

Zack Eisbach

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(203) 707-7395 | Boston, MA | Available May - August 2024

EDUCATION

Northeastern University | Boston, MA September 2022 - Present

Khoury College of Computer Sciences | Honors Program | GPA: 4.00

Candidate for Bachelor of Science in Computer Science and Mathematics, 2025

Graduate Coursework: Algorithms | Programming Languages

Undergraduate Coursework: Object-Oriented Design | Theory of Computation | Graph Theory
Logic and Computation | Advanced Probability and Statistics

Relevant Activities: Math Club | Competitive Programming Club | Oasis Dev Club

EXPERIENCE

Khoury College of Computer Sciences | Boston, MA September 2023 - Present

Teaching Assistant for Accelerated Fundamentals of Computer Science

- Prepare reference solutions, craft autograder test suites, conduct office hours, and grade weekly assignments to provide a class of over 50 students with comprehensive support and feedback
- Direct weekly lab sessions for a cohort of 30 students, expanding upon classroom concepts
- Design solutions with intentionally subtle errors to assess the robustness of student test suites

University of Connecticut | Storrs, CT

June 2021 - October 2021

Research Assistant

- Developed and rigorously tested a Python-based script for transforming proprietary outputs of RANGER-DTL into the globally used RecPhyloXML format, now referenced in a textbook
- Engaged in Computational Biology Research Group lab meetings to present findings and gain insights from fellow members' presentations, facilitating knowledge exchange and collaboration
- Reviewed literature and participated in one-on-one mentorship sessions to gain working knowledge of computational biology and graph-theoretic methods for phylogenetic reconciliation

PROJECTS

Kellisip | Haskell, Megaparsec, Hspec

- Engineered an interpreter and robust test suite for a Scheme-like language, achieving compliance with the majority of language features specified in the R5RS standard including first-class lambda functions, local binding constructs, lexical scoping, I/O primitives, and hierarchical numeric types
- Crafted a custom lexer and parser using parser combinators and leveraged monad transformers to enable effective evaluation and provide specialized, informative error messages for users
- Implemented support for both batch processing and interactive usage with user-defined libraries

NEU Dining VS | React, Tailwind, Redis

- Developed a sleek web app allowing students to quickly and conveniently compare meal options across Northeastern campus dining halls, with load times up to 700% faster than competing sites
- Accommodated students with dietary restrictions using varied filtering and sorting functionalities
- Created and maintained a Redis-integrated API, facilitating lightning-fast access via daily caching

BattleSalvo | Java, Jackson, JUnit

- Designed a terminal-based Battleship-like game where players compete against human rivals or AI adversaries either locally or remotely by exchanging serialized JSON data over a network
- Utilized model-view-controller (MVC) architecture, test-driven development (TDD), the proxy design pattern, and mocks to enable seamless expansion in response to evolving requirements

TECHNICAL KNOWLEDGE

Languages: Java, Python, JavaScript, React, HTML/CSS, Haskell, Racket/Scheme, Lean, Coq

Tools: Git, LaTeX, Emacs, VSCode, IntelliJ IDEA, DigitalOcean, WordPress, macOS