programming, Principles of Imperative Computation, Probability Theory for Computer Scientists, Calculus in Three Dimensions,
Mathematical Foundations for Computer Science, Matrices and Linear Transformations

Carnegie Mellon University | Pittsburgh, PA
Teaching Assistant January 2023 - Present

- Prepare and lead weekly hour-long recitation sessions to reinforce concepts introduced in lecture for 200-person 'Parallel and Sequential Data Structures and Algorithms' course
- Host weekly Office Hour sessions and asynchronously provide additional support to students to improve understanding of SML programming language course material including parallel computation, graph algorithms, and dynamic programming

Carnegie Mellon University | Pittsburgh, PA
Supplemental Instruction Leader August 2022 - May 2023

- Designed lesson plans for Supplemental Instruction sessions for 400-person 'Principles of Imperative Computation' course
- Led biweekly review sessions to improve student understanding of course material, including knowledge of C programming and Data Structures and Algorithms

Pennsylvania Governor's School for the Sciences | Pittsburgh, PA
Teaching Assistant / Counselor June 2022 - July 2022

- Assisted talented Pennsylvanian high schoolers in understanding concepts introduced in five week course on Python and Computer Science fundamentals
- Supervised and guided students designing mini-max algorithms in Java and Python to match human play in complex turn-based games

Projects _____

Website Tracker Browser Extension Summer 2022

- Developed Google Chrome Extension to track daily time spent on different websites and compile data in user-friendly manner
- Wrote backend in Javascript using Google's Chrome Extension API, and frontend using Javascript, CSS, and HTML

3D Sensor Digital Sculpture Creator Summer 2021

- Developed program to process image and depth data from Xbox Kinect Sensor, creating 3D sculpture rendered in Minecraft
- Wrote project in Java, utilizing API for retrieving Kinect Sensor data and Minecraft server plugin development API to interface with the game

Skills

Technical Skills: C, C++, Java, Python, C#, JavaScript, CSS, HTML, Ruby, Rails, SML, SQL, Git