

Tony Sun

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EDUCATION

University of Waterloo, Bachelor of Software Engineering (BSE)

Sep 2020 – Apr 2025

Candidate for Human-Computer Interaction Specialization

3.98 GPA | 2x Dean's Honours List | Mathematics Society of UWaterloo Representative (1A)

EXPERIENCE

Java Developer and Research Assistant, University of Waterloo

Jan 2023 – present

- Contributing to the JSpecify [☑](#) project under Prof. Werner Dietl to develop a unified type checker framework for Java

Software Developer Intern, Trend Micro

Sep 2022 – Dec 2022

- Expanded app control coverage by 20%, implementing driver monitoring and blocking functionalities using **C++** and **Lua**
- Implemented path matching, wildcard and search algorithms to **improve module execution time by 30%**, and optimized for compatibility with **20+ Unix and Windows based operating systems**
- Identified and patched high-priority vulnerability allowing for malicious script execution in locked-down **Bash** shell

Software Developer Intern, Ontario Digital Service

Jan 2022 – Apr 2022

- Led development of microservices-based localizable web app on Ontario.ca with **Eleventy**, projected to reach **1.2 million** unique annual visitors [Public Sector Salary Disclosure [☑](#)]
- Constructed an ETL data pipeline through **Azure Databricks** to process Ontario's largest production dataset using **PySpark** and deliver to **Elasticsearch** clusters, cutting manual processes by 90% and data ingestion time by 80%

Software Engineering Lead (ConSof Team), WATOLINK [☑](#)

Sep 2021 – Jul 2022

- Architected the desktop interface for a **SSVEP**-based brain controlled communication tool using **PyQt5** with **OpenGL**
- Integrated live word completions using **GPT-3** ML model to enhance input speed by 40% on average
- Practiced technical **project management** within team of 8 to enable efficient delivery cycles and exceed deadlines

Tech Analyst Intern, Huawei

Aug 2020 – Aug 2021

- Developed scraping application [☑](#) for 31 independent sources using **Python** to decrease analyst research time tenfold

PROJECTS

tldr, Cal Hacks 9 Winner [☑](#)

Oct 2022

- Developed an article summarization tool featuring a browser extension and website duo in **Preact** and **Flask**
- Tuned **natural language processing** models to provide core functionalities for sentiment analysis and text summary

McAsks, McHacks 9 Winner [☑](#)

Jan 2022

- Created multi-functional SMS chatbot with Flask backend to consume **REST APIs** and serve information through **Twilio**
- Constructed "BEST DESIGN" winning product website supporting user sign-up using **Next.js** and **Figma**

JOHTnotes, Hack the North 2021 Finalist [☑](#)

Oct 2021

- Built and deployed a full-stack web application allowing users to view imported videos with searchable transcripts and make notes at clickable timestamps using **React.js**, **Flask**, and **CockroachDB**

ITrash, Self-Driving Autonomous Trash Can [☑](#)

Oct 2020 – Apr 2021

- Built a robotic trash can that detects thrown objects and repositions to catch them on **Raspberry Pi** and **Arduino**
- Implemented data transfer with **serial port communication** and **Python socket library**, reducing latency by 50%
- Utilized **OpenCV** to track projectile motion and successfully predict target landing position with 75% accuracy

SKILLS

Languages: C++, Python, SQL, JavaScript, Java, C, C#, Go

Tools/Technologies: Docker, AWS, Microsoft Azure, Flask, React.js, Jenkins, PySpark, Elasticsearch, Node.js, MySQL, Postman, Raspberry Pi, Jira, Valgrind, TensorFlow, Selenium, Git, Unix