

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 \\\ 3.87 GPA 2021 – May 2025







RESEARCH AND WORK | * := Part-Time, † := Under Non-Disclosure Agreement

- > **Computational Protein Design Co-op @ Tessera Therapeutics**[†]: Genetic Medicine Jan. 2024 – June 2024
◦ Onboarded and analyzed biological data.
◦ Developed tools in Python to aid with computational analysis.
- > **Software Engineering Co-op @ Nth Cycle**: Metal Refining Startup Jan. 2023 – June 2023
◦ 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.
◦ 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
◦ Demonstrate patience and professionalism with tutees having a variety of skill levels. 164 hours total ≈ 4 hrs/wk
- > **Sijia Dong Lab**^{*}: Computational chemistry research group Dec. 2021 – Jan. 2023
◦ Used automation scripts and ML to investigate ligand-protein binding.
- > **Northeastern Undergrad Computer Architecture Research Group**^{*}: Nov. 2021 – May 2022
◦ 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
◦ Setup and resolve problems with phones, printers, desktops, software, and file storage for municipal departments

SELECTED COURSEWORK AND KNOWLEDGE | * := in progress/learning

- > **Languages**: [Typescript](#), [React](#), [Python](#), [MongoDB](#), [Java](#), [Lean4](#), [Bash](#), [Linux](#), [C](#), [Mathematica](#), [Rust](#)^{*}
- > **CS**: [AI](#)^{*}, [Software Development](#)^{*}, [Networks & Distributed Systems](#), [Object Oriented Design](#), [Logic & Comp.](#),
- > **Math**: [Statistics & Stochastic Processes](#), [Linear Algebra](#), [Number Theory](#), [Group Theory](#), [Calculus 3](#), [Diff. Eq.](#)
- > **Chemistry**: [Organic Chemistry 1 & 2](#)^{*}, [Physical Chemistry](#), [Analytical Chemistry](#)^{*}, [Quantum Chemistry](#)^{*}
- > **Physics**: [Quantum Computation and Information](#), [Electronics](#)^{*}, [Modern Physics](#)

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](#), [Schrodinger](#), [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, and an administrator login with a cooldown period after too many login attempts.