CHARLES GAO

charlesgao.c@gmail.com ● 514–262–1866 ● Waterloo, Canada

SKILLS

- **Languages**: Ruby, JavaScript, Python, C++, Java, Bash
- **Libraries & Framework**: Ruby on Rails, Node.js, RSpec, JUnit, Catch2
- **Technologies & Tools**: AWS, Heroku, PostgreSQL, CMake, Maven, Docker, Linux

EXPERIENCE

Backend Developer   Sept. 2019 to May 2020
Viafly Technologies, New York
- Created a point-of-sale e-commerce platform with Ruby on Rails, Heroku, React/Redux, and PostgreSQL integrated with Shopify, and Square API
- Added online payment process on the backend using Stripe API
- Implemented an efficient tag-based product search infrastructure through Algolia API
- Designed a normalized database schema on Rails Active Record (ORM)

ETL Developer   May 2018 to Mar. 2019
Energy Profiles Limited, Toronto
- Maintained an ETL pipelines for energy gathering using Java, Python, and C#
- Implemented utility bill data loading system with HtmlUnit, Maven, and CronJob
- Wrote Stored Procedures and Constraints in SQL for cleansing of energy data
- Synchronized temperature data gathering from a network of sensors with BACnet Protocol

Software Developer   Jan. 2018 to Mar. 2018
Kamusi Project, Lausanne
- Created a chatbot on WeChat using Python, Google App Engine and WebHooks
- Designed a database of emojis and foreign words encoded in UTF-8 using SQLite

PROJECTS

JOOS1W Compiler (CS 444)   Jan. 2020 to Apr. 2020
- Created a compiler for JOOS1W, a large subset of Java 1.3 to i386 assembly language in C++17
- Handled Scanning, Parsing, Weeding, Abstract Syntax Tree Building, Name Resolution, Type Checking, Static Analysis and Code Generation for any code in the language of JOOS1W

Trains Microkernel (CS 452)   Sept. 2019 — Dec. 2019
- Created an ARM bare-metal real-time operating system (RTOS) in C
- Implemented context switching, hardware interrupt handler, RS-232 serial port device driver for processes to time-share CPU time

OmnivoxExtrator   Sept. 2016 to Dec. 2016
- Built a file downloader to synced CEGEP class documents with Python, wxPython, and BeautifulSoup
- Captured key target data with CSS selector on the HTML page captured with Requests
- Inspected a website API requests with Chrome DevTools for data extraction
- Synchronized multiple concurrent threads to improve the smoothness of the GUI

EDUCATION

University of Waterloo   Sept. 2015 to Apr. 2020
B. Math., Computer Science Major and Combinatorics & Optimization Major