Amber (Jiale) Wang

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TECHNICAL SKILLS

Languages: Python, Java, JavaScript, TypeScript, HTML/CSS, Go, C/C++, SQL, PHP, Kotlin, MATLAB, R
Frameworks: React, React Native, Node.js, Express.js, Tailwind, TensorFlow, LangChain, Scikit-learn
Tools and Platforms: Unix, AWS, Azure, Selenium, MySQL, MongoDB, Mongoose, Git, Postman, Power Automate

EDUCATION

University of Waterloo — Waterloo, Ontario
Master of Mathematics in Computer Science; Advisor: Pengyu Nies; GPA: 97/100 — *Sept 2024 – Dec 2026*

- Research Interests: Leveraging machine learning to improve software engineering, focusing on testing automation, code analysis using natural language processing, and data-driven development optimization.

Queen's University — Kingston, Ontario
Bachelor of Computing, Mathematics and Analytics; GPA: 4.0/4.3 — *Sept 2019 – Apr 2024*

- Relevant Coursework: Algorithms, Data Structures, Software Architecture, Database Management, Computer Architecture, Operating Systems, Formal Methods in Software Eng, Statistics and Probability.

PUBLICATIONS

- **Jiale Amber Wang**, Kaiyuan Wang, and Pengyu Nie. Efficient Incremental Code Coverage Analysis for Regression Test Suites. In International Conference on Automated Software Engineering (ASE). 2024.

- Jerin Yasmin, **Jiale Amber Wang**, Yuan Tian, Bram Adams. An Empirical Study of Developers' Challenges in Implementing Workflows as Code: A Case Study on Apache Airflow. Journal of Systems and Software. 2024.

WORK EXPERIENCE

Machine Learning Developer — Toronto, ON
Royal Bank of Canada — *May 2025 - Current*

- Built and iterated on Generative AI prototypes using **Python**, **JavaScript**, and vector databases.
- Researched and tested **LLM** tools to recommend solutions for internal use cases.
- Contributed to Agile sprints by coding, testing, and deploying **ML workflows** and features.

Research Assistant — Waterloo, ON
University of Waterloo — *Jan 2024 - Current*

- Participated in writing a paper titled "Maintaining test cases using large language models", demonstrating the potential of **large language models** to revolutionize test case maintenance in Java.
- Developed Python scripts to efficiently collect and preprocess code-test updates from GitHub repositories, showcasing strong **data engineering** skills.
- Implemented advanced **machine learning techniques**, including fine-tuning and multi-round refinement, to create a practical solution for automated test case updates, contributing to the software development community.

Automation Engineer — Ottawa, ON
Ericsson Canada Inc. — *Sept 2022 - Dec 2023*

- Created, developed, and maintained 10+ automated workflows using **Power Automate**, **Azure**, and **Python**. Generated 20+ error-free dashboards daily across departments, resulting in a **90% reduction** in manual processes. Conducted testing, debugging, and troubleshooting to ensure the consistent and accurate performance of all tools.
- Developed and implemented an automated email server that streamlined the license request process for an internal software tool, serving 400+ users.
- Developed an innovative web app using **JavaScript**, **CSS**, and **React.js**, featuring a cause-and-effect chain builder. Empowered users to visualize key drivers and outcomes in a chain diagram for problem-solving purposes

Teaching Assistant — Kingston, ON
Queen's University — *Sept 2021 - Aug 2023*

- Instructed 200+ students on Data Structure, Introduction to Computer Science II, and Discrete Mathematics for Computing I; Covering data structures, algorithms, object-oriented software development, and proof methods.

- Assessed student performance in assignments, quizzes, and exams, successfully addressing 200+ coding errors in **Python** and **Java** programs and providing feedback for improvement.
- Responded to inquiry emails and course discussion forums frequently, improving students' conceptual understanding of course materials.

Advertising Data Analyst   Beijing, China
Xiaomi Technology Co.   *May 2021 – Aug 2021*

- Created and managed ad campaigns for Chinese overseas customers, offline customers, and agencies; Regularly promoted and monitored advertisements; Output daily/monthly reports and seasonal reviews.
- Assembled and analyzed promotion data with **SQL**; Optimized promotion by setting tiered pricing, customizing targets, etc., conversion of optimized campaigns increased **2-3** times.
- Responded to customers' inquiries, and provided promotion advice, the favorable rate is **100%**.

PROJECT EXPERIENCE

Software Developer, InQubate   *Sept 2023 - Apr 2024*

- Developed an **AI**-based language learning mobile application using **Type Script** and **React Native** that aims to improve users' pronunciation correctness and speech confidence.
- Integrated **OpenAI API** and **Azure Speech Services API** to create a voice-enabled chatbot and provide real-time feedback on user's pronunciation and sentence structure.
- Collaborated with business analysts and conducted pitches at various venture events to showcase the application's capabilities and potential impact, demonstrating strong collaboration and communication skills.

Tour Booking Web App   *May 2023 - Aug 2023*

- Developed a fully functional tours booking web application using **Node.js**, **Express.js**, **MongoDB**, and **Mongoose** for back-end, **HTML**, **CSS**, and **Pug** for front-end.
- Ensured top-tier security with bcrypt password encryption and **JWT**-based user authentication, providing different database management permissions based on user roles.
- Handled seamlessly payments through **Stripe.js** library and extended user sessions via secure cookie transmission.

- Deployed Node.js applications to production using **Heroku**, ensuring scalability and availability.

Borealis AI Undergraduate Mentorship Program   *Oct 2021 - Jan 2022*

- Used a dataset containing 500 redditors' posts with 5-label depression classification from subreddit r/depression to forecast depression level and risk of suicide through analyzing texts from a person.
- Employed **natural language processing** techniques, such as tokenization, stop word removal, lemmatization, and stemming, along with **Python** libraries like **NLTK** and **Scikit-learn**.
- Built and trained four **machine learning models**, outperformed existing published works in depression classification.

WeChat Mini-Program   *Sept 2020 - Jan 2021*

- Developed a WeChat mini program platform that provides learning and life information for college students in North America; Successfully gained over **200 active users** since its release.
- Implemented features such as post categorization, menu bar, and search functionality using **JavaScript**, **CSS**, and **HTML**; Utilized **MongoDB** as the database for storing and managing application data.