

Tony (Wuyue) Sun

tony.sun@uwaterloo.ca | github.com/tonyxsun | linkedin.ca/tonywsun | tonysun.tech/ | 1 (681) 299-0111

Languages: C++, Python, JavaScript, TypeScript, Java, Golang, C, Kotlin, SQL, C#

Tools/Technologies: Docker, AWS, Microsoft Azure, React.js, Node.js, Flask, MySQL, MongoDB, Jenkins, Spark, Elasticsearch, Hadoop/MapReduce, Pandas, Appium, Cypress, Selenium, WebdriverIO, Jupyter Notebook, TensorFlow, Git, Unix

Certifications: AZ-900 MS Certified: Azure Fundamentals, Lean Six Sigma White Belt, Coursera Deep Learning Specialization

EXPERIENCE

Verily (f.k.a. Google Life Science), Software Engineering Intern

Jan 2024 – present

- Architected component-based **snapshot regression tests** for PHAF **React.js** design library, automating through **CI** integration

WanderFlow, Backend Developer (Part-time) [🔗](#)

Aug 2023 – Nov 2023

- Spearheaded evolution of **RESTful backend** from **Python** to **Golang** with improved performance and **DynamoDB** integration

Huawei, Web Research Intern

May 2023 – Aug 2023

- Architected cross-platform mobile **WebView** benchmarking tool with **WebdriverIO** and **Appium** for use by 20+ developers
- Implemented **intercepting forward proxy** with **Node.js** to enable customized response caching and 30% decreased test duration
- Utilized **core web vitals** such as LCP and FID to extract and analyze webpage performance in loads and simulated interactions
- Produced a 10 page research report on WebView, Wasm and accessibility, based on select papers in ACM Web Conference '23

University of Waterloo, Research Assistant

Jan 2023 – Apr 2023

- Collaborated with Prof. W. Dietl on **Java data properties static analysis** and standardization in the Checker-Framework [🔗](#)

Trend Micro, Software Developer Intern

Sep 2022 – Dec 2022

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

Ontario Digital Service, Software Developer Intern

Jan 2022 – Apr 2022

- Led and pioneered the development of a **microservices**-based localizable web app with **Eleventy**, reaching **1.2 million unique annual visitors** and serving as code proof-of-concept for 20+ future projects [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 existing manual processes by 90% and data ingestion time by 80%

WATOLINK, Engineering Lead [🔗](#)

Sep 2021 – Jul 2022

- Architected the desktop interface for a **SSVEP**-based brain controlled communication application using **PyQt5** with **OpenGL**
- Practiced technical **agile project management** within team of 8 to enable efficient delivery cycles and exceed deadlines

PROJECTS

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

- Constructed a robotic trash can that detects thrown objects and repositions to catch them on **Raspberry Pi** and **Arduino**
- Enabled low latency data transfer with **serial port** and **python socket** communication between three microcontrollers
- Utilized **OpenCV** to recognize projectile motion and mathematically predict target landing position with 75% accuracy

JOHTnotes, Hack the North Winner [🔗](#)

- 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**, **Google Cloud Platform**, and **CockroachDB**

CloudMesh, Distributed and decentralized MLaaS (in-progress) [🔗](#)

- Enabled distributed computation of predefined workloads through **hybrid P2P** setup of provider and requester peers
- Explored network hole-punching and built **reverse proxy** based solution to enable direct **C socket** networking within NAT

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) | President's Research Award

Relevant Coursework: Data Intensive Distributed Systems, Concurrent Programming, Operating Systems, Networking