Mirabelle Feng

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Education

Carnegie Mellon University Pittsburgh, PA
Bachelor of Computer Science and Arts *Aug 2025 – May 2029*

Experience

Computer Science Teaching Assistant, 15-122 Dec 2025 – Present
Carnegie Mellon University *Pittsburgh, PA*

- Selected to TA for *Principles of Imperative Computation*, a core CS course on safe and correct programming
- Lead weekly recitations and office hours to review and clarify course concepts
- Debug student code and translating complex logic into accessible explanations
- Provide high-volume technical support to resolve implementation issues, ensuring student mastery of rigorous curriculum standards

ScottyLabs Software Developer Aug 2025 – Present
Carnegie Mellon University *Pittsburgh, PA*

- Architect and implement frontend infrastructure for a campus-wide social app using React.js and Tailwind CSS
- Develop modular, reusable components to enable rapid prototyping and seamless feature iteration
- Collaborate with designers in Figma to implement responsive UI changes, improving user experience and iteration speed

Undergraduate Researcher (PRISM Lab) Nov 2025 – Present
Carnegie Mellon University *Pittsburgh, PA*

- Developing FELIX, an autonomous reasoning system using symbolic AI and formal verification to optimize DNA cloning
- Formalizing wet-lab protocols in Lean 4 to enable mathematically verified, automated experimental planning
- Building closed-loop feedback pipelines to achieve zero-shot generalization on novel biological designs, improving experimental reliability

Projects

plantastic (TartanHacks) | *JavaScript, HTML/CSS, Canvas API, Chrome Extensions API* Feb 2026

- Developed a Chrome new-tab extension integrating task management with procedural tree growth visualization
- Implemented L-system–based fractal generation to render dynamic tree structures using the HTML5 Canvas API
- Designed event-driven state updates linking task completion to incremental graphical expansion
- Implemented asynchronous client-side persistence using the Chrome Extensions Storage API

Snooks & Ladders | *JavaScript, Algorithms, Data Structures* Feb 2026

- Built a constraint satisfaction solver implementing entropy-driven Wave Function Collapse
- Developed BFS-based propagation system to maintain adjacency consistency across a 2D grid
- Modeled directional compatibility rules using custom tile adjacency mappings
- Integrated weighted randomness to guide probabilistic state resolution

Technical Skills

Programming Languages: C, Python, SML, Java, JavaScript
Graphics & Web: HTML/CSS, p5.js
Developer Tools: Git, VS Code
Design & Creative Tools: Adobe Creative Suite, Blender, Figma **Professional:** Agile/Scrum, Product Delivery, Technical Communication, Unit Testing