Shannon Jade Liu

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Software engineer with experience in full-stack development, machine learning, security, and cloud infrastructure, eager to expand, apply, and adapt versatile skills across diverse fields, new domains, and emerging technologies.

EDUCATION

Cornell University, College of Engineering — Ithaca, NY

Bachelor of Science in Computer Science — *Expected May 2027*

- Relevant Coursework: Algorithms, Data Structures, Computer System Organization and Programming, Object-Oriented Programming, Functional Programming, Machine Learning, Data Science, Discrete Structures

WORK EXPERIENCE

Cybersecurity Engineering Intern, Security Automation and Analytics Team — *June 2025–August 2025*

FactSet Research Systems Inc. — Norwalk, CT

- Built scalable cloud-native solutions and enhanced infrastructure by developing secure code and GraphQL APIs with role based access control using JavaScript, GraphQL, and Azure to provide system risk, asset, remediation, and vulnerability data from a PostgreSQL database; used by 11 business units and 30+ departments
- Engineered MCP tools and a server with Python and Anthropic Claude, enabling 40+ teams to interactively query and identify vulnerabilities in owned assets, view key details, and receive guided resolutions via LLM-driven support
- Enhanced threat visibility for security teams by deploying a threat intelligence platform on AWS EKS, Kubernetes, Helm, and CI/CD pipelines, and configuring 10+ APIs to automate threat data collection

Software Engineer, Imaging Systems Software Team — *October 2023–Present*

Cornell University Unmanned Air Systems (CUAir) — Ithaca, NY

- Designed, built, and tested the "Plane System," a Python and Rust application on Raspberry Pi for GoPro image capture, camera control, and real-time telemetry transmission; used on an autonomous aircraft by 60+ engineers in search and rescue missions
- Developed a full-stack Java and React application to analyze flight data by integrating telemetry, imagery, and user input via APIs; led 10+ system tests to identify and resolve communication issues

Machine Learning Undergraduate Researcher, Interaction Research Lab — *June 2024–Present*

Cornell Tech — New York, NY

- Led research on the Bystander Affect Detection (BAD) Robots project, studying human responses to repeated robot failures to improve communication, develop repair strategies, and advance adaptive robotics in shared spaces
- Analyzed visual, audio, and motion data from 30+ human-robot interaction videos featuring successive robot failures; extracted 66 features across 28K+ data points using Python and open-source libraries
- Built, trained, and evaluated multimodal time-series models (neural networks, transformers, classifiers) using TensorFlow and PyTorch with data fusion techniques; achieved 93% accuracy in detecting successive robot errors
- Published a peer-reviewed paper as the first author titled *"I'm Done": Describing Human Reactions to Successive Robot Failure*, and presented at the 20th IEEE/ACM International Conference on Human-Robot Interaction (HRI)

Academic Excellence Workshop (AEW) Facilitator — *August 2024–Present*

Cornell University — Ithaca, NY

- Led 3 supplemental workshops for CS 2110 (Object-Oriented Programming and Data Structures) and MATH 1920 (Multivariable Calculus for Engineers), reaching 40+ engineering students
- Delivered short lectures and facilitated collaborative student learning to deepen understanding of core technical concepts, reinforce course material, and foster academic community by creating problem set worksheets and interactive activities

Software Engineer Intern — *July 2022*

Trillium Trading, LLC — New York, NY

- Built 6 Java-based trading simulators to enable risk-free testing for trading servers used by 100+ traders
- Implemented multithreading and APIs in simulators to handle stock quotes, borrow requests, and locate management

SKILLS

- Programming Languages: Python, Java, C++, C, Rust, JavaScript, TypeScript, HTML, CSS, SQL, GraphQL
- Frameworks / Libraries: Node.js, React.js, Spring, TensorFlow, PyTorch, Model Context Protocol, NumPy, Pandas, Matplotlib
- Tools & Technology: Git, PostgreSQL, Docker, Kubernetes, Helm, GitHub Actions, AWS, Azure, Jira, Agile Scrum

ADDITIONAL PROJECTS

Real-Time Driving Assistant (C++) — *In Progress*

- Developing a system that uses dashcam video to detect lanes, monitor surrounding vehicles, and provide real-time driver assistance cues using OpenCV

DadsKitchen (Java, Node.js, React, JavaScript, HTML, CSS, PostgreSQL)

- Created a full-stack application to help users manage and update recipes and ingredients, and interact with a community of chefs and eaters through recipe creation, imaginary dish creation, ratings, and reviews

FindMyFood (OCaml, SQL) (CS 3110 Functional Programming Final Project)

- Developed an application in a team of 4 to allow students to search and rate on-campus dining halls and eateries

PUBLICATIONS

- **Shannon Liu**, Maria Teresa Parreira, and Wendy Ju. 2025. 'I'm Done': Describing Human Reactions to Successive Robot Failure. In Proceedings of the 2025 ACM/IEEE International Conference on Human-Robot Interaction (HRI '25). IEEE Press, 1458–1462.

PRESENTATIONS

- Do Robots Know When They Keep Failing? Training Models to Detect Successive Robot Errors from Human Reactions
  Presenting at the Northeast Robotics Colloquium (NERC ‘25) on October 11, 2025
- Recognizing Human Response to Witnessing Robot Error
  Presented at the Cornell University Spring 2025 Undergraduate Research Poster Session on April 21, 2025
- “I’m Done”: Describing Human Reactions to Successive Robot Failure
  Presented at the ACM/IEEE International Conference on Human-Robot Interaction (HRI ‘25) on March 5, 2025

MEMBERSHIPS

- Association for Computing Machinery Special Interest Group on Computer-Human Interaction (ACM SIGCHI) 2025
- Institute of Electrical and Electronics Engineers (IEEE) 2025
- Women In Computing At Cornell 2023
- Association of Computer Science Undergraduates 2023