

Baichuan Zheng

+1 416-876-5129 | bczheng2016@gmail.com | linkedin.com/in/baichuan-zheng/ | github.com/bczheng666

EDUCATION

University of Waterloo

Bachelor of Computer Science

Apr. 2023

GPA 3.9/4.0

Relevant Coursework: User Interfaces, Human Computer Interaction, Algorithms and Data Structure, Operating System, Object-Oriented Software Development, Algorithm Design and Data Abstraction

TECHNICAL SKILLS

Languages & Markup: TypeScript, JavaScript, Python, C#, SQL, Kotlin, C/C++, HTML/CSS, XAML, JavaFX

Technologies/Frameworks: React, React Query, Kubernetes, Argo CD, Docker, MUI, Chart.js, Django, PostgreSQL, Qt, .NET MAUI, Ruby on Rails

Developer Tools: Git, GitHub, GCP, Jenkins, Datadog, VS Code

EXPERIENCE

Empire Life

June 2023 – Present

Full Stack Developer

Toronto, Canada

- Developed and implemented the **Paid Up Options Graph** using **React**, **Chart.js**, and **TypeScript**, improving user engagement by **25%** and reducing customer service calls by approximately **50** per month.
- Designed and launched the **Tremf Team Promotion Banner** with **React**, **MUI**, and **JavaScript**, reaching over **1,500 advisors** and driving a **30%** increase in awareness of large-case support.
- Led **Long-Term Version Retention (LTVR)** initiatives across **5 APIs** by dockerizing services and managing deployments using **Docker**, **Kubernetes**, and **Argo CD**, reducing deployment time by **30%** and enhancing version control.
- Removed the outdated **ObserverKit** library and transitioned the frontend to a modern stack with **React Query**, **MUI**, and **TypeScript**, improving page load speed by **20%** and simplifying future maintenance.
- Developed a customizable **Report Builder** feature for over **200 clients**, integrating a drag-and-drop interface using **React**, **TypeScript**, and **PostgreSQL**, leading to an **18%** boost in client satisfaction.
- Contributed to end-to-end release workflows via **GitHub Actions**, **Docker**, and **Google Cloud Platform (GCP)**, reducing post-deployment incidents by **15%**.
- Completed certifications in **LOMA 281** and **291**, dedicating weekly study time to strengthen insurance domain knowledge and improve communication with product stakeholders.
- Earned badges in **Prompt Design in Vertex AI** and **Introduction to Vertex AI Studio** (Mar 2025), exploring AI-driven enhancements for internal tooling, advisor workflows, and smart product recommendations.

Autodesk

May 2022 – Aug 2022

Software Engineer Intern, AEC Design-AutoCAD

Shanghai, China

- Migrated **90%** of the AutoCAD component from Windows Platform to Avalonia **Multiplatform UI** by using **C#** and **XAML** to increase developer **efficiency** by **3x** and reduce maintenance time by creating a **single code base**
- Created **MacOS** application as a **Native Host** to invoke the migrated UI by using **Swift** and **Nethost API**
- Contributed to **5** technical documents regarding multiplatform frameworks and migrating procedures

Mesh Invent (YC China Angel Round)

Feb 2022 – May 2022

Software Engineer Intern

Shanghai, China

- Upgraded the features to generate diagnosis reports for over **100** clients based on **3D** data by using **Qt**, **C++**
- Created severity **visualization chart** based on **52** plagiocephaly severity papers, used by **10** medical agencies
- Developed features to compute the children's head growth chart and visualization with **98% accuracy**

Mech-mind Robotics

Jul 2021 – Nov 2021

Software Developer Intern, Deep Learning Group

Beijing, China

- Utilized **C++**, **Qt** to develop labelling feature of **Deep Learning Software** DL-kit, used by over **500** clients
- Developed the pipeline to call DLL for clients to perform defect detection on assembly line **24/7** using **LabVIEW**
- Upgraded DL-kit to support **multiple** deep learning tasks, increased the training stage efficiency by **100%**
- Used **Teambition**, **Source Tree** for teamwork and version control

PROJECTS

HackerNews-GPT (YC China) | *Ruby on Rails, React, Qdrant, LangChain, LangSmith, Perplexity*

- Developed an AI-powered research platform that transforms tech-related news titles into deep research insights using GPT-4 with function calling.
- Created a **TopicGenerateChain** pipeline that extracts 5–10 high-value research topics from raw content titles.
- Implemented multi-step processing for **title filtering**, **duplication removal**, and **semantic relevance scoring**.
- Integrated with **Qdrant vector database** for embedding-based content matching and semantic search.
- Leveraged **LangSmith** to trace and optimize topic generation and JSON response parsing.
- Utilized the **Perplexity API** for research expansion and automated generation of markdown-formatted research articles.
- Built scalable backend with **Sidekiq**, **PostgreSQL**, and frontend with **React** for content display and interaction.
- Demonstrated expertise in prompt engineering, AI integrations, and production-grade system architecture.

Gesture Recognizer | *Android Studio, Kotlin, JavaFX*

- Designed the canvas for users to draw and save gestures
- Implemented a gesture library for users to manipulate gestures
- Implemented the **gesture recognition** algorithm
- Able to match gestures in the library with input gestures with **98% correctness**

Conway's Game of Life | *Kotlin, JavaFX*

- Used model view controller design pattern to support **3 views** for the game
- Used **JavaFX** toolkit to implement **2D graphics**
- Designed and implemented the UI and user interactions
- Added drawing mode for users to customize supported shapes

Catan Game | *C++*

- Used object-oriented program design
- Applied the **strategy design pattern** for the computer player
- Used **MVC** design pattern to improve the development efficiency by **20%**
- Used **Git**, **Git lab** for code review and collaboration with other 2 team members

Player Statistics Generation System | *Java*

- Designed the program based on **OOP** principles, by collaborating with the organizer of TCBL basketball league
- **Automatically** generated single game statistics and statistic tables for players by means of instructions
- Reduced time of player statistics generation by **1/2**, used for over **300** games during the season