Zhen (Brian) Guan

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Full Stack Developer

With 16 years of personal development history and 2 years of professional work experience, I am proficient in a range of cutting-edge technologies:

Frontend Frameworks	Backend Frameworks	Languages	Other
React.js	Spring Boot	TypeScript	Jest
React Native	Spring Security	Rust	Firebase
Vue.js	Ruby on Rails	C++ (C++20)	Vite
Flutter	Express	C#	Amazon Web Services
Tauri	Django	Java (JDK 18) / Kotlin	
Windows App SDK		Swift	

Education

Master in Computer Engineering Sept 2021 – Aug 2023
Memorial University of Newfoundland

Bachelor of Computer Science Sept 2017 – Aug 2021
Capital Normal University

Work Experience

Contract Project Lead
Feb 2024 – Now

Weicare Cleaning Service Inc.

- **Project: Housekeeping Service Platform**
  - Replicated 2 design proposals for various components, in **Material 3** style, significantly **enhancing user engagement and improving the aesthetic coherence**.
  - Built the system architecture from the ground up, laying a scalable foundation that supported the **successful platform launch and future growth.**
  - Optimized the app **cold start time to <800ms,** markedly **improving the user experience**.
  - **Achieved 99.9% uptime** with SLB and Cloudflare DNS, enhancing backend stability.
  - **Expanded market reach** by integrating multiple payment gateways.

Full Stack Developer (Part time)
Jan 2021 – Jun 2022

Beijing Fengrong Trading Co., Ltd.

- **Project: Company Portal Website**
  - Developed the company's web portal by leveraging React and Ruby on Rails, **enhancing user interaction and streamlining content delivery**.
  - Achieved a **33% reduction in cacheless cold loading times** by reengineering the package structure, significantly **boosting site responsiveness** and user satisfaction.Crafted a dynamic backend management system with **real-time updates** to carousel imagery and knowledge base articles while providing **insights into user behavior** through visit statistics.

Software Developer (Intern)
May 2020 – Jan 2021

Beijing GSafety Technology Co., Ltd.

- **Project: Forest Fire Detection**
  - Developed a C++17 based RTMP decoding system for DJI drone, **enhancing detection capabilities**.
  - Reimplemented an OpenCV bright-spot detection algorithm with C++ and fully tested, **boosting real-time analysis performance by 55%.**
  - Conducted **field testing** and deployed the system, confirming its **robustness and effectiveness.**
- **Project: English Text Emotion Analysis**
  - **Collected over 20k tweets** with self-designed multi-thread Twitter crawler.
  - Optimized the model accuracy by 17% through designing a data sanitization script for tweet texts.

Publications

AirX, a cross-platform text and file sharing system Aug 2023

AirX enables copy and paste across devices, regardless of physical distance or operating systems.

Repository and paper: https://github.com/hatsune-miku/libairx/tree/main/paper

Recent Projects

*Visit eggtartc.com for demo videos and more projects.

Feb 2024 – Now

NG2 Parental Control

A parental control system with remote monitor & control support.

NG2 is a parental control system developed with **Tauri (Rust + React.js)** and its backend is fully implemented with serverless technologies: **Firebase Cloud Functions + Redis**.

- Maximum minutes per day / per session
- Cooldown time every X minutes
- **Remote** screen lock / unlock, remote message, shell commands
- Disallowed / allowed timespan for weekends / weekdays / holidays
- Device screen time report

Time policies are stored in server and changes take effect in real time.

Feb 2023 – Now

AirX

A cross-platform text and file sharing system.

AirX is a project finished by a team of 4. It allows users to **seamlessly copy and paste** files and text between macOS (**SwiftUI**), Windows (**WinUI3**), Android (**React Native**), and Linux (**Rust**) devices over **LAN or Internet**, blurring the boundaries between different platforms. AirX also provides a standalone **cloud storage service** with support for sharing links. Highlights:

- Designed a new UDP-based LAN discovery protocol utilizing Google Protocol Buffers.
- Employed **Apache Kafka** in the backend (**SpringBoot**) for clipboard synchronization.

Jan 2023 – May 2023

Memorial Self-service II

A reimplementation for university self-service system.

Memorial Self-service 2 (MSS2) is a revamped version of the university's self-service system, implemented with modern frontend (**Vue.js, ElementPlus**) and backend (**SpringBoot**) frameworks. Highlights:

- Applied **OAuth2**-based authentication and authorization system with **SpringSecurity** to seamlessly dock with university's existing unified identity verification portal.
- Allowing **complex filters** for each entity while maintaining **highly extensible** code architecture.
- Massive custom CSS for an unique and consistent look and feel.

Feb 2023 – Now

ChatGPTRelay

A chatbot based on OpenAI API with builtin usage control.

Built with **React.js, SpringBoot and JoyUI**, ChatGPTRelay aims to make OpenAI's ChatGPT accessible to everyone, while offering an experience very similar to the official one. Highlights:

- Implemented an API key pool to enhance service reliability.
- Leveraged **Redis** to store high-frequency user token quotas data.