Yipeng Xin

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🐙 Github

in LinkedIn

💻 Technical Skills

Programming Languages
Proficient: Python, TypeScript / JavaScript
Intermediate: Java, Haskell, C#

Frameworks & Tools
Django, Flask, NodeJS / ExpressJS, ReactJS
NumPy, Pandas, Scrapy, Prefect
PostgreSQL, MySQL, SQLite, Redis

Others
Ubuntu / Linux OS
Docker / Podman,
Kubernetes
Azure, GCP, IBM, Alibaba Cloud

🏆 Awards

Microsoft Research AI School **Excellent Project Award** (3rd prize, 2021)

McMaster President's **Entrance Scholarship**

Certificate of Distinction in the **Canadian Computing Competition** (Junior 2017 & Senior 2018).

📇 Identity

Citizen of China

Permanent Resident (PR) of Canada

F1 Student Visa of USA

🎓 Education

University of Illinois at Urbana-Champaign (UIUC)
Champaign, IL

Aug. 2025 - Present

- **Master in Computer Science (MCS)**
- Expected graduation: **Dec. 2026**

McMaster University
Hamilton ON

Sept. 2018 - April 2023
GPA: 3.9

- **Honours Computer Science Co-op**
- Bachelor of Computer Science / Minor in Economics
- Teaching Assistant of **Algorithms and Complexity** (CS 3AC3) and **Object-Oriented Programming** (CS 2OP3)

💼 Work Experience

Backend Developer
July 2023 - July 2025
IBM Canada Software Lab, Markham, ON

- Developed backend services in **TypeScript** for **IBM Watson Assistant / Orchestrate**, enhancing a conversational AI platform for seamless chatbot deployment across channels like Slack, Facebook Messenger, and SMS. Led integration with **MS Teams** using **Azure Bot Framework**.
- Migrated microservices from **Java (Spring)** and **JavaScript** to **TypeScript** to improve maintainability, and transitioned RESTful APIs to **gRPC** to boost performance of complex chatbot interactions.
- Integrated **large language models**, such as **IBM Granite**, **Llama**, and **GPT-4**, into the next generation of the AI agent product, supporting features like agentic chat mode and function calls, with capabilities for **on-premises LLM deployment**.
- Customized the open-source **Portkey AI Gateway** to ensure support for **IBM's proprietary models and cloud environments**, enabling applications like real-time voice conversations (phone channel integration).

Extreme Blue Technical Intern
May 2022 - Sept. 2022
IBM Canada Software Lab, Markham, ON

- Worked with 3 other interns to independently develop a solution for IBM Watson Assistant to increase the user engagement rate of the product.
- Built a new feature with **Flask** and **ReactJS** that allows Assistant to generate interactive help pages based on the existing conversation flows, which can be embedded into the company's website.
- In the user tests conducted with internal and two external clients, the new feature has increased the user engagement rate by **2.5 times**. Also reduced the man power needed to maintain both the help articles and the chatbot content.

Development Intern
Sept. 2020 – Sept. 2021
Microsoft Research Asia, Beijing, China

- Analyze the huge number of incidents that emerged from the **Azure** systems and their mitigation steps, develop internal tools to automate the procedures in the life cycle of each incident, detect or even predict the outage, thereby improving the stability of the Azure infrastructures.
- Responsible for the maintenance and development of an internal tool for estimating and predicting the radius of the impact of outages. Optimized the performance of **Kusto** queries to allow it to handle the alert storm caused by major accidents, and successfully migrate the tool to the Office 365 team's incident management platform.
- Also collaborated on the development of the front-end visualization for our tools with **ReactJS**, and the design of the data monitoring and processing pipelines with **Azure Data Factory**.

🍴 Project

Starsector Chinese Forum
www.fossic.org

April 2018 - Present

- Developed and maintained a specialized online forum and officially recognized player community for an indie game **"Starsector"**, with **7k+ unique visitors per week and 60k+ registered users**
- Deeply customized an existing PHP and JS-based CMS to meet the modern security and user experience demands, including a **responsive mobile interface** for non-PC users and created service images for **Docker/Podman based deployment**.
- Use **Object Storage Services and CDN network** to optimize the website and attachments access performance

Hack the North - Memoritis
devpost.com/software/memoritis

September 2019

- A visualized web app to preserve and share valuable memories with others with similar experiences powered by NLP and machine learning, **responsible for the front-end UI design and implementation**.
- Backend implemented in Python with **Flask application server**; Google Video Intelligence APIs and word2vec were used to extract the features of uploaded videos and build the connectivity graph
- The frontend is implemented as a **single-page app (SPA)** built with **ReactJS** and bootstrap, graph visualization implemented with cytoscape.js.

Danmaku Filtering Tools for Bilibili.com
github.com/jnxyp/Bilibili-Block-List

June 2016 - Sept. 2018

- A pattern matching based Danmaku (video comments) filtering tool for Bilibili.com, a famous online video-sharing community in China
- Using **regular expressions** to match and filter vulgar words and unfriendly speeches, such as racial or geographical discrimination contents and able to merge and streamline repetitive contents with edit distance and other NLP algorithms
- **400+ stars** on GitHub, with 20+ forks