WANDA SONG

wanda.song@uwaterloo.ca | github.com/Nil-Cipher | linkedin.com/in/wanda-song | nil-cipher.github.io

EDUCATION

University of Waterloo · Bachelor of Software Engineering *2019 - Expected 2024*

Cumulative GPA: 4.00 (94%)

SKILLS

- **Languages**: C, C++, Typescript, Javascript, Scala, Bash, Python, Java, ARM-Assembly
- **Frameworks & Technologies**: Git, Docker, ROS, Google Cloud Platform, Kubernetes, Node-RED, Android Studio, GraphQL, SVN, jQuery, Jest

EXPERIENCE

Watonomous · Path Planning Core Member *Jan 2021 - Present*

- Developed **road occupancy detection** and **autonomous vehicle rerouting logic** to enable obstacle avoidance using ROS and Lanelet2 libraries
- Integrated occupancy module into the development monorepo using **Docker** and **Docker Compose**
- Co-authored research paper on *Environment Modeling Techniques for Enhanced Behavioral Planning in Urban Autonomous Driving*

ThoughtWire · Software Engineering Intern *Jan 2021 - Present*

- Developed application that allows user to import patient medical data from the Ontario Laboratories Information System (OLIS) and Digital Health Drug Repository (DHDR) into a hospital website
- Introduced **Javascript testing** into the project by investigating viable test frameworks and implementing unit tests with **Jest**
- Enabled continuous logging of search/import results and authentication data into databases using **Javascript**, **SQL**, and **RDF Sparql**
- Reworked UI to enforce authentication and display search results using **jQuery** and **Javascript**

Fairventures Lab · Software Engineering Intern *May - Aug 2020*

- Trained **NLP models** to perform entity extraction on business documents with **above 90% accuracy and recall** with Google AutoML and Cortical Contract Intelligence
- Automated the generation and redaction of PDF documents for model training with a speed of 8 pages per second using Bash and Python, saving **20 man-hours**
- Migrated projects and data between **Kubernetes** clusters to enable better vertical scaling
- Created a **GraphQL** endpoint to aggregate business database APIs to support underwriters with insurance risk evaluation using **Typescript** and GraphQL-Mesh
- Contributed to **open source projects**: graphql-mesh and TheOrgBook

PROJECTS

RIJI Bullet Journal Android App · github.com/Nil-Cipher/RIJI · Java, SQL, Room Persistence Library

- Designed and developed a digital bullet journal with multiple data entry methods
- Enabled **concurrent data retrieval** by mapping out a schema for one-to-many relationship classes using the Room Persistence Library

Two-Player Tetris · github.com/Nil-Cipher/RAXXIS · C++, Arduino

- Led a team of four to develop Tetris on an Arduino using **C++** with LED matrix display
- Optimized memory footprint to **11kB (35%)** of flash memory and **440B (21%)** of SRAM

Math Equation Solver · github.com/vdoubleu/Math-Equation-Solver · C++, Python, React, Javascript

- Developed a **React** webapp that detects and solves handwritten polynomial equations using Optical Character Recognition technology in **Javascript** and **Python**, handled by **Flask**
- Designed and implemented string parser to extract data from latex formatted string equations in **C++**