NICHOLAS WU

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TECHNICAL SKILLS (*bold skills indicate proficient knowledge)

- Languages: **Java, C++, C, Python,** C#, Scala, SQL, HTML, CSS, Javascript, Batch, Shell, Intel x86, Arm V7
- 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, Twilio
- Databases: **Teradata,** MariaDB, MSSQL, Oracle, SAP Hana
- Hardware: **Verilog, Quartus,** VHDL, Arduino, Raspberry Pi, FPGA

ACADEMIC & CO-OP STATUS

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

- Completed 3/5 work terms; available for 4 or 8 months beginning January 2018

WORK EXPERIENCE

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

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

- Develop DINAMITE, a software performance analysis toolkit for C/C++ programs
- 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

Schedule Creator Website (Python, Javascript) **Apr 2017 – Present**

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

Food Shake (Android/Java) *@ nwHacks 2017* **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

Desktop Launcher (C, Android/Java, Verilog) **Jan 2017 - Apr 2017**

- Assemble a toy turret integrating a LCD screen, Bluetooth dongle, Wi-Fi chip, camera, and servo motors
- Design a reliable and efficent Bluetooth communication protocol between the turret and Android device
- Implement object tracking and motion detection using OpenCV

Blackjack Game (Java) **Dec 2015 – Feb 2017**

- Design the GUI using JavaFX, implement features such as wagers, double-down, split, and high-score
- Program a dealer AI that simulates a real blackjack game in the casino

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

- Build an autonomous robot that navigates through an obstacle course for the annual IGVC Competition
- Develop C++ code to analyze current location and calculate distances/angles towards a given waypoint
- Integrate GPS firmware driver to relay data in real-time for master driver to make decisions

Arduino-Based Autonomous Robot (C, Android/Java) **Jan 2016 – Feb 2016**

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