

# Nathaniel White

  natetheadequate

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## EDUCATION

- > **Northeastern University** | Khoury College of Computer Sciences | Honors Boston, MA  
Candidate, B.S. Computer Science & Mathematics \\\ Physics & Chemistry Minor \\\ 3.89 GPA 2021 – 2025
- > **Holliston High School** Holliston, MA  
Track/XC \\\ NHS \\\ Science Olympiad \\\ 1570 SAT \\\ National Merit Finalist 2017 – 2021







## COURSEWORK AND KNOWLEDGE | \* := in progress/learning

- > **Proficient Languages:** Typescript, MongoDB, Python, React, SQL, Java, Lean4, Bash, Linux, C, Mathematica
- > **Familiar Languages:** MATLAB, Rust\*, Machine Learning\*, CUDA, Slurm/HPC,  $\text{\LaTeX}$ , Schrodinger Maestro
- > **CS:** Theory of Computation, Logic & Comp., Networks & Distributed Systems, Algorithms, Object Oriented Design
- > **Math:** Statistics & Stochastic Processes, Linear Algebra, Number Theory, Group Theory, Calculus 3, Diff. Eq.
- > **Science:** Organic Chemistry 1, Physical Chemistry, Quantum Computation and Information, Modern Physics

## RESEARCH AND WORK

- > **Computational Biochemistry Co-op @ Tessera Therapeutics:** Gene Rewriting Jan. 2024 – June 2024
  - o Worked on the Protein and RNA Engineering team.
- > **Software Engineering Co-op @ Nth Cycle:** Metal Refining Startup Jan. 2023 – June 2023
  - o Identified problems with data capture and analysis such as manually transcribing pdfs, siloed data analysis procedures, nonstandardized datasheets, and exclusively using Excel/paper. Designed and implemented a webapp (see LUCAS project) which used drag-and-drop libraries and MongoDB for a no-code solution.
  - o Fixed problems with internet, printers, laptops, AzureVPN and Remote Desktop in lieu of an IT department
- > **Peer Tutoring:** Discrete, Fundies 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. 164 hours total  $\approx$  4 hrs/wk
- > **Sijia Dong Lab:** Computational chemistry research group Dec. 2021 – Jan. 2023
  - o Used automation scripts and ML to investigate ligand-protein binding.
- > **Northeastern Undergrad Computer Architecture Research Group:** Nov. 2021 – May 2022
  - o Learned C and beginner CUDA through programming challenges given by Prof. Kaeli
- > **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

## PROJECTS

- > **LUCAS** | ReactTS, MongoDB, Azure,  RJSF,  Blockly  /lucas-demo-screenshots Feb. 2023 – Jun. 2023  
Webapp which enabled drag-and-drop design of forms and data analysis pipelines and graphics. Enabled parsing of files output from a specific machine to upload multiple documents with same metadata, dimensional analysis in pipelines, linking a sample to the other steps in its history, which could have both branching and merging, and the capability to make graphs and tables, all without (them) coding. Access to full demo site available on request. Written for Nth Cycle
- > **ML Excitation Model** | Python, Maestro, MATLAB, Bash, TensorFlow Aug. 2022 – Jan. 2023  
Identify what aspects of chloramide, flavins, and styrene influence their excitation wavelengths when they are in proximity to each other. Have written a MATLAB/Python/bash script that transforms the raw coordinates of each atom into more usable and interpretable features, which then can be used as input for a neural network or rounded for use in a neural network to predict excitation wavelengths and strengths. Completed as part of Sijia Dong Lab
- > **Automated Docker** | Python, Maestro, Slurm, QtPy  /automated\_docking-script July 2022  
Designed a GUI add-on and backend script for Schrodinger Maestro that automated a time-consuming and error-prone process of generating docking poses for three molecules in all permutations. Completed as part of Sijia Dong Lab
- > **N-Bullets in Racket** | Intermediate Student Language (Racket subset)  /nbulletsrkt Apr. 2022  
Rewrote a project for a Java-based course in Racket to compare the two languages. Racket was terser, easier to properly test, and (subjectively) more readable. Additional findings and opinions are in the README.
- > **Grave Finder** | ReactJS, PHP, MySQL, Cloudflare, cPanel, SSL  /findagravemiddleborough.ml Dec. 2020  
Website to view grave data for a local cemetery preservation nonprofit. Makes use of join tables, searching, filtering, React+MaterialUI forms, an administrator login with a cooldown period after too many login attempts.