Yan Xue

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TECHNICAL SKILLS

Languages: Python, C++, C, Java, HTML/CSS, SQL, TypeScript, JavaScript, GraphQL
Technologies: Git, MySQL, Node.js, Firebase, PostgreSQL, Mongo, Tailwind Docker, Kubernetes
Frameworks & Libraries: React, Express, Next.js, Vite, Vitest, Angular, Flask, Pandas, NumPy, Scikit-learn

EDUCATION

University of Waterloo   Sep 2024 - Apr 2029
BASc in Computer Engineering, Honours, Co-op   *Waterloo, ON*
- Engineering Entrance Scholarship (**top 2.4%**); President's Scholarship of Distinction; In excellent standing

EXPERIENCE

Software Engineering Intern   Jan 2025 – Apr 2025
HongMall Canada   *Markham, ON*
- Built a Rasa chatbot by embedding, clustering, and categorizing **1.48M+ queries** with **SQL/Python**, fine-tuning training for **95% intent detection** and **response handling**, designed to support **1M+ users**
- Engineered an autonomous robot control system using **Python, React, and Flask**, integrating **15+ Robot endpoints** to support real-time navigation and stock retrieval for over **50,000+ warehouse items**
- Optimized the item checkout flow in **Angular and TypeScript** by improving UI responsiveness and refactoring product retrieval to skip unnecessary API hops

Software Developer   Sep 2024 – Apr 2025
Waterloo Rocketry   *Waterloo, ON*
- Engineered a Monte-Carlo simulation plugin in Java that iterated **10,000** launch-parameter permutations, exporting results to CSV for post-flight analysis
- Visualized simulation outputs to uncover flight behavior trends, enabling optimized release-angle selection

Automation Developer   Jan 2025 – Apr 2025
Pacific Grace Church   *Remote*
- Developed, deployed, and maintained a **Python-based** Discord bot using **Docker**, automating weekly readings and announcements for a **110+ member** community, streamlining communication by over **80%**
- Integrated **Google Sheets API** for real-time updates and hosted on **Google Cloud Run** for scalability

Software Engineering Intern   Feb 2023 – Aug 2024
Skynet Security System Ltd.   *Vancouver, BC*
- Designed and built a cross-platform invoice system with **Python, Tkinter, and ReportLab**, automating billing for **50+ clients** and reducing invoice preparation time by **75%**
- Developed a multiprocessing **Python** script for **CSV normalization**, increasing workflow speed by **40%**
- Built and maintained the company's website using **React, TypeScript, and Figma**, which contributed to **130+ clients** in 2023

PROJECTS

 ML Drug Longevity Research | *Python, Pandas, NumPy, Scikit-learn, Seaborn, Random Forest, Conformal Prediction*
- Mentored by **Dr. Michal Kosiarski** at **The Hospital for Sick Children** to apply **machine learning** in drug discovery, focusing on predicting lifespan-extending compounds using biochemical data across species
- Built an **end-to-end ML pipeline**: extracted and encoded features from **molecular structures**, **dosages**, and species-specific traits to train models that estimate longevity impact
- Built three models using **Random Forest**, **Chemprop**, and **Conformal Prediction**, with the conformal model achieving **91.3% interval coverage** and **14.22%** Mean Absolute Error despite high molecular complexity

 JobBot | *Python, TypeScript, Flask, React, TailwindCSS, HTML, Pandas, BeautifulSoup, Selenium*
- Built a full-stack **AI job assistant** that streams **Gemini-2.0-Flash** output to scrape job postings, extract structured data, and auto-export results to Excel/CSV with **95%+ capture accuracy**
- Developed an **interactive resume editor** with live **AI-powered suggestions** and inline gap analysis, enabling users to tailor resumes dynamically to job descriptions

 Comparisum - 1st Place @WatAI Open Projects 2025 | *Python, React, Flask, TypeScript, SQL, AWS*
- Acted as lead Backend Developer to create a responsive web application that processes and summarizes Amazon reviews with **real-time ASIN validation**, achieving **<3s response times**
- Integrated **Groq's LLM API** with prompting for structured summaries with a **95% parsing accuracy**