

# Yamaan Bakir

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## Education

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**Ivey Business School**, HBA – Honours Business Administration

Sep 2022 – Apr 2024

**Western University**, BESC – Mechatronics Systems Engineering

Sep 2020 – Apr 2024

**Awards:** Dean's Honours List, Western Undergraduate Summer Research Internship (value: \$8,400), Western Summer 2021 Student Teaching Support Internship (value: \$2,812), Western Admission Scholarship (value: \$1,500)

## Experience

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**Electrical Team Lead**, FSAE Western Formula Racing

Sep 2020 – present | London, ON

- Implemented a new task tracking system as the program manager for the 2023 season reducing management workload
- Pioneered new documentation to help onboard recruits, reducing onboarding time by 50%
- Lead the development for vehicle control unit software, allowing for the safe operation of the vehicle
- Implemented the 2022 wiring harness and solved packaging conflicts with other team leaders

**Biomedical Engineering Research Intern**,

May 2022 – Aug 2022 | London, ON

*Lawson Health Research Institute*

- Developed a custom motor control board and wrote control algorithms in C for position control, reducing overall space consumption and wiring by 90%
- Debugged PCBs by examining behaviour with an oscilloscope, allowing for repair rather than disposal
- Performed over 20 experiments using Stewart-Platform robots validating several simulated models

**Student Teaching Support Intern**, Western University

Jun 2021 – Aug 2021 | London, ON

- Redesigned Western's ES 1050 Design course while collaborating with its stakeholders, improving the student satisfaction rate by 25%
- 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


**Design Lead**, FRC Spartan Robotics

Sep 2018 – Apr 2020

- Introduced the concept of creating an entire robot model in computer-aided design (CAD), shortening the manufacturing and build process by 50%
- Wrote the position control algorithm for the 2019 robot using PID control and Sine-based feed-forward
- Took on the role of strategy lead during competition where 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

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**Western Engineering Support Bot**, *Discord bot for helping students stay organised* 

- Developed a *Discord* chat bot using Python that creates automated scheduling to help first year engineering students at Western University stay on task
- By creating schedules, answering frequently asked questions, and providing other support, Support Bot has been used by over 2000 students and has been contributed to by the open-source community

**Portfolio Website**, *Project Showcase Website* 

- Created a Portfolio Website using React and Next.js, building upon existing HTML, CSS, and JavaScript skills
- Learned how to create custom React Components and used TailwindCSS for styling
- Implemented Continuous Integration / Continuous Delivery using Netify

## Technical Skills

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**Hardware Engineering:** CAD/CAM, CNC Manufacturing, PCB Layout & Design, Hardware Validation, 3D Printing, MCUs, I2C, CAN Bus, Robotics

**Software Engineering:** Java, Javascript, C/C++, Python, Arduino, Matlab, HTML/CSS, Flutter, OOP, Web Deployment, Linux, Android Studio, OOD, JSON, Scripting, React

**Design Tools:** Solidworks, Altium Designer, Git/Github, Figma, Microsoft Suite, Excel, Unity