Yamaan Bakir

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Technical Skills

- **Hardware Engineering:** CAD/CAM, CNC, PCB Layout & Design, Hardware Validation, MCUs, I2C, CAN Bus.
- **Software Engineering:** Java, Javascript, C/C++, Python, Matlab, HTML/CSS, Flutter, Virtual Machines.
- **Design Tools:** Solidworks, HSMWorks, Altium Designer, Git/Github, Figma.

EXPERIENCE

Lawson Health Research Institute | Biomedical Engineering Research Intern – *London, ON*   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%
- Performed over 20 experiments using Stewart-Platform robots to evaluate the efficacy of simulations

Western Formula Racing | Machining Co-Lead   May 2020 – Present
- Created the CAD and CAM for over 20 machined parts made of aluminium, MDF and various plastics
- Solved complex work-holding problems by designing various fixtures and mounts and worked with designers to modify part geometry based on machining limitations

Western Undergraduate Engineering Society | Mechatronics Representative – *London, ON*   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

Spartan Robotics | Design Lead – *London, ON*   Sept 2018 – April 2020
- Designed the entire mechanical assembly of the team's 2019 and 2020 robots
- Lead the manufacturing and assembly process for the team
- The team placed 7th out of 32 at the York District Event and was placed on the 1st place *alliance* at the Western Event

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

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*