Nathaniel White

 natetheadequate — natewhite345@gmail.com

EDUCATION

Seeking a co-op for January 2024 – June 2024

> **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*

> **Proficient Languages**: MongoDB, React, SQL, Java, Python, Mathematica, C, Lean4, Linux, Bash
> **Familiar Languages**: Cuda, Rust*, MATLAB, Machine Learning*, Slurm/HPC, Schrodinger Maestro
> **CS**: Theory of Computation, Logic & Comp., Networks & Distributed Systems, Algorithms, Object Oriented Design
> **Math**: Number Theory, Group Theory, Statistics & Stochastic Processes, Linear Algebra, Calc 3, Prob & Stats
> **Physics**: Physics 1, Physics 2, Modern Physics, Quantum Computation and Information*
> **Chem**: Physical Chemistry*, Organic Chemistry 1*

RESEARCH AND WORK

> **Software Engineering Co-op @ Nth Cycle:** Metal Refining Startup *Jan. 2023 – June 2023*
> - Created a Mongo-React webapp which let scientists a drag and drop library to design forms and dashboards, better standardizing data entry and enabling more powerful analysis than Excel or physical lab notebooks.
> - Fixed IT problems in lieu of an IT department
> - Reference: Chris Thoren

> **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
> - Generate new ways to explain content

> **Sijia Dong Lab:** Computational chemistry research group *Dec. 2021 – Jan. 2023*
> - Bypass time-consuming processes and calculations using automation scripts and ML
> - Listen and understand technical constraints and communicate progress and possible avenues for progress

> **Internship with Town of Holliston Director of Technology:** *Nov. 2020 – Feb. 2021, Apr. 2021 – May 2021*
> - Implement proper settings and software on new desktops for various town departments such as the police and the senior center
> - Resolve problems with phones, printers, and file storage for various town employees

> **Kitchen Worker at Hannah BG Shaw Home for the Aged:** Server, dishwasher & cook *June 2020 – Aug 2021*
> - Fulfill resident requests in compliance with dietary restrictions
> - Exhibit patience and communicate clearly in a fast-paced environment

PROJECTS   * := *in progress*

> **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 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.

> **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.

> **N-Bullets in Racket** *Racket*   /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.