

HENRY TU

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EDUCATION

Bachelor of Science, Computer Science | University of Toronto (3.9 cGPA)

(Expected) 2019 - 2023

- Focus in Artificial Intelligence, Computer Systems, and Web Technologies

WORK EXPERIENCE

Full Stack Developer | Faculty of Applied Science & Engineering, University of Toronto

Mar 2020 - Present

- Worked on a system to mine and analyze Tweets for Calgary Transit (Under Professor El-Diraby)
- Used **React**, **Material-UI**, and **Typescript** for frontend work, and **GitLab** for version control and issue tracking
- Developed responsive dashboards and multi-step forms using modular and reusable components
- Optimized the website for mobile and ensured all UI components scaled properly across different devices
- Used **Algolia**, **Firebase**, and **Firestore security rules** to develop a forum for users to create posts and comments
- Wrote unit tests with **Jest** and **React testing library** and integrated it with GitLab CI/CD for automated testing

PROJECTS

RBC Voice | UofTHacks, University of Toronto | Demo: henrytu.me/rbc | Code: [GitHub](#)

Jan 2020

- Awarded **Second Place** for **Most Innovative Solution** by Royal Bank of Canada out of **22 submissions**
- Makes digital-only banking simple, hands-free, and intuitive through **Google Assistant**
- Worked on authentication in **Voiceflow** and used **Firebase Cloud Functions** and **Cloud Firestore** for the backend

GooseAlert | Personal Project, Toronto | Demo: henrytu.me/goosealert | Code: [GitHub](#)

Sep 2019

- Designed and built a **Web** and **Google Assistant** enabled dorm automation system powered by a **Raspberry Pi**
- Used **openVPN** to securely transmit and relay requests from a server to the Pi through the university network
- Developed an alarm system with automatic recording and video streaming using **openCV** and **mjpg** streams

InterNAV | Hack the North, University of Waterloo | Demo: henrytu.me/internav | Code: [GitHub](#)

Sep 2019

- WiFi-based indoor positioning system that can locate a device to an **accuracy of ~1m**
- Able to map a multi-story building and provide optimal routes between rooms using **Dijkstra's algorithm**
- Designed the system and worked on Wi-Fi data acquisition with **airodump-ng**, **Firebase Cloud Firestore**

GOOSE | MasseyHacks (Organizing Team) | Demo: henrytu.me/goose | Code: [GitHub](#)

Jan 2019

- **Vue.js** and **Node.js** based event registration system with a streamlined application review process
- Developed an intuitive multi page **Vue.js** website and secured **REST APIs** with granular permissions
- Handled **over 300 applications** and managed the attendance of **over 200 participants** throughout the event

Cube Factor Authentication | GrizzHacks 3, Oakland University | Demo: henrytu.me/cube | Code: [GitHub](#)

Sep 2018

- Awarded **First Place**, **Most Technically Complex**, and **Best Hardware Hack** out of 40 submissions
- Rubik's Cube based encryption and authentication system using **OpenCV** and **Crypto in Python**
- Implemented **AES** and **RSA** encryption and networked multiple clients with **Firebase Cloud Firestore**

EXTRACURRICULARS

Web Developer | Hack the 6ix | hackthe6ix.com

Jan 2020 - Present

- Developed the website and registration system using **Vue.js** and **GraphQL**, which handled **1600+ applicants**
- Used **Gridsome** to statically render **Vue.js** components to improve performance and SEO
- Created a **Discord bot** which integrated with the registration system to automate role assignment and attendance
- Implemented a new custom UI library, application form, and performed extensive testing over the span of 2 weeks

Software Developer | *FIRST* Robotics Competition

Sep 2018 - Apr 2019

- Developed a low latency vision and control system for a competition robot using **C++** and **openCV**

TECHNICAL SKILLS

Frontend | HTML5, CSS, Vue.js, React, jQuery, Bootstrap

Backend | Node.js, Express.js, MongoDB, Socket IO

Languages | Python, Java, JavaScript, TypeScript, C++, R

Hardware | Raspberry Pi, Arduino

Technologies | Linux (Debian and Fedora based), Mailgun, Cloudflare, Firebase, OpenCV, Voiceflow, Algolia

Development Tools | JetBrains Suite, Git, GitHub, Jest, Gridsome, React testing library