

CHARLOTTE LARSON FREEMAN

Bellingham, WA | Looking to relocate

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Software Engineer (New Grad, March 2026) with experience building production-grade image processing tools and collaborating on real-world systems. Seeking an early-career role focused on writing maintainable production code, learning team-based development practices, and contributing to ethical, user-centered products.

Education

Western Washington University, Bellingham, WA

Bachelor of Science: Computer Science, expected graduation March 2026

Technical Skills

Languages: Java, Python, C, SQL, JavaScript

Tools: Git, Bash, OpenCV, ImageJ, IntelliJ, VS Code, LaTeX

Core Competencies: Image processing, production code practices, modular software design, human-centered design, data visualization

Technical Experience

Research and Development Intern (Software Development), June 2025 - Present

Silfab Solar Inc., Burlington, WA

- Independently developed image processing software to analyze alignment on Metal Wrap Through solar cells, achieving 0–3 pixel accuracy on 16K images
- Designed and implemented centroid detection algorithms for solar cell geometries under manufacturing and imaging constraints
- Built visual analysis outputs (heatmaps, vector overlays) to support engineering analysis and interpretation
- Maintained internal Git repository with clear documentation, version control, and reproducible workflows
- Leveraged AI-assisted development tools (Claude, Cursor) to accelerate prototyping, while retaining full responsibility for QA, optimization, and correctness

Undergraduate Researcher, January 2025 - December 2025

Western Washington University College of Science and Engineering, Bellingham, WA

- Designed, tested prompts, and analyzed LLM outputs for fairness and accessibility
- Co-developed a coding schema for annotating academic literature and testing LLM behavior for bias
- Researched ethical implications of AI and ableism in LLMs

Projects

16-Bit Compiler:

- Implemented a 16-bit microprocessor simulation in C based on provided specifications, including memory management, instruction set behavior, and trap handling
- Gained hands-on experience with system architecture and low-level data flow
- Successfully completed this challenging assignment as a pre-major, while many peers did not, demonstrating persistence and problem-solving under pressure

Quaternion Rotation & Interpolation Demo ([Live Demo](#)):

- Collaborated with a graduate and undergraduate teammate to design an interactive educational tool visualizing 3D quaternion-based rotations
- Implemented core UI features including keyboard shortcuts and object transformations
- Built animated scenes (sphere, cube, pyramid) and visualized gimbal lock behavior
- Contributed to user-facing design with scene descriptions and interactive elements for user learning

Stock Market Portfolio Trading Strategy:

- Simulated stock trading strategy using SQL and Java based on historical price data
- Structured and analyzed closing price trends for investment insights
- Designed and documented trade logic with reusable software components
- Developed application structure using modular Java methods, mirroring production-grade analytics patterns

Other Experience

Student Ambassador, September 2024 - Present

Western Washington University, Bellingham, WA

- Encouraged and advised peers on academics and student life
- Fostered connections between the university, students, and stakeholders
- Collaborated on events to support underrepresented students and promote engagement across campus

Manager / Summer Camp Director / Teacher, December 2022 - September 2024

Bellingham + Skagit Coding and Robotics Club, Bellingham, WA

- Developed and delivered curriculum in JavaScript, Scratch, and GameMaker; taught programming and robotics to 100+ K–8 students
- Supervised 20+ junior staff and resolved behavior and technical challenges
- Led planning of education-based programs, promoting innovation and student engagement
- Introduced coding documentation processes, streamlining curriculum delivery

Au Pair, August 2019 - March 2020

Au Pair World, Karlsruhe, Germany

- Provided childcare and Montessori activities in a cross-cultural family setting
- Managed transportation, meal prep, and household tasks
- Engaged in cultural and language exchange

Fun Facts

- Speaks some Spanish (aspiring fluent speaker) and “holiday” German (only a few basics)
- Takes latin dance classes in spare time (salsa, bachata, cha-cha)
- Fascinated by the intersection of science and food, especially fermented foods like sourdough and yogurt
- Avid reader of contemporary reimaginings of mythologies