

Keshav Malhotra

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EDUCATION

University of Waterloo <i>BASc, Mechatronics Engineering (Co-op)</i> <i>George A. Ward Entrance Scholarship President's Scholarship of Distinction</i>	2025 - Present Waterloo, ON
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SKILLS

Languages: C++, Python, Java, JavaScript, HTML/CSS

Full Stack: React, Node.js, WordPress

Tools: Git, VS Code, Visual Studio, PyCharm, IntelliJ, Clion, Eclipse, pandas, NumPy, Matplotlib, Langchain

Other: Linux, MS Office, G Suite, G License, Azure

EXPERIENCE

SickKids Hospital <i>AI Research Intern</i>	Jul. 2024 – Oct. 2024 Toronto, ON
<ul style="list-style-type: none">Contributed to the development and successful launch of SKAI (SickKids AI), the hospital's first AI chatbot.Influenced LLM optimization for clinical deployment by synthesizing qualitative data from 100+ patient interviews into actionable technical recommendations for model temperature and sentiment alignment.Prototyped a mobile autonomous robot for emergency department logistics, integrating sensor fusion and Arduino-based control systems to navigate high-traffic clinical environments.	
FRC - Team 6141 <i>School Captain</i>	Jun. 2024 – Jun. 2025 Toronto, ON
<ul style="list-style-type: none">Developed a Java-based control system for a differential drive robot using WPILib, implementing Arcade Drive logic for intuitive teleoperated handling via Xbox controller.Mentored 30+ students in Git version control, object-oriented programming, and sensor integration (ultrasonic/IR), establishing a standardized documentation pipeline.	
Ideal Computers Technology <i>Technical Team Intern</i>	Nov. 2023 – Dec. 2023 Toronto, ON
<ul style="list-style-type: none">Delivered a company website redesign using HTML, CSS, and JavaScript to improve efficiency.Installed and configured operating systems (Windows, MacOS, Linux) for client systems.Diagnosed and fixed client system crashes and corrupted system files through command-line-interfaces (CLI).	

PROJECTS

NavBot - Autonomous Hospital Navigation Robot — View Demo — <i>C++, Git</i>	Nov. 2025 – Dec. 2025
<ul style="list-style-type: none">Developed autonomous navigation software for a hospital delivery robot, handling real-time decision-making in dynamic indoor environments.Implemented Dijkstra's algorithm to calculate optimal global paths in a static map, integrated with real-time local path planning to navigate dynamic hospital environments.Experimentally tuned a custom PI controller for differential drive motors, achieving rotational accuracy within 1° error and linear precision within 5cm using bumper and ultrasonic sensor feedback.	
Roboventure — View Demo — <i>Arduino, Git, Excel</i>	Aug. 2024 – Sept. 2024
<ul style="list-style-type: none">Spearheaded technical workshops for 50+ students, delivering hands-on instruction in Arduino firmware development, circuit prototyping, and electrical safety practices.Scaled organization participation by 300% within one month by architecting a targeted outreach strategy and executing high-engagement robotics demonstrations.Secured \$1,500 in external venture funding from Promise1000 Canada; managed the full procurement lifecycle and budget allocation for hardware components and event infrastructure.	
AI Heart Disease Prediction — View Demo — <i>Python, NumPy, Matplotlib, Kaggle, Git</i>	Oct. 2023 – Nov. 2023
<ul style="list-style-type: none">Programmed a Logistic Regression classifier from scratch using NumPy, implementing gradient descent and sigmoid activation functions to achieve 92% predictive accuracy on heart disease datasets.Optimized computational throughput by vectorizing training logic with NumPy matrix operations, reducing training latency and enabling real-time visualization of cost function convergence.	