Freda Shi

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EDUCATION

University of Utah | Salt Lake City, UT   **Aug. 2022 - May 2026**

Honors B.S. in Computer Science, B.S in Applied Mathematics - **GPA: 3.99**

- **Courses:** Algorithms, Computer Systems, Foundations of Data Analysis, Computer Networks, Computer Graphics, Interactive Computer Graphics, Computational Geometry, Real Analysis I and II
- **Awards:** Recipient of the **Eccles Distinguished Scholarship** (Highly competitive full-ride merit scholarship)

TECHNICAL SKILLS

Languages (ordered by proficiency): Go, Rust, Javascript/HTML/CSS, Typescript, C++, Java, C#, Python, R, Julia
Tools/Frameworks/Libraries: Git, Docker, VirtualBox, Visual Studio, VS Code, JetBrains IDEs, React, FreeGLUT

WORK EXPERIENCE

Smarty | Orem, UT

Software Engineer   **Jan. 2026 - Present**

- Software engineer on the products engineering team working on API development.

Software Engineer Intern   **Jan. 2025 - Aug. 2025**

- Built a fast and fault-tolerant address parser for the US Street API, enabling results to be returned for incomplete or invalid address inputs.
- Collaborated with fellow interns on developing a custom diff viewer, utilized by most of the product engineering team to significantly speed up manual testing.
- Automated the monthly processing of Netherlands address data, parsing 10GB of XML data into a database.

Kahlert School of Computing - University of Utah | Salt Lake City, UT

Teaching Assistant   **Jan. 2024 - Dec. 2025**

- **Courses:** <u>Computer Systems</u> (Fall 2025), <u>Software Practice I</u> (Fall 2024), <u>Eng. Prob. and Stats</u> (Spring 2023)
- Helped 200+ students improve as developers by providing detailed feedback on their submissions, emphasizing code readability, efficiency, documentation, and testing.
- Led weekly labs of around 25 students, introducing them to new developer tools like VS, Git, and gdb.
- Helped students debug coding projects including: a networking library, a multiplayer Snake.io-like game, a memory allocator, and a tiny shell program.

Theory in Practice Research Group - University of Utah | Salt Lake City, UT

Undergraduate Researcher   **Aug. 2024 - Dec. 2025**

- Coauthored the graph algorithms paper: [Fast algorithms to improve fair information Access in Networks](#).
- Proved the NP-hardness and W[2]-hardness of a new minimax graph problem via a parameterized reduction.
- Ran graph modification algorithms on high-performance computing systems on graphs with >1 million nodes.

TECHNICAL PROJECTS

Pingosaurus - Network Traffic Generator Manager | *Sponsored by L3Harris Technologies*   **Aug. 2025**

- For my senior capstone project, I am currently working with four other classmates to develop a middleware application for network traffic generators to be used by software engineers at L3Harris for networking testing.

Bookkeeping - Web app for discovering, tracking, and reviewing books | *Personal Project*   **Jul. 2024**

- Features: Store catalogue and user data securely on Firebase, integrated Google Gemini API to deliver personalized book recommendations, utilized D3.js to visualization book statistics data.