Spencer Osborn

B. A. Sc (Mathematics and Engineering) Candidate
Queen's University

1+ 2896810801
spencer.osborn@queensu.ca
Splendero
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Education

Bachelor of Applied Science in Mathematics and Engineering (Communications and Computing) *2022-26*

Core concepts from both Computer Engineering and Applied Mathematics taught within the department of engineering.

Work Experience

Artificial Intelligence Software Engineering Intern *May 2025 - 2026*

Novari Health

- Contributed to the development of Intelligent Document Processing (IDP) and Auto-Protocolling tools, using Azure and open-source frameworks to integrate AI capabilities into Novari Health's software suite.
- Built and maintained internal metrics and monitoring tools for real time performance analysis of IDP and Auto-Protocolling systems, with outage and under performance alerting.
- Led the launch of IDP v3, redesigning the system to reduce dependencies and cut cloud costs by 82%, leveraging open-source frameworks such as OpenCV and Tesseract.

Software Engineering Intern *November 2024 - May 2025*

Limestone Analytics

- Built Python scripts to efficiently filter, sort, analyze, and update millions of rows of data, streamlining workflows and enabling timely, data-driven insights, using google sheets workflows.
- Developed a lightweight repository system to organize and manage data analysis tools, enabling better software reuse and version control.

Design Team Experience

Director of Perception & Head of Navis *September 2024 - Current*

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- Leading a team of 6 in the development of an Autonomous Surface Vessel for the international RoboBoat competition, overseeing system integration and testing.
- Developed a lightweight, real time object detection system using OpenCV and ROS2 on an NVIDIA Jetson Nano, achieving 15 FPS while maintaining full external system functionality.

Director of Competitions & Infrastructure *September 2023 - May 2025*

Smith Engineering Hyperloop Design Team

- Coordinating Hyperloop Global, North America's largest Hyperloop competition, resulting in an increase in participating teams by 20% & reducing overall competition cost by 45%.
- Leading a team of 8 to research & develop a magnetic levitation hyperloop track for the QHDT hyperloop pod.

Personal Projects

1st Place in the Next Generation Medical Simulation Hackathon *February 2024*

- Engineered a neck brace to indicate patient movement to first responders for performing intubation & c-spines.
- Used sensor data to model the position and acceleration of the patient's neck to ensure proper practitioner technique.

Multimodal Agent Malaria Spread Simulation *September 2024*

- Designed a multimodal agent simulation of the spread of malaria in various environments using Loyd's Algorithm to predict the movement of the agents.
- Analysed and located potential high transition areas for current & future infrastructure development considerations.

Technical Skills and Interests

Languages: Java, Python, C/C++, C#, HTML, Javascript, PHP, MATLAB, LaTeX.
Libraries: Numpy, OpenCV, Pandas, TensorFlow, Tesseract.
Software : Azure, MS Office, GitHub, Linux, AutoCAD, SOLIDWORKS, SLAM, Arduino, ROS2.
Relevant Course Work: Real Analysis II, Algorithms, Control System, Probability II, Engineering Design & Practice III, Object Oriented Programming, Complex Analysis, Linear Algebra II.
Interests : Climbing, Volleyball, Cycling, Desiging & Creating rugs, Squash