Yousif El-Wishahy

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UBC Engineering Physics

GitHub: yel-wishahy
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Skills

Software	Microsoft Office, Java, C/C++, C, Python, Jupyter, Git, LaTeX, Arduino, PlatformIO, STLink, Particle
Mechanical	SolidWorks, PDM, Fusion360, laser-cutting, 3D-printing, FEA, Hand tools, BOMs, PIDs, engineering drawings
Electrical	Circuit analysis, electrical design, PID control systems, power circuits, Fritzing, Eagle, microcontrollers, sensors, actuators, soldering, reflowing, communication protocols, oscilloscope, DMM, AWG

Work Experience

Hardware and Firmware Engineer **Jan 2021 — Apr 2021**
Brave Cooperative, Internship *Vancouver, BC*

- Worked with a team of engineers to select optimal radar module replacement in a human detection system based on cost, performance, and stakeholder input
- Developed software GUI utility with python to decode and visualize radar data received over serial communications with ability to log data in .csv files for later analysis
- Processed radar signals for human motion data to distinguish radar module performance by low pass filtering in software
- Designed electrical circuit schematics in Eagle and C/C++ firmware for a prototype alarm system that alerts a remote server and powers an alarm
- Utilized laser cutter, soldering and reflowing tools to assemble radar device and enclosure and optimized workflow by designing jigs and documenting process

Projects

Autonomous Waste Retrieval Robot **May 2021 — Aug 2021**
Engineering Project Course *UBC*

- Developed an autonomous waste retrieval robot with 3 engineering students and achieved top score when competing with 15 other teams in a randomized arena environment
- Designed and fabricated robot electronic systems including power, sensor, motor, and central processing circuits
- Implemented and optimized PID control navigation algorithm that utilizes IR sensor readings and outputs optimal motor parameters to accurately follow a tape path
- Programmed state machine and startup sequence platformIO firmware for 7 subsystems of the robot in C/C++ to run on an STM32 microcontroller

Game Server Economy Plugin **Jan 2021 — August 2021**
Personal Project *Richmond, BC*

- Created an economy plugin (server-side modification) in Java for a Minecraft server which I host
- Programmed algorithms to detect physical currency in inventories, allow players to open accounts at server banks, and parse and save data in a local database
- Invented AI bots that utilize player data to intelligently trade with and tax players to increase server immersion
- Continued to publish updates to server plugin when new game updates are released that cause plugin errors

Mechanical Subteam Member **Sep 2020 — May 2021**
UBC Mars Colony Student Team, Sabatier Reactor Project *UBC*

- Streamlined the build process of a chemical reactor that produces methane fuel by prototyping the reactor design in SolidWorks, and managing the team's PDM vault
- Assembled reactor modules by compression fitting piping to components with wrenches and ferrules, and utilizing an industrial pipe bender to fit the steel pipes to the reactor frame
- Reduced project costs by designing an automated liquid output measuring system with solenoid valves to replace a mass flow meter

Education

B.A.Sc. Engineering Physics, *University of British Columbia* Graduating Apr 2024
Dean's Honour List

About Me

- Passionate about robotics and aerospace
- I frequently jog, bike, walk, and hike with friends
- During my free time, I like to tinker with electronics and program software and games
- I enjoy science, sci-fi, and fantasy in any form (novels, shows, movies, and video games)