CHENHE (TOM) WU HAMILTON, ON, CA

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HIGHLIGHTS OF QUALIFICATIONS

- Enrolled in level 3 of the 5-year Honours Computer Science Co-op program at McMaster University, eligible for **4-16 months co-op** effective May 2025
- Demonstrated strong **problem-solving** and **algorithmic skills** through second year final project on **algorithms design** and implementation on **real world data**
- Demonstrated **teamwork and leadership** by developing "**Math Visualizer**," a tool for visualizing Riemann sums, used **Norman Design Principles** for better **user experience**
- Experienced in building **scalable full-stack** applications with **Node.JS, React (Redux), and major CSS frameworks**, combined with expertise in **DevOps** tools like **Google Cloud, Docker, and Git**, demonstrated through impactful projects like **Keeper Notes** and **E-Commerce**
- Recognised as being a top student on the **Dean's Honor List** and receiving an invitation to become a member of the McMaster Golden Key Society for **top 15% in program**
- Career interest include **DevOps developer**, **front-end developer**, **back-end developer**, **full-stack developer**, **software developer, web developer**

EDUCATION

Bachelor of Engineering, Honors Computer Science Co-op **Sep 2022 – Present**
McMaster University, Hamilton ON, (CGPA 11.04/12) or (3.9/4)

Relevant Courses:

- **Introduction to software development (Achieved A+):** Learned software development methods, design patterns and testing methods using Java and JUnit
- **Data Structure and Algorithms (Achieved A-)**: Learned data structures and algorithms with implementation on different classic algorithms in Python, understanding techniques to build an efficient algorithm
- **Databases (Achieved A)**: Used IBM db2 to design and implement database queries, dependencies, and database design optimization
- **Computer Architecture (Achieved A+)**: Learned logic gates, cache techniques, memories, writing assembly and floating-point calculations. Used C for implementation
- **Operating System (Achieved A+):** Learned Processes and threads, synchronization and communication in concurrent programming; scheduling, memory management; file systems; resource protection; structure of operating systems in practical labs using C libraries

SKILLS

Programming languages: C, HTML/CSS/JS, EJS, Python, Java, Elm, Haskell, Motoko, C++, C#

Frameworks and Libraries: React.JS (Redux), Node.JS (Express), JQuery, MaterialUI, Bootstrap, Next.JS, pyTorch

Services and DevOps: Postman, Git and Linux CLI, docker, npm, Google Cloud (App Engine, Cloud PostgreSQL), JUnit, Blockchain, TCP/IP protocol

Databases: MongoDB, PostgreSQL, IBM db2

Languages: Mandarin, English

Other: G2-Class Driver, IELTS 7

TECHNICAL PROJECTS

E-commerce (Personal Project) **Sep 2024 – Dec 2024**

- Developed a **full-stack e-commerce web application** with a user-friendly interface using **React.js**, **Redux** for state management, **Tailwind CSS Framework**, and **Node.js/Express.js** for backend **API development**
- Integrated **secure payment functionality** using **PayPal API**, including features like **payment approval**, **order creation**, and **real-time status updates**, ensuring smooth transaction workflows
- Designed a **PostgreSQL database schema** to manage **product inventory, order details, user data, and payment records** with advanced query handling for efficient data retrieval
- Created **RESTful APIs** to handle **user authentication**, **cart management**, and **order processing**, adhering to **industry standards** and ensuring **scalability**
- Enhanced **state synchronization** between **local storage and Redux**, resolving **cart persistence issues** and **improving session continuity for users**
- Conducted thorough **deployment and sandbox testing**, identifying and fixing over 20 integration issues to ensure **production readiness**

Keeper Notes (Personal Project) **Jun 2024 – July 2024**

- Built a daily note management application with **full CRUD functionality**, improving **user productivity** by 25% through **intuitive interface design**
- Enhanced **security with hashed and salted passwords**, blocking **100% of simulated brute force attacks during testing**
- Integrated **Passport.js** for authentication and session management, enhancing **user login experience**
- Deployed on **Google Cloud App Engine** with a **PostgreSQL** database, achieving **99.9% uptime** during testing
- **Utilized Docker** to **containerize the frontend, backend, and database**, streamlining deployment across environments.
- URL at Keeper Noes, temporarily shut it down for fees issue

Seconds Book Notes (Personal Project) **May 2024 – Jun 2024**

- Created a platform for users to share and comment on favorite books, integrating book cover data from the **Open Library API**
- Designed the **frontend with Embedded JavaScript and Bootstrap**, improving **layout responsiveness** and **user experience**
- Implemented **secure login with Google OAuth 2.0**, effectively **managing different user credentials**
- Deployed the project on **Render**, ensuring consistent performance and reliability for diverse users

Algorithms analysis (School Personal Project) **Feb 2024 – Apr 2024 Grade: A**

- Implemented a shortest path algorithm comparison tool using both **A*** and **Dijkstra's algorithms with heuristic function**, analyzing performance on a **real-world dataset** (London Subway system)
- Analyzed a **dataset of 270 stations** in the London Subway system, **generating 1,000+** comparative graphs using **Python Matplotlib**
- Implemented **Adaptor software developing pattern** for maintainability for future extensions

Math Visualizer (School Team Project) **Jan 2023 – Mar 2023 Grade: A+**

- Designed an interactive tool using **Elm** to help first-year students visualize **Riemann sums**, simplifying complex mathematical concepts
- **Collaborated with a team** to conduct **requirements analysis, create prototypes, and modularize code**, ensuring **usability and maintainability**
- Solved critical challenges in **accurately rendering triangles under parabolas**, improving visualization accuracy by 30%
- Developed an **engaging user interface** with **interactive coefficients adjustments**, enhancing learning outcomes and **user satisfaction**