NICHOLAS WU

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SKILLS (bold skills indicate proficient knowledge)

- Languages: **Python, Java, Go,** C++, C, Javascript, Bash
- Technologies: **Git, Docker, AWS, GCP, Terraform, Ansible, REST, JSON, Android,** Kubernetes, Firebase, Vue, Teradata

EXPERIENCE

Shopify – *Python, Go, Ruby* Jan – Apr 2018
Data Infrastructure, Software Developer Intern

- Created **GCP** templates to automatically deploy services such as **Presto, Yarn, Oozie, Zookeeper** from **Docker** images

Hootsuite – *Python, Go* Sept – Dec 2017
Production Operations and Delivery, Software Developer Intern

- Automated resource access management for onboarding and offboarding developers to reduce operations toil
- Developed **Role-Based Access Control** for development and production services to simplify compliance auditing
- Embraced immutable infrastructure for internal services by using **Terraform** to develop infrastructure as code, **Ansible** to configure **AWS EC2** instances, and **Packer** to build AMIs and **Docker** images

University of British Columbia – *Java, C* May – Sept 2017
Undergraduate Researcher

- Developed DINAMITE, a software performance analysis toolkit for **C** and **C++** programs under Dr. Alexandra Fedorova
- Reduced 50-100% overhead in CPU tracing by leveraging RTDSC instruction to capture timestamps
- Established **Java** support for DINAMITE by implementing CPU tracing using **JVM TI** to communicate with **C** libraries, **ASM** to inject bytecode instructions, and **Java's instrumentation API** to attach a Java agent

Safe Software – *C++, Java* May – Dec 2016
Platforms, Software Developer Intern

- Upgraded **C++** compiler (VC10 to VC14) for over 800+ projects enabling **C++11** features for all developers
- Wrapped 3rd party libraries and re-design interfaces to fix DLL boundary issues
- Implemented the **Teradata** format using **Java (JDBC)**, allowing users to read from and write to Teradata databases

PROJECTS

Atlantis, an **open-source** tool for collaborating on **Terraform** – *Go* Oct 2017 – Present

- Implemented native Slack integration using **Slack API**, enabling Atlantis servers to optionally log to Slack channels

UBC Course Schedule Creator – Go, *Python, Javascript* Apr 2017 – Present

- Componentized schedules, courses, and input fields using **Vue** for front end
- Scraped data for every course at UBC into **Firebase** Database using **Python** (requests, BeautifulSoup, lxml)
- Implemented **Go** (Gorilla, Negroni) backend to output all possible schedules given input courses as a **REST** endpoint
- Fastened **CI** process by building, pushing, and deploying backend **Docker** image to **Heroku** in one **Make** command

Food Shake **–** *Java (Android)* Mar – May 2017

- Solved the question "Where should we eat?" by randomly selecting a nearby restaurant upon shaking the phone
- Published an **Android** library for wrapping **Yelp API** using Retrofit and GSON
- Integrated Yelp and **Google Maps API** to display restaurant details, pictures, and directions

Toy Gun Turret – *C, Java (Android), Verilog* Jan – Apr 2017

- Integrated a camera, LCD screen, Wi-Fi/Bluetooth chip, motors to track objects, rotate, take pictures, and fire projectiles
- Designed a reliable Bluetooth communication protocol between the **Android** device and turret
- Implemented object tracking and motion detection using **OpenCV**

UBC Snowbots – *Python, C, C++* Sept 2014 – Sept 2016

- Built an autonomous robot that navigates through an obstacle course – placed 4th (2015), 5th (2016) in design at IGVC
- Integrated GPS firmware to relay **real-time data** for software driver to make decisions
- Implemented algorithm to calculate distance and angle towards a given GPS waypoint

Blackjack Game – *Java* Dec 2015 – Aug 2016

- Designed the GUI using **JavaFX**; Implemented dealer AI, wagers, double down, split, and high score mechanics

EDUCATION

University of British Columbia, BASc Computer Engineering **–** Dean's Honour List Sept 2014 – Nov 2019

- Current recipient of Trek Excellence Scholarship for achieving **top 5% of Computer Engineering**