Yamaan Bakir

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Technical Skills

- **Hardware Engineering:** PCB Layout & Design, Hardware Validation, 3D Printing, MCUs, I2C, CAN Bus
- **Software Engineering:** Java, Javascript, C/C++, Python, Matlab, HTML/CSS, React, Flutter, Unix
- **Design Tools:** Solidworks, Altium Designer, Git/Github, Figma, Microsoft Suite, AutoCad

EXPERIENCE

Lawson Health Research Institute | Biomedical Engineering Research Intern – *London, Ontario*   May 2022 – Present
- Developed a custom triple-motor driver board and wrote control algorithms for position control in C. Reduced overall space consumption and wiring by 90%
- Managed git repository and implemented source control on older code bases.
- Performed over 20 experiments using Stewart-Platform robots to evaluate the efficacy of simulations.

Western Formula Racing | Grounded Low-Voltage Sub-team Co-Lead   May 2020 – Present
- Lead the development for vehicle control unit software managing the control and electrical safety of the vehicle.
- Implemented the 2022 wiring harness and resolved packaging conflicts with other team leaders.
- Elected to oversee the redesign of the low voltage control system for the 2023 design cycle.
- Collaborated with other team members to troubleshoot and resolve wiring issues.

Western Undergraduate Engineering Society | Mechatronics Representative   Sept 2021 – April 2022
- Oversaw more than $500,000 worth of capital and disbursements therefore providing new equipment to over 100 students.
- Mobilised student leadership to evoke policy change in the availability of online educational content for students struggling to adjust back to in-person learning.

Western University | Student Teaching Support Intern – *London, Ontario*   June 2021 – August 2021
- Developed Western's ES 1050 Design course while collaborating with its stakeholders.
- Spearheaded development of a project for students to work on that incorporated software, mechanical, and chemical engineering skills to broaden the scope of their design skills in first year. The project has been completed by over 850 students.

Projects

Western Engineering Support Bot | Discord bot for helping students stay organised (*Github Repository*)
- Written in Python, Support Bot takes the ambiguity out of being a Western Engineering student.
- Automatically creates a weekly task list for first year students.
- Answers student questions about what is due for a given course.
- Used by over 1,700 engineering students.

Spartan Robotics 2019 Robot Code | Robot Code for the 2019 FIRST Robotics Competition (*Github Repository*)
- Designed and implemented position hold algorithm for holding robotic wrist in place in Java.
- Collaborated with several other programmers to design and implement the drive code of the robot.
- Team placed 7th out of 32 at the York Regional event and placed in the 1st alliance at the Western Regional Event.

FRC Scouting Application | Centralised off-line scouting application for FIRST Robotics Competition (*Github Repository*)
- Java based Android app for collecting mach data at FIRST Robotics Competition events.
- Devices send match data to a computer running a python script which compiles each device's match data into one large database.

EDUCATION

Western University | Ivey Business School   Sept 2020 – April 2024
BESc Mechatronics Systems Engineering | HBA – Business Administration
Awards: *Dean's Honours List, Western Undergraduate Summer Research Internship (USRI), Western Summer 2021 Student Teaching Support Internship*