



YIXIN “ELLA” GUO

Medford, MA

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EDUCATION

Tufts University

May 2025

Bachelor of Science in Physics and Computer Science with Minor in Studio Art

Medford, MA

GPA: 3.90/4.00, Dean's List

Academic Awards: Howard Sample Prize Scholarship in Physics

Relevant Courses: Algorithms, Data Structures, Machine Structure and Assembly-Language Programming, Linear Algebra, Bridge to Higher Mathematics (Discrete Mathematics), Computational Physics, Intermediate Mechanics, Quantum Theory, Optics and Wave Motion

EXPERIENCE

Tufts University, Department of Computer Science

Teaching Assistant for Data Structures and Intro CS

Jan 2023 – Present

- Lead weekly lab to explain concepts and implementations of data structures from lectures
- Host two weekly office hours to help students debug errors and develop design plans for projects
- Develop and utilize automatic grading software in Python to assess functional correctness for 300 students

Tufts University, Department of Physics and Astronomy

Learning Assistant for Intro Physics

Jan 2023 – May 2023

- Lead discussion sessions in a 90 students class, encourage active participation and critical thinking
- Hold after-class recitations and office hours, review the lectures, and answer students' questions
- Develop pedagogy, communication, and time-management skills

PROJECTS

Personal Website | HTML, CSS, JavaScript

- Design and develop a responsive multi-page website that functions across multiple devices, including laptops, phones, and tablets
- Implement interactive features such as draggable image slider, navigation menu, and hover effects

N-Body Particle Simulation | Python

- Simulate the movement of an arbitrary number of particles (the N bodies) through space and time in 2 dimensions
- Plot the positions of the particles and make a video to help with visualization

Gerp | C++

- Design and implement a program that can search through all the files in a directory and look for a sequence of character, which behaves similarly to the unix grep program
- Deal with large data set that has 200MB of size, 2000+ of files, and 3000+ directories, and indexing that under 30 seconds and 3GB usage of RAM

RPN(Reverse Polish Notation) Calculator | C++

- Implement a calculator that can perform basic arithmetic calculations as well as Fibonacci sequence, factorial, and comparisons
- Make a simple interface so that the user can enter numbers and operators easily

SKILLS

Programming Languages: C++, Python, C, JavaScript, ROS

Developer Tools: HTML, CSS, VS Code, LaTeX, GitHub, Jupyter Notebook, Google Colaboratory

Languages: Mandarin, English