

Jessica Liu

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EDUCATION

Georgia Institute of Technology

Atlanta, GA

Bachelor of Science in Computer Science + Mathematics, GPA: 4.00/4.00

Aug. 2023 – May 2027

- Relevant Coursework: Data Structures & Algorithms, Design & Analysis of Algorithms, Object-Oriented Design & Analysis, Computer Architecture, Networking, Artificial Intelligence, Linear Algebra, Combinatorics, Graph Theory, Probability Theory, Abstract Algebra

EXPERIENCE

Software Engineering Intern

May 2025 – Aug. 2025

Niantic Spatial

Bellevue, WA

- Developed an algorithm to localize to large contiguous area maps using Wi-Fi fingerprinting.

Undergraduate Teaching Assistant

Jan. 2024 – Present

College of Computing – Georgia Institute of Technology

Atlanta, GA

CS 3510 – Design & Analysis of Algorithms

Aug. 2025 – Present

- Teach advanced topics in algorithms (graph algorithms, dynamic programming, complexity theory); host office hours for classes of 600+ students.

CS 2110 – Computer Organization & Programming

Jan. 2025 – May 2025

- Lead weekly labs to teach fundamental concepts in computer architecture, assembly programming, C programming, and memory management; hosted office hours for 800+ students.

CS 1331 – Object-Oriented Programming | Recitation Lead

Jan. 2024 – Dec. 2024

- Developed original teaching strategies, materials, and exercises for continued use in future semesters by 30+ TAs across 12 recitation sections attended by 800+ students; teach weekly recitations; host 6+ office hours per week.

Software Engineering Intern

June 2022 – Aug. 2022

Alpha Models, Inc.

Alpharetta, GA

- Devised an algorithmic C++ approach to the Traveling Salesman Problem to plan freight railroad maintenance; developed Java simulations to model railroad yard operations and optimize carrier labor and fuel expenses.

PROJECTS

Breadboard Bakery | Python, OpenCV, Flask, React

Oct. 2024

- Built a web application to streamline debugging electronic circuit prototypes by generating schematic diagrams from photographs of breadboards.
- Implemented image processing techniques using OpenCV for contour, grid, and edge detection to identify electronic components, including wires and integrated circuits.
- Developed a custom graph data structure to model circuits from computer vision data, and designed a modified depth-first search algorithm to convert data into Boolean logic expressions.

TECHNICAL SKILLS

Languages: Java, C, C++, Python, C#, SQL, Assembly, JavaScript, TypeScript, HTML/CSS

Technologies: Git, Unity, MySQL, Firebase, MATLAB, Mathematica, Tableau, Android Studio, Docker

Libraries: pandas, NumPy, Matplotlib, PyTorch, TensorFlow, Jupyter

LEADERSHIP & COMMUNITY INVOLVEMENT

Machine Shop Master Peer Instructor

Aug. 2025 – Present

The Hive Interdisciplinary Makerspace – Georgia Institute of Technology

Atlanta, GA

- Supervise and improve safety and efficiency of machine shop; train peer instructors on wood- & metal-working machinery; design instructional materials and project blueprints; lead workshops to develop woodworking skills.