

## EDUCATION

> **Northeastern University** | Khoury College of Computer Sciences | Honors  
B. S. Computer Science & Mathematics \ Physics & Chemistry Minor \ 3.79 GPA Boston, MA  
2021 – 2025

## WORK EXPERIENCE

> **Associate Software Engineer @ Fidelity Investments:** Fund & Investment Operations June 2025 – Present  
o Developed scalable applications using Typescript/Angular, Java/SpringBoot, SQL, and AWS.  
o Introduced static nullness checks and Lombok codegen to make code more readable & safer.  
o Followed Agile methodology and test-driven development with tools like Jira, Jasmine, Cypress, and JUnit.

> **Computational Protein Design Co-op @ Tessera Therapeutics:** Gene Therapy Jan. 2024 – June 2024  
o Used statistical techniques to test biological hypothesis from protein engineering data.  
o Built an internal web app to expedite and democratize protein design analysis using Flask and Plotly.  
o Integrated molecular structure libraries and custom plot configurations to enable interactive visualizations.

> **Software Engineering Co-op @ Nth Cycle:** Metal Refining Startup Jan. 2023 – June 2023  
o Designed and implemented a React webapp (see /lucas-demo-screenshots) which used a drag and drop library for no-code design of forms, pipelines, and charts. Deployed to MongoDB Atlas and Microsoft Azure.  
o Fixed problems with internet, printers, laptops, AzureVPN and Remote Desktop in lieu of an IT department.

> **Peer Tutoring:** Discrete, CS 1 & 2, OOD, Algo, Phys 2, Calc 3, LinAlg, Prob & Stats Sep. 2022 – June 2023  
o Demonstrate patience and professionalism with tutees having a variety of skill levels.  
o 164 hours total ≈ 4 hrs/wk.

> **Sijia Dong Lab:** Computational chemistry research group Dec. 2021 – Jan. 2023  
o  Designed a QtPy GUI and script to autogenerate protein-ligand docking poses in Schrodinger Maestro.  
o  Used Bash, MATLAB, Python, and TensorFlow to transform molecular coordinates into a normalized form using matrix manipulations for use in an explainable AI model to understand how different ligands influence the excitation wavelengths and strengths in different docking poses.

> **Internship with Town of Holliston Director of Technology:** Nov. 2020 – Feb. 2021, Apr. 2021 – May 2021  
o Setup and resolve problems with phones, printers, desktops, software, and file storage for municipal departments.

## COURSES AND TECH STACK

> **Tech:** JavaScript/TypeScript (Angular/React), Java/Kotlin, Python, Lean4, Bash/Linux/SLURM, Racket, Rust

> **CS:** Software Dev, AI, Networks & Distributed Systems, Object Oriented Design, Logic & Computation

> **Math:** PDEs, Statistics & Stochastic Processes, Linear Algebra, Number Theory, Group Theory, Calculus 3

> **Chemistry:** Organic Chemistry 1 & 2, Physical Chemistry, Analytical Chemistry, Quantum Chemistry

> **Physics:** Electronics, Quantum Computation and Information, Modern Physics

## PROJECTS

**CA-DSL** | *Typed Racket* /zedeckj/ca-dsl Spring 2025  
Co-authored a domain specific language for describing and executing variants of Conway's Game of Life as part of a course in my final semester. Made extensive use of Racket's macro system for terser and more readable syntax, and also made extensive use of parametric polymorphism to maximize extensibility to different variants.

**N-Bullets in Racket** | *Intermediate Student Language (Racket)* /nbulletsrkt Apr. 2022  
Rewrote a project for a Java-based course in Racket over spring break to compare the two languages. Racket was terser, easier to properly test, and (subjectively) more readable. Additional findings and opinions are in the README.

## ONGOING LEARNING

**Type Theory** |  Learning type theory from a textbook which uses Lean to make the theory more concrete.

**Programming Languages** |  Following along with a class examining the PL design choices behind JS/TS.