Jessica Liu

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EDUCATION

Georgia Institute of Technology — Atlanta, GA
Bachelor of Science in Computer Science, GPA: 4.00/4.00 — *Aug. 2023 – May 2027*

Georgia Institute of Technology — Atlanta, GA
Bachelor of Science in Mathematics, GPA: 4.00/4.00 — *Aug. 2023 – May 2027*

EXPERIENCE

Software Engineering Intern — May 2025 – Aug. 2025
Niantic Spatial — *Bellevue, WA*
- Niantic Augmented Reality SDK for Unity

Undergraduate Teaching Assistant — Jan. 2024 – Present
College of Computing – Georgia Institute of Technology — *Atlanta, GA*

CS 2110 – Computer Organization & Programming — Jan. 2025 – Present
- Lead weekly labs to teach fundamental concepts in computer architecture, assembly programming, C programming, and memory management; hosted office hours for 800+ students; designed and graded assignments/assessments.

CS 1331 – Object-Oriented Programming | Recitation Lead — Jan. 2024 – Dec. 2024
- Developed original teaching strategies, materials, and exercises used in recitations for continued use across future semesters; trained 30+ TAs to lead 12 recitation sections for 800+ students.
- Teach weekly 50-student recitations, held 6+ office hours per week, graded homework and exams, monitored course discussion forum, designed and tested programming assignments and exams.

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.

Lead Teaching Assistant | AP Computer Science — Aug. 2020 – May 2023
Pennsylvania AP Online — *Kittanning, PA (remote)*
- Initiated and hosted daily virtual office hours; led monthly review sessions for 70+ students with original teaching materials and exercises; trained new TAs and directed a team of 20+ TAs.

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, SQL, Assembly, LaTeX, JavaScript, TypeScript, HTML, CSS
Developer Tools:	Git, GitHub, Docker, VS Code, Visual Studio, IntelliJ, Linux, MySQL, Firebase, MATLAB, Mathematica, Tableau, JUnit, Agile
Computer Science:	data structures, algorithms, object-oriented design, data analysis, computer architecture, networking, artificial intelligence
Mathematics:	linear algebra, combinatorics, graph theory, probability theory, abstract algebra

LEADERSHIP & COMMUNITY INVOLVEMENT

Machine Shop Master Peer Instructor — May 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.