NICHOLAS WU

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TECHNICAL SKILLS

Programming Languages/HDL (most fluent at the top)
- Java, C++, C
- Python, SQL, C#, HTML, CSS, Javascript, Batch/Shell Scripting, SystemVerilog, Intel x86, Arm V7
- Scala, LUA, MATLAB, Octave, VHDL

Technologies/Environments
- Linux, Windows
- Git, Visual Studios, Eclipse, Inteliji, Unity, GDB
- .NET, JDBC, JSON, ROS
- MariaDB, MSSQL, Teradata, Sap Hana
- Arduino, Raspberry Pi, FPGA
- Word, Excel

ACADEMIC & CO-OP STATUS

The University of British Columbia – 3.6 GPA   **September, 2014 – May, 2019**
BASc – Computer Engineering, Minor in Commerce
- Completed 2 co-op work terms; Available for 4 or 8 months beginning September, 2017

WORK EXPERIENCE

Safe Software Inc. (C++, Java) – Surrey, BC   **May, 2016 – December, 2016**
Software Developer Intern - Platforms, Builds & Java Formats Team   (8 months)
- Upgrade C++ compiler (VC10 to VC14) for over 800+ projects allowing all developers to utilize C++11 features
- Fix many DLL boundary and compatibility issues between APIs during compiler upgrade
- Re-design interfaces to be DLL boundary safe OR wrap incompatible libraries with boundary safe DLLs
- Implement a commonly used format by our customers, Teradata Non-Spatial (JDBC), for FME 2018.0
- Design scalable solutions for bugs and document bug-fixes to minimize technical debt

TECHNICAL PROJECTS

AMS Game Development Association (C#)   **January, 2017 – Present**
Game Developer   (on-going)
- Create a 3D puzzle game with a story writer, audio designer, gameplay designer and two other developers
- Develop backend gameplay scripts in C# utilizing the Unity Game Engine

UBC Snowbots (C++, Python)   **September, 2014 – September, 2016**
Senior Software Developer   (2 years)
- Build an autonomous robot that navigates through an obstacle course for the annual IGVC Competition
- Develop 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
- Guide new members through required challenges such as PrimeBuzz, introduction to ROS and basic Git

Don't Burn Your Friends @ HackTheNorth (C#)   **September, 2016**
- Create a 2D adventure game under a 36-hour deadline at HackTheNorth 2016
- Design gameplay mechanics and overall feel of the game, implemented in C# using Unity
- Mentor junior teammate by teaching Git and explaining tradeoffs with certain software designs

Internet Connected Baby Monitor (Python, C, Web)   **March, 2016**
- Collaborate with a team of 6 to produce a prototype baby monitor powered by the Raspberry Pi in three weeks
- Implement video live-streaming and sound/motion detection to give feedback to users
- Create a simple secure web user interface for users to control temperature, humidity and even play lullabies!

Happy Claws @ nwHacks (C#)   **February, 2016**
- Create a virtual claw machine game under a 24-hour deadline at nwHacks 2016
- Implement back-end scripts for game play and create game environment using Unity
- Integrate the Myo Armband to control the movement of claw for interactive gameplay

Morse Code with Arduino (C)
January, 2016
- Design a device that prompts the user for a speed and messages to output with Morse Code
- Implement a 7-segement LED to display the character that's translated into Morse Code in addition to a LED and piezo buzzer that produce the corresponding Morse Code

Restaurant Database (Java)
December, 2015
- Implement a restaurant database that stores information about certain restaurants, reviews and yelps' user information in an area (JSON format)
- Enable a multi-threaded client-server pattern to return data about restaurants based on a user's input query

Blackjack Game (Java)
December, 2015
- Implement wages and various player options including split and double down using Java
- Program a dealer AI that simulates a real blackjack game in the casino to be more user-interactive

RISC Machine (SystemVerilog)
October, 2015
- Develop a simple RISC Machine in Verilog that implements to read arithmetic and memory instructions to learn about CPU design
- Improve the finite state machine to support branch instructions

Tic Tac Toe Game (SystemVerilog)
September, 2015
- Create a Tic Tac Toe game using Synthesizable Verilog with the DE1-SoC FPGA board and a VGA screen
- Implement an AI that will never lose the game with combinational logic that allowed me receive several bonus marks

Simon Game (C)
March, 2015
- Design the Simon Game using C and specifically the DAQ module library
- Improve the code to play the games at different speeds and specifying different win conditions

VOLUNTEER EXPERIENCE

The University of British Columbia
February, 2015 – Present
Orientation Leader
- Lead several campus tours and guide students through icebreaker activities
- Demonstrate leadership by welcoming prospective students, sharing personal stories, and answering any questions to welcome them into the UBC community

UBC Leadership Conference
November, 2015 – January, 2016
Lunchtime Activity Organizer
- Provide and distribute lunch for over 1200 delegates at one of Canada's largest student-run conferences
- Organize over 20 rooms over the UBC campus to set-up for lunch time workshops and activities

GEERing Up! UBC Engineering & Science for Kids
June, 2014 – September, 2014
Junior Instructor
- Supervise and act as a positive role-model to motivate campers to finish activities
- Lead and guide a group of 30 kids through activities to ensure they are interested and learning

INTERESTS

- Robotics, automation, data analysis, spatial data, game development, web development, data mining
- Self-empowerment, music, sports, games, movies/TV shows, food, travel
- Soccer, basketball, volleyball, ultimate, snowboarding, hiking