

# Timothy Chen

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## EDUCATION

### McMaster University

June 2024

*Bachelor of Engineering in Software Engineering (Co-op) with Management*

## EXPERIENCE

### Embedded Software Engineer

July 2024 – Present

#### Qualcomm

- Implemented architecture for a platform abstraction layer in C to improve readability, flexibility and scalability for Android display drivers
- Refactored and migrated timing, logging, and synchronization functionality from existing driver code to newly implemented abstraction layer. Verified relevant functionality through unit testing simulation and on-device testing
- Extended migrated functionality to additional modules, reducing redundancy and enhancing maintainability
- Optimized CMake-based build configuration in Zephyr, consolidating source files into a single library. Used TRACE32 tools, reducing compilation complexity for Android ADB-based testing

### Software Developer

January 2022 – December 2022

#### Royal Bank of Canada

- Repaired a Python monitor script to automatically push crucial network details of key resources to Confluence, significantly improved accessibility for network teams and increased efficiency by 80%
- Redesigned the NLU model for a chatbot deployed on Webex and Slack, enabling phrase understanding and meaningful conversations, resulting in an 80% increase in user engagement
- Researched and compiled requirements for expanding the NLU model's network request comprehension, presenting findings and next steps to the network infrastructure leadership team

### Undergraduate Teaching Assistant

September 2021 – December 2021

#### McMaster University

- Facilitated 4 interactive tutorials on parallel programming concepts for 100+ students, covering topics such as semaphores, monitors, and channels, while emphasizing optimization techniques and race condition prevention
- Evaluated 400+ assignments and developed multi-language programming questions (Python, Java, C, Go) to broaden students' technical exposure to parallel computing paradigms

### Automation Developer

May 2020 – August 2020

#### Nokia

- Established a new test bed to automate manual test cases for high-capacity telecommunication routers, measuring over 20 exposed metrics returned from POST request calls made against internal network services
- Revised Perl scripts from existing test beds to encapsulate a Python script, enabling seamless execution of test cases within the internal regression framework and leading to a 20% reduction in manual testing after each update

### Application Developer

January 2020 – April 2020

#### Beth Tikvah

- Designed and implemented a user-friendly scheduler using VBA that streamlined and synchronized all care home schedules, ensuring a caregiver was always present every hour, and resulted in a 90% reduction in errors
- Efficiently reduced time spent on manual updates by 80% and eliminated the need for care home managers to cross-reference multiple schedules, through the implementation of an algorithmic scheduling solution

## PROJECTS

### Healthy Habits | JavaScript · React Native · Git

- Collaborated with a team of 5 to develop a mobile app promoting healthy lifestyles through 6 interactive activities, applying the Presentation–Abstraction–Control architecture

### ReSprint | C# · HTML · CSS · TypeScript · .NET · Git

- Refactored a window web application from VBA to C# for efficient processing and storage of data on structural changes in a material over time due to applied heat
- Added a real-time graph for tracking and monitoring the measured and calculated values of the material

## SKILLS

**Languages:** Python · Java · JavaScript · C · C# · Go · SQL · Perl · VBA · HTML · CSS

**Frameworks & Libraries:** React · React Native · Flask · Docker · .NET · Node.js · Express.js · RASA

**Databases:** MongoDB · Postgresql

**Developer Tools:** Git · VSCode · Visual Studio · Eclipse · Confluence · Jira