NICHOLAS WU

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SKILLS (bold skills indicate proficient knowledge)

- Languages: **Python, Java, C++,** C, Go, SQL, Javascript, Bash
- Technologies: **Git, REST, JSON, Android, AWS, Terraform, Ansible,** Firebase, Vue, Teradata
- Environments: **Linux, Windows, macOS,** Visual Studio, Android Studio, Intellij, VSCode, Vim, Unity

EXPERIENCE

Shopify – *Python, Ruby* **Jan 2018 – Apr 2018**
Software Developer Intern (Data Engineering)

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

- Automated resource access management for onboarding and offboarding developers to reduce operations toil
- Developed role-based access control for developer and production services to simplify compliance auditing
- Embraced immutable infrastructure for internal services by using Terraform to develop infrastructure as code, Ansible to configure EC2 instances, and Packer to build AMIs and Docker images

University of British Columbia – *Java, C* **May 2017 – 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 2016 – Dec 2016**
Software Developer Intern (Platforms)

- 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 customers to read from and write to Teradata databases
- Designed scalable solutions for bugs, documented bug-fixes, and created regression tests to reduce technical debt

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 – *Python, Javascript* **Apr 2017 – Present**

- Componentized schedules, courses, and input fields with Vue for the front end
- Outputted all possible schedules given input courses as a REST endpoint using Amazon API Gateway and AWS Lambda
- Scraped data for every course at UBC with Python (requests, BeautifulSoup, lxml) using Firebase Database as data store

Food Shake – *Java (Android)* **Mar 2017 – 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's 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 2017 – 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 – Sept 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