Bhavya Shah

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CORE SKILLS

Programming Languages: C | C++ | C# | Python | HTML | CSS | JavaScript | MATLAB | Java | R | Julia | Visual Basic
Web/Application Frameworks: React | Tailwind | OpenCV | YoloV8 | Node.js | Jupyter Notebook | PyTorch | Tkinter
Tools/Technologies: Git | Jira | Autodesk Inventor | Figma | STM32Cube | Raspberry Pi | TouchGFX | Simulink
Interpersonal Skills: Leadership | Collaboration | Time Management | Adaptability | Critical Thinking | Teaching

WORK EXPERIENCE

Senior Camp Counsellor – The Steam Project **Jun 2023 – Aug 2023**

- Guided campers through the completion of over **100+** STEAM-related projects, such as hydraulic judo robots
- Spearheaded 3D printing workshops daily using **TinkerCad** to introduce **CAD Design** to over **90** campers
- Taught **SCRATCH** programming on **micro:bits** to recreate **5** games, including "Bop It" & "Rock Paper Scissors"

Software Developer Intern – Ageis Technologies **Jun 2022 – Aug 2022**

- Collaborated with cross-functional teams to analyze requirements and draft **25+** user stories using **Jira**
- Developed a test-taking platform for Sunlife Financial in 2 months by following the **Agile** framework
- Leveraged **HTML, CSS, and JavaScript** for the website's design, integrated multilingual support for **35** languages

EDUCATION

McMaster University - Bachelor of Engineering, Mechatronics **Sep 2021 – Apr 2025**

- GPA: **3.9** | Relevant Courses: Programming for Mechatronics in **C**, Embedded Systems, Data Structures in **C++**

PROJECTS

Pacemaker **Sep 2023 – Present**
Programming Lead — Python | Tkinter | Simulink | Documentation

- Utilized **MATLAB Simulink** to model state transitions for **four** distinct pacing modes for the human heart
- Developed a user interface for doctors to interact with the pacemaker using **Python's GUI library (Tkinter)**
- Documented the entire development process of the pacemaker (**FRDM-K64F**) for safety-critical applications

Automated Recycling System **Jan 2022 – Mar 2022**
Programming Lead — Python | Raspberry Pi | Automation

- Developed a **Python** program on a **Raspberry Pi** that utilizes sensors to identify the recyclability of materials
- Employed a **robotic arm** to transport the scanned items to their respective bins; Reduced errors in sorting by **92%**

EXTRACURRICULARS

MacFalcon (Robomasters) **Oct 2023 - Present**
Control Vision Engineer — PyTorch | YoloV8 | OpenCV

- Ranked **3rd** out of **22** teams in the RoboMasters University League (an annual robot-based combat competition)
- Developed object detection algorithms using **PyTorch** and **YoloV8** to identify and track enemy robots
- Integrated **OpenCV** to capture video input from the robot's camera to help with enemy armor plate detection

McMaster DeltaHacks IX – 1st Place **Jan 2023**
Web Development Head — ReactJS | Figma | Tailwind

- Programmed a gamified web app **CodeWarriors** using **ReactJS**, providing a global platform to learn coding
- Constructed **Figma** wireframe to mockup initial UI, and used **CSS** and **Tailwind** to implement the design
- Placed **1st** from **431** competitors in this hackathon for change with over **$12,225** in prizes

Mac Formula Electric **Sep 2021– Jan 2023**
Embedded Systems Engineer — TouchGFX | STM32 | Embedded C

- Performed extensive **CAN** testing through the **STM32Cube** IDE for the STM32F7508 MCU
- Reconstructed **UI/UX** in **TouchGFX** for the dashboard featuring an animated boot screen & metrics display
- Ranked **31st** out of **276** teams (Top 15th Percentile) in the EV sector of the SAE Michigan 2022 Competition