

Vishal Prakash

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EDUCATION

University of Waterloo

Bachelor of Applied Science in Mechatronics Engineering (Co-op)

Kitchener-Waterloo, ON

Graduating June 2028

TECHNICAL SKILLS

Languages: C, C++, Python, JavaScript, Arduino IDE, HTML, CSS

Frameworks/Tools: React.js, React Native, TypeScript, Node.js, Next.js, Tailwind CSS, Git, Bash

Software: SolidWorks, AutoCAD, VS Code, Visual Studio, CLion, IntelliJ

EXPERIENCE

Software Developer Intern

Zefto

May 2024 – Aug 2024

Kitchener-Waterloo, ON

- Developed the delivery driver tracking service and login page functionality for an Android food delivery mobile application using React.js, React Native, and Google Maps API
- Spearheaded a team of three to develop the functional documentation for the mobile application, detailing the design requirements and the app functionalities
- Presented the functional documentation to a board of executives, pitching app functionalities and discussing future design steps

Robotics Instructor

Zebra Robotics Inc

July 2022 – April 2024

Mississauga, ON

- Taught fundamental concepts of robotics and engineering to over 70 kids from grades 2-12 using Ev3, Spike, and MicroPython programming languages
- Coached over 10 kids to compete in robotics competitions at the regional, provincial, and national levels, leading to over three awards and fostering teamwork and technical skills

Community Intern

Inspirit

July 1, 2021 - July 31, 2021

Palo Alto, CA

- Collaborated with a cross-functional team of STEM-oriented high school students to run outreach events to increase the awareness of VR and AR technologies, achieving a 200 person attendance
- Led the planning of the events by reaching out to guest speakers from known STEM organizations to speak about the future of education in AR and VR

PROJECTS/TEAMS

CyberBike | *A remote controlled self-balancing bike that uses a reaction wheel to stabilize itself* Dec 2023 – Present

- Coded a Bluetooth connection between two Nano 33 IoT Bluetooth boards to send and receive data from motors on the bike using Arduino IDE and ArduinoBLE library
- Developing a mobile application to establish remote connectivity with the bike for driving purposes using React Native and Bluetooth APIs
- Programming a PID controller with Arduino IDE to utilize a reaction wheel to balance the bike by spinning it in the appropriate direction to counteract any exterior forces that may tip the bike

Future Engineers Self-Driving Car | *World Robotics Olympiad*

May 2023 – Sep 2023

- Designed and prototyped 3D-printed shaft adapters to adapt from LEGO parts to motor shaft using SolidWorks and AutoCAD
- Utilized Arduino IDE and I2C communication protocols to directly interface with the TCS34725 RGB sensor and L3G4200D gyro sensor and get readings for the robot to use
- Implemented an image-reading program using the PixyCam 2.1 to identify colored blocks and accurately orient the robot to pass either the left or right of the block based on the challenge rules, achieving a 95% accuracy

VEX Team CAD Lead | *VEX Robotics Competition*

May 2020 – March 2023

- Led 3 team members to design and test mechanisms for custom-built competition robot using SolidWorks
- Designed and prototyped a working disc intake using SolidWorks and VEX parts, achieving a 90% success rate in accurately intaking discs into the robot
- Coordinated system integration across CAD and prototyping subteams by setting a deadline to prepare a competition-worthy robot