

# Ruoxi (Catherine) Wu

[catherinewu0508@gmail.com](mailto:catherinewu0508@gmail.com) • 647-836-7849 • [linkedin.com/in/ruoxi-catherine-wu](https://linkedin.com/in/ruoxi-catherine-wu) • [github.com/catherineruoxiwu](https://github.com/catherineruoxiwu)

## Education

### University of Waterloo | Bachelor of Computer Science

September 2020 - April 2025

- Honours Co-op Program; Graduated with Distinction; Recipient of President's Scholarship of Distinction, President's Research Award, and President's International Experience Award
- Relevant Coursework
  - **Discrete Mathematics:** Logic and Computation (SE212), Combinatorics (MATH239)
  - **Programming Fundamentals:** Programming Principles (CS137), Data Abstraction and Implementation (CS138)
  - **Data structures:** Data Structures and Data Management (CS240)
  - **Algorithms and Complexity:** Algorithms (CS341)
  - **Computer Organization and Architecture:** Digital Computers (ECE222)
  - **Principles of Computer Systems:** Operating Systems (SE350), Computer Networks (CS456)
  - **Additional Computer Science Coursework:** Data-Intensive Distributed Computing (CS451), Introduction to Artificial Intelligence (CS486), Numerical Computation (CS370), User Interfaces (CS349), Human-Computer Interaction (CS449)

## Technical Skills

### Programming Languages

C, C++, Ruby, Java, JavaScript/TypeScript, Go, Kotlin, Python, Assembly

### Frameworks and Tools

Bash, Git, MongoDB, SQL, Node.js, React.js, Vue.js, Express.js, Django, AWS

## Work Experience

### Microsoft | Windows + Devices

September 2025 - Present

Software Engineer

Vancouver, British Columbia, Canada

- Improved runtime performance and responsiveness in the software by fixing bugs and optimizing **XAML templates** and **C++ implementations** across UI and core logic paths.
- Delivered accessibility enhancements for **tooltips**, **narrator**, and **keyboard navigation**, improving usability for keyboard and assistive-technology users.
- Analyzed crash reports and reliability issues, and addressed customer feedback signals through prioritization and fixes.
- Contributing to new feature development and system improvements in Windows File Explorer (**details under NDA**).

### Microsoft | Windows + Devices

May 2024 - July 2024 & May 2023 - August 2023

Software Engineer Intern

Redmond, Washington, US

- Contributed to the design and implemented multiple **home page widgets** in Settings, with **2 features selected and fully rolled out** to retail Windows machines, contributing to improved user engagement.
- Prototyped a new search result UI in File Explorer to surface richer file metadata, coding the frontend logic with **C++ & C#** and following the **MVVM design pattern** to ensure maintainability and separation of concerns.

### StackAdapt | Billing Platform

January 2024 - April 2024

Fullstack Engineer Intern

Toronto, Ontario, Canada

- Enhanced the Billing Platform for both client and account admin interfaces by developing **Ruby on Rails** backend solutions with fintech services such as **Stripe**, **Sage Intacct**, and **HighRadius**.
- Executed a data migration and backfill for **over 1 million invoices**, optimizing the backend **GraphQL** query and updating the frontend using **React.js** and **Redux** to implement an advanced invoice filtering feature tailored for net term customers.
- To optimize engineering workflows, updated the database's automation process using **Shell scripts** to sanitize client information and expanded the database snapshot tool with **Ruby** by integrating billing-related tables.

### Morgan Stanley | Wealth Management Technology

September 2022 - December 2022

Technology Analyst Intern

Calgary, Alberta, Canada

- Worked with a large-scale equity management software with **Java Enterprise Edition** and **Oracle SQL Database**.
- Conducted **integration tests in Java** and utilized **agile scrum methods** to deliver high-quality code commits.

### eBay | Engineering Ecosystem & Experience

December 2021 – March 2022

Software Engineer Intern

Shanghai, China

- Implemented an open-source directed acyclic graph visualization library with **TypeScript**. The library has been used in 3 **internal projects** and **has shortened more than 70%** of the code for rendering flow charts and tree-structured graphs. 
- Led the development of a new CD pipeline editor frontend in **eBay cloud console** supporting advanced features such as adding parallel tasks and node drag and drop with **React.js** and **Redux**.

## Hokdo (MiraclePlus F21) | MVP Engineering

Fullstack Engineer Intern

October 2021 – November 2021

Remote

- Coded two web pages in a full stack customer relationship management application **showcased to 1000+ potential investors** on MiraclePlus Demo Day with **Vue.js** (frontend) and **Express.js** (RESTful API server).
- Built, deployed, and continuously maintained a **responsive server-side rendering** official website displaying product highlights and providing a chat widget using **React.js**, **Amazon EC2**, and **Nginx**. 

## Xiaomi Technology

Android Engineer Intern | MIUI Mobile Operating System

May 2021 – August 2021

Nanjing, Jiangsu, China

- Developed **3 new features** (a new page for front-camera-related settings, toggle logic improvement, and refresh rate settings improvement), which have been shipped to approximately **80 million users globally**.
- Resolved over 50 native Android issues in Xiaomi mobile system apps, including functionality across searching, accessibility, layouts, and stability, and significantly reducing Android Monkey crashes and Application Not Responding errors.

## Research Experience

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### Berkeley Function-Calling Leaderboard | LLM Benchmark @ Sky Computing Lab

May 2025 - June 2025

Open-Source Contributor & Co-author of BFCL v4

Remote

- **Integrated latest LLMs** into the benchmark, supporting both **API-based** and **locally hosted models**, and enabling consistent evaluation across diverse model backends. Further improved readability and maintainability of the research codebase through bug fixes and code refactoring. 
- Designed and implemented **26 prompt variation configurations** by parameterizing key dimensions such as return syntax, function documentation formats, tool tags, prompt presentation styles, and instruction wordings in prompt, enabling precise analysis of model performance sensitivity to input formats. 

### VRGimbal | WebXR Research Project @ WVisdom Lab

October 2023 - March 2024

Undergraduate Research Assistant

Waterloo, Ontario, Canada

- Engineered a 1-to-many VR streaming platform that allows the presenter to capture 2D streams from different camera placements, angles, and movements, leveraging technologies such as **WebRTC (Peer.js)**, **Three.js**, and **Firebase RealTime Database** for immersive real-time interactions.

## Side Projects

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### Hana Korean | AI-Powered Language Learning Platform

Febrary 2026 - Present

- Vibe-coded an AI-assisted Korean vocabulary learning **React.js** app in **Google AI studio**, leveraging **Gemini 2.5 Flash API** for **multi-modal language interaction**, integrating text-to-speech, speech-to-text, and handwriting recognition to support self-directed learning.

### KTV @ Home | AI-Integrated Media Processing Solution

May 2025

- Designed a fullstack web system combining a **Next.js** frontend for audio playback and lyrics UI, and a **Python FastAPI** backend AI vocal-removal pipeline (music source separation) to successfully host an at-home karaoke event.

### KWCSSA Voting System | Fullstack Application for Live Events

October 2022

- Architected and deployed a scalable **MERN**-stack application with **Amazon ECS** and **Amplify** and supported concurrent **200+** audience voting for their favourite performances in a student-hosted talent show.