NICHOLAS WU

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TECHNICAL SKILLS (*bold skills indicate proficient knowledge)

- Languages: **Java, Python, C++, C,** C#, Scala, SQL, HTML, CSS, Javascript, Batch, Shell
- Environments: **Linux, Windows, Android Studio, Visual Studio, Intellij, Vim, Unity,** GDB, Eclipse, VSCode
- Technologies: **Git, Android, REST, JSON,** JavaFX, AWS S3/Lambda/API Gateway, Firebase, Vue.js, Node.js
- Databases: **Teradata,** MariaDB, MSSQL, Oracle, SAP Hana
- Hardware: **Verilog, Quartus,** VHDL, Arduino, Raspberry Pi, FPGA

ACADEMIC & CO-OP STATUS

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

- Completed 3/5 work terms; available for 4 or 8 months beginning January 2018
- Received Trek Excellence Scholarship for achieving top 5% of domestic students

WORK EXPERIENCE

Hootsuite **Sept 2017 – Dec 2017**
Software Developer Intern

The University of British Columbia **May 2017 – Sept 2017**
Undergraduate Researcher

- Develop DINAMITE, a software performance analysis toolkit for C/C++ programs under Dr. Alexandra Fedorova
- Establish Java support for DINAMITE by implementing CPU tracing using JVM TI, ASM, and Java's instrumentation API
- Reduce overhead of CPU tracing by 50-100% by leveraging RTDSC instruction to capture timestamps

Safe Software **May 2016 – Dec 2016**
Software Developer Intern

- Upgrade C++ compiler (VC10 to VC14) for over 800+ projects enabling C++11 features for all developers
- Wrap 3rd party libraries and re-design interfaces to fix DLL boundary issues
- Implement Teradata Database format using Java (JDBC), allowing customers to read/write data from/to Teradata Database
- Design scalable solutions for bugs, document bug-fixes and create regression tests to minimize technical debt

PROJECTS & HACKATHONS

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

- Create front-end using Vue framework and Bootstrap
- Output all possible schedules given user input courses as a REST service using AWS Lambda and Amazon API Gateway
- Scrape data for every course at UBC using BeautifulSoup, lxml, and requests then storing it on Firebase

Food Shake – *Android/Java* **Mar 2017 - Present**

- Solve "Where should we eat?" situations by randomly selecting a nearby restaurant on phone shake
- Create an Android library for wrapping Yelp's API using Retrofit and Gson
- Integrate Yelp's and Google Map's API to display restaurant details, pictures, and directions
- Implement optional user preferences such as budget, cuisine type, and distance

Toy Gun Turret – *C, Android/Java, Verilog* **Jan 2017 - Apr 2017**

- Integrate a camera, LCD screen, Wi-Fi/Bluetooth chip and motors to rotate, track objects, take pictures, and shoot projectiles
- Design a reliable and efficient Bluetooth communication protocol for the turret and Android device
- Implement object tracking and motion detection using OpenCV

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

- Build an autonomous robot that navigates through an obstacle course – placed 4th, 5th in design at IGVC in 2015, 2016
- Integrate GPS firmware to relay real-time data for master driver to make decisions
- Implement algorithm to calculate distances/angles towards a given GPS waypoint

Blackjack Game – *Java* **Dec 2015 – Sept 2016**

- Design the GUI using JavaFX; Implement dealer AI, wagers, double-down, split, and high-score mechanics

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

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