

# YIXIN “ELLA” GUO

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🌐 [Linkedin Profile](#)

🌐 [Personal Website](#)

## EDUCATION

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### 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

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### 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

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### 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

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

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

**Languages:** Mandarin, English