# Hans **Wang**

1(647)-447-8128 | hanswang0168@gmail.com | hanswang0608 | hansw0168

## SKILLS

**Languages** C/C++ · Python · Java · C# · Rust · Verilog · Assembly · Javascript · HTML/CSS · Dart · Scala · VHDL · MATLAB
**Technologies** React · Electron · Flutter · NodeJS · Firebase · MongoDB · ExpressJS · Hadoop · Thrift · Spark · Zookeeper · Kafka
**Tools** Git · Jira · Unix · Docker · VIM · SSH · GDB · Valgrind · VSCode · Visual Studio · Bash · Postman

## WORK EXPERIENCE

### Versa Networks
*Santa Clara, CA*

**NETWORK ENGINEER** *May 2022—Apr 2023*

- Achieved 3x higher throughput in threat detection pipeline by parallelization and hardware offloading using C, DPDK
- Developed a suite of internal testing software and CLI tools in C for product validation, boosting team productivity
- Authored Python programs for RegEx analysis and enhancement of threat signatures, improving detection rate by 50%
- Defined various packet processing pipelines and implemented them through NVIDIA DOCA and Morpheus SDKs
- Increased operating efficiency 2x by introducing a gRPC application to configure remote data processing units

### CSC Venture Studio
*Toronto, ON*

**FULLSTACK DEVELOPER** *Sep—Dec 2021*

- Created a novel PC sharing platform capable of high performance game streaming, with Electron, React, and Moonlight
- Conceived patent-pending, 90% accurate personality test algorithm and implemented it in a wellness app using Flutter
- Built an event ticketing web app to connect sports enthusiasts with local facilities, in React, TypeScript, and Firebase

### DragonAgile Inc.
*Waterloo, ON*

**MOBILE DEVELOPER** *Jan—May 2021*

- Led development of proof-of-concept social media app and delivered functional prototype 1 month ahead of schedule
- Composed a modern UI with Flutter and constructed a scalable backend using Google Firebase, AWS, and various APIs
- Gained sound knowledge of team agile development practices working with Git, Jira, and Confluence

## PROJECTS

### AutoHelm
**CAPSTONE PROJECT** *Apr 2023—Present*

- Engineered an automation software for Windows, in C# and Python, for the creation and automation of desktop actions
- Designed an LL(1) custom programming language to capture automatable actions in a platform-agnostic manner
- Wrote a compiler for the custom language to generate executable Windows programs to perform automation via AHK

### Geometry Dash AI
*Oct—Nov 2023*

- Developed a ML library in Java that implements multilayer perceptron neural networks and genetic algorithm training
- Trained AI agents to play a remake of videogame “Geometry Dash” at near human-level, using this library

### PCPair
*Jun—Dec 2020*

- Launched a website that helps users save up to 33% of costs by computing the optimal PC build for any price
- Implemented a Node.js backend with ExpressJS to serve static files and handle HTTP traffic through a REST API
- Automated a web scraper with Puppeteer to collect hardware performance and pricing data and store in MongoDB

## EDUCATION

### University of Waterloo
*3.9 GPA*

**BACHELOR OF COMPUTER ENGINEERING** *Sep 2019—Apr 2024*

- *Program Performance (ECE 459)* Rust, concurrency, profiling, GPU programming, high-performance programming
- *Autonomous Vehicles (ECE 495)* ML and deep learning, computer vision, object tracking, path planning, vehicle control
- *Computer Architecture (ECE 320)* Design and implementation of a 32bit, 5 stage pipeline RISC-V processor in Verilog
- *Distributed Computing (ECE 454)* Fault-tolerant distributed systems, RPC, distributed algorithms and architectures
- *Other Relevant Courses* Embedded Systems, Compilers, Digital Hardware, Computer Networks