

# Jocelyn Xu

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## EDUCATION

**University of Waterloo (UW)** Sept 2024 – Apr 2029  
*Computer Science, Honours, Co-op Program* Waterloo, ON

- CAV: 95.3

## EXPERIENCE

**Bank of Montreal (BMO) Software Developer** | *Online Banking for Business* May 2025 – Dec 2025  
*Help Center AI Chatbot* AWS Lambda, Bedrock, DynamoDB, API Gateway, S3

- Architected a **serverless RAG chatbot** using **AWS Lambda** and **Amazon Bedrock**, implementing **WebSockets** for real-time response streaming to drive a **30%** increase in internal company queries
- Engineered a **multi-agent routing** system using a **supervisor-collaborator** architecture to classify query intent and execution, increasing response accuracy and reducing latency by **35%** through optimized **agent selection**
- Eliminated **20+ hours** of monthly manual data entry by engineering an **automated pipeline** with **Puppeteer** to scrape and index **125+** Online Banking documents into **S3 buckets**

*Lexicon Design System (LDS)* Angular, TypeScript, Storybook, Figma

- Scaled **LDS** adoption to **300+ developers** by developing **15+ framework-agnostic web components** to replace legacy Angular components, ensuring universal **WCAG 2.2 AA** compliance across all platforms
- Improved **code coverage** to **80+%** by automating **250+ Jest and Playwright** tests to resolve **360+ bugs**, yielding **\$200K+** in savings through the elimination of manual QA
- Streamlined delivery for **BMO products** serving **60,000+** clients by orchestrating **bi-weekly releases** with **semantic versioning** and publishing bundled builds to **JFrog Artifactory** as internal NPM packages

**UW Data Science Club (UWDSC)** | *VP Development, Developer, Hackathon Organizer* Dec 2024 – Present

- Led the development of a **full-stack website** for an **AI hackathon** serving **1,000+** users, integrating **QR code and NFC check-in** to reduce average processing time from a **manual 1 minute** process to **under 5 seconds**
- Automated infrastructure for development teams by engineering **GitHub Actions CI/CD workflows** with **Infisical secrets management** and **Discord webhooks**, reducing manual project management overhead from **5+ minutes to seconds** via automated deployment previews and issue tracking
- Refactored backend to a **Controller-Service-Repository** architecture during a **MongoDB to Supabase migration**, implementing **relational schemas** and **Row-Level Security** to boost **data integrity** and query efficiency by **40%**

## PROJECTS

**Fashionkilla** | *React, Tailwind, MongoDB, FastAPI, LLM, Sentence Transformers* Oct 2025

- Engineered an AI fashion recommendation engine using **Sentence Transformers** for **vector embeddings**, implementing **cosine similarity** for **semantic retrieval** and **FastAPI** for **CRUD operations**
- Architected a data pipeline using **Google Gemini** for **feature extraction**, optimizing latency by caching **vector embeddings** and **image encoded data** in **MongoDB** to eliminate redundant API data calls
- Recognized with **Best Use of MongoDB** and **Best UI/UX** at TechNova 2025

**UWDSC Website** | *React, Next.js, TypeScript, Tailwind, MongoDB, Formik* May 2025 – Sept 2025

- Engineered a **full-stack club portal** with **CRUD endpoints** and **MVC architecture**, implementing **event debouncing** and **Formik/Yup validation** for data persistence and integrity for **210+** applicants
- Built a real-time check-in system using **Redux** to manage **250+ concurrent check-ins**, implementing **role-based access control** and **PATCH** operations for global state synchronization

**ResuMix** | *Python, Flask, React, Vite, NeonDB, Sentence Transformers, ReportLab* Aug 2025

- Developed a semantic similarity engine using **Sentence Transformers** and **DP algorithms**, outperforming legacy GPT-wrappers with a **30% accuracy gain** and **2000+ms reduction** in inference latency
- Implemented a **Linux shell script** to automate **unit testing**, reducing average **code review times** by **50%**
- Architected a **NeonDB PostgreSQL** backend with **connection pooling** and **batch commands** to improve query performance by **45%** while automating **dynamic PDF exports**

## SKILLS

- **Languages:** Python, C/C++, TypeScript, SQL, HTML, CSS, Java, Bash
- **Frameworks/Tools:** React, Angular, Tailwind, Flask, FastAPI, Next.js, Express.js, Three.js, AWS, PostgreSQL, Docker, Postman, Node.js, Figma