NICHOLAS WU

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TECHNICAL SKILLS (*bold skills indicate proficient knowledge)

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

ACADEMIC & CO-OP STATUS

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

- Completing 3/5 work terms; available for 4 months beginning January 2018
- Current recipient of Trek Excellence Scholarship for achieving top 5% of domestic students

WORK EXPERIENCE

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

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
- Established Java support for DINAMITE by implementing CPU tracing using JVMTI, ASM and Java's instrumentation API
- Reduced overhead of CPU tracing by 50-100% by leveraging RTDSC instruction to capture timestamps

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 Teradata format using Java (JDBC), allowing customers to read from and write to Teradata databases
- Designed scalable solutions for bugs, document bug fixes and create regression tests to reduce technical debt

PROJECTS & HACKATHONS

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

- Created the front end using Vue and Bootstrap
- Outputted all possible schedules given input courses as a REST service using AWS Lambda and Amazon API Gateway
- Scraped data for every course at UBC using Python (requests, BeautifulSoup, lxml) then storing it on Google Firebase

Food Shake – *Android/Java* **Mar 2017 – May 2017**

- Solved the question "Where should we eat?" by randomly selecting a nearby restaurant upon shaking the phone
- Created an Android library for wrapping Yelp's API using Retrofit and GSON
- Integrated Yelp's and Google Map's API to display restaurant details, pictures, and directions
- Implemented optional user preferences such as budget, cuisine type, and proximity

Toy Gun Turret – *C, Android/Java, 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 and efficient 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; Implement dealer AI, wagers, double down, split, and high score mechanics

Arduino-Based Autonomous Robot – *C, Android/Java* **Jan 2016 – Mar 2016**

- Implemented autonomous driving using Turtle:2WD mounted with an ultrasonic sensor to detect and avoid objects
- Designed a negative feedback loop to ensure straight movement by integrating hall-effect sensors on both wheels