

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**, Firebase, Vue.js, Node.js, Microsoft Bot Framework
- Databases: **Teradata**, MariaDB, MSSQL, Oracle, SAP Hana
- Hardware: **SystemVerilog**, **Quartus**, VHDL, Arduino, Raspberry Pi, FPGA

ACADEMIC & CO-OP STATUS

University of British Columbia, BSc in Computer Engineering, Dean's Honour List **September 2014 – May 2019**

- Completed 2/5 work terms; Available for 4 or 8 months beginning September, 2017

WORK EXPERIENCE

University of British Columbia (C++, Java) | Undergraduate Researcher | Vancouver, BC **Present**

Department of Electrical and Computer Engineering

- Develop DINAMITE, a software performance analysis tool for C/C++ programs, under the supervision of Dr. Alexandra Fedorova
- Design solutions to instrument Java Bytecode, allowing DINAMITE to also analyze Java programs

Safe Software (C++, Java) | Software Developer Intern | Surrey, BC **May 2016 – December 2016**

- Upgrade C++ compiler (VC10 to VC14) for over 800+ projects to enable C++11 features for every developer
- Wrap 3rd party libraries and re-design interfaces to fix DLL boundary issues
- Implement the Teradata format using Java's 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

Course Schedule Scraper (Python) **April 2017 – Present**

- Use BeautifulSoup, requests and lxml to scrape data for every course at UBC and store it on Firebase
- Allow users to select desired courses that are full and notifies them of available seats by leveraging Twilio's API
- Implement an automated course schedule maker that outputs all possible schedules given input courses

Desktop Launcher (C, Android/Java, SystemVerilog) **January 2017 - April 2017**

- Assemble a toy turret consisting of a LCD screen, Bluetooth dongle, Wi-Fi chip, camera, and servo motors
- Design a simple UI on a VGA screen and mobile device to control the turret, take photos, shoot projectiles
- Implement motion detection and colour blob tracking using OpenCV

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

- Design an application to solve "Where should we eat?" situations by randomly selecting a nearby restaurant on phone shake
- Create an Android wrapper for Yelp's API and Google Map's API to fetch data, display pictures and show directions
- Implement optional user preferences such as budget, cuisine type, and distance

Blackjack Game (Java) **December 2015 – February 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) | Senior Firmware Developer **September 2014 – September 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) **January 2016 – February 2016**

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

Restaurant Database (Java) **December 2015**

- Implement a restaurant database that stores information about certain restaurants, reviews and Yelps' user information in JSON
- Enable a multi-threaded client-server pattern to return data about restaurants given an input query

MORE PROJECTS

- For more projects and details, please visit github.com/nickwu241/list-of-projects