Nathaniel White

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EDUCATION

Seeking a co-op for January 2023 – June 2023

> **Northeastern University, Khoury College of Computer Sciences, Honors**   Boston, MA
> Candidate for a B. S. in Computer Science & Mathematics \\ Physics Minor \\ 3.87 GPA   *Aug. 2021 – Dec. 2025*

> **Holliston High School**   Holliston, MA
> Track/XC \\ NHS \\ Science Olympiad \\ SAT: 1570 \\ National Merit Finalist   *Aug. 2017 – May 2021*

COMPUTER KNOWLEDGE

> **Web Dev**: React, MaterialUI, JavaScript, HTML/CSS, PHP, MySQL, REST API, Express, Jest, Node
> **Scientific Computing**: Lean (Formal Verification), Slurm/HPC, TensorFlow, LaTeX, Schrodinger Maestro
> **General**: Java, Racket, Python, Linux, Bash, Git, C, Cuda, VEX RobotC, Git, Github, QtPy

COURSEWORK   ** := in progress*

> **CS**: Object Oriented Design, Algorithms, Networks and Distributed Systems*, Logic and Computation*
> **Math**: Calculus 3, Linear Algebra, Probability & Statistics, Statistics & Stochastic Processes*, Group Theory*
> **Physics**: Physics 1, (Mechanics, Basic fluid dynamics), Physics 2 (Waves, Electricity, Magnetism)

PROJECTS   ** := in progress*

> **ML Excitation Model***   *Python, Maestro, MATLAB, Bash, TensorFlow*   Email for code   *Aug. 2022 – Present*
> 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.

RESEARCH AND WORK

> **Peer Tutoring:** Discrete, Fundies 1 & 2, OOD, Algo, Phys 2, Calc 3, LinAlg, Prob & Stats   *Sep. 2022 – Present*
>   ○ 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 – Present*
>   ○ 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

INTERESTS AND OTHER SKILLS

> B2 Proficiency in French \\ Proofs/logic \\ Climate emergency \\ Running \\ Amateur cooking \\ Political economy