Ayaan Desai

905-921-5153 | Desaiayaan918@gmail.com | LinkedIn

Education

Biomedical Engineering Undergraduate (CO-OP) September 2024 - April 2029
Toronto Metropolitan University *Toronto, ON*

Related Courses January 2025 – Present
Toronto Metropolitan University *Toronto, ON*
Electric Circuit Analysis, Computer Programming, Statics and Mechanics of Materials, Digital Systems, Biomedical Physics

Skills

Technical Skills

- Programming: C/C++ (proficient), Python (learning), MATLAB (basic)
- CAD and Design: Fusion360 (proficient), SolidWorks (Proficient), 3D modeling, prototyping
- Manufacturing and Production: Automated systems operation, process optimization, sensor data analysis
- Medical device technology, healthcare compliance, product development
- Electrical / Mechanical Systems: Circuit analysis, Digital Logic (CMOS/FPGA), Microcontroller/Hardware integration

Soft Skills

- Technical Communication: Ability to explain complex engineering concepts in clear, concise terms
- Leadership and Teamwork: Collaborated with multidisciplinary teams in engineering and healthcare settings
- Problem-Solving / Analytical Thinking: Experience troubleshooting automated systems and optimizing processes
- Attention to Detail: Developed through engineering projects, pharmacy assistance, and production analysis

Experience

Summer Production Engineering Student May 2025 – August 2025
Hartmann Canada *Brantford, ON*

- Operated and optimized automated manufacturing equipment to ensure high efficiency and product quality.
- Analyzed sensor data and panel indicators to detect and troubleshoot mechanical or process inefficiencies.
- Assisted in implementing improvements utilizing engineering principles to enhance productivity.
- Worked collaboratively with a multidisciplinary team, applying problem-solving and critical thinking to address production challenges.

Pharmacy Assistant December 2023 – August 2024
U.G.M Pharmacy *Hamilton, ON*

- Assisted in the packaging and organization of over 100 prescriptions daily with high accuracy.
- Created compliance plans for elderly patients, ensuring medication adherence.
- Thrived in a high-pressure environment, maintaining precision and attention to detail.

Projects

3D LiDAR Scanner | *CAD, C++, Electrical Systems* January 2025 – March 2025

- Designed and built a 3D LiDAR scanner from scratch using CAD software and 3D printing for structural components
- Integrated LiDAR sensor technology with C++ programming to capture and process 3D spatial data
- Developed software for real-time mapping and visualization, improving scanning accuracy and efficiency
- Demonstrated the scanner's ability to generate high-resolution 3D models for engineering applications

Custom-Built Drone | *CAD, C++, Troubleshooting* October 2024 – December 2024

- Designed and built a functional drone using Fusion360 for CAD modeling and 3D printing components.
- Programmed the drone's flight system using C++, enabling precise maneuverability and automated functions.
- Gained hands-on experience with electrical wiring, sensor integration, and troubleshooting
- Successfully demonstrated the drone's capabilities in a series of test flights, showcasing problem-solving and innovation skills

Prosthetic Hand with EMG Sensor Control | *CAD, C++, Electrical Systems* August 2025 – Present

- Designing to build a functional 3D-printed prosthetic hand controlled via forearm EMG signals, integrating ESP8266 microcontroller, servo motor, and custom Arduino code.
- Aiming to achieve 95 percent signal-to-movement accuracy in controlled tests by filtering and amplifying EMG signals for reliable motor actuation.
- Reduce response latency to 150 ms, enabling near-real-time muscle-driven control.
- Optimize 3D-printed components to lower material use by 30 percent while maintaining structural integrity.