# Shashwat Murawala

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## Education

**University of Waterloo** Sept. 2022 – May 2027

Bachelor of Computer Science, Honours, Co-op with President's Scholarship of Distinction

*Computer Science and Psychology Joint Major with Cognitive Science and Economics Minor*

## Experience

**Software Engineer** May. 2025 – Aug, 2025

*Rocket Lab* *Auckland, New Zealand*

- Implemented an active pinging system to continuously monitor infrastructure availability across multiple facilities, feeding real-time status data into centralized monitoring tools.
- Developed a four-level Grafana dashboard that visualizes system health across all sites, automatically highlighting outages with red status panels for instant fault detection.
- Contributed to the development of a custom serialization package and optimized its encoder and decoder, reducing per-operation time by 25% and 80% respectively.
- Contributed to the development of a high-performance internal messaging and streaming service, achieving 80% faster throughput compared to NATS for internal use cases.
- Developed and implemented a C# WPF desktop application for real-time data visualization and animated overlays, used in Rocket Lab's YouTube livestreams during launches to display data and key milestones.

**Software Developer** May 2024 – Dec. 2024

*Dayforce* *Toronto, Ontario*

- Designed and implemented a scalable streaming application architecture, supporting 500K+ concurrent users and delivering real-time data processing for seamless user experiences.
- Collaborated on the migration from MongoDB to CosmosDB, improving data storage efficiency, enabling real-time analytics, and reducing system latency by 20%.
- Developed and implemented end-to-end integration testing for the Hyperscale Next-Gen application, ensuring reliability, identifying critical bugs early, and reducing QA cycles by 20%.
- Enhanced system security and functionality by upgrading all JavaScript frameworks and libraries, eliminating bugs and enabling safer, more secure data handling.
- Supported and contributed to the development of a Kafka-based system as part of the Hyperscale project, which increased data processing capacity by 60% and reduced processing time by 40%.
- Remediated 250+ security vulnerabilities identified by Veracode and SonarQube, ensuring compliance with industry standards and improving application security and code quality by 35%.
- Developed automation code to build 100+ pipelines, Kubernetes clusters, and cloud infrastructure, streamlining deployment processes and achieving an 85% improvement in performance throughout the application.
- Refactored and optimized existing C#/.NET codebases, enhancing performance by 30%, maintainability, and scalability by applying SOLID principles and reducing technical debt by 40%.

**Data Analyst** May 2023 – Aug. 2023

*JANA Corporation* *Aurora, Ontario*

- Developed a tool in Python, resulting in a 40% reduction in manual data processing efforts.
- Conducted in-depth data analysis for SIMP-CRA Model resulting in a 25% increase in data retrieval and processing speed, leveraging Python and SQL.
- Automated ETL processes for MidAmerican TIMP, reducing data processing time by approximately 30% and improving overall efficiency.

## Projects

**Pathfinding Visualizer** | *JavaScript, React, HTML, CSS*

- Developed a dynamic visualization tool for multiple pathfinding algorithms.
- Implemented an intuitive user interface to display the progression of algorithms in real time.

## Skills

**Developer Tools**: Git, Kubernetes, Apache Kafka, MongoDB Compass, Postman, IntelliJ IDEA, Docker, SSMS
**Languages**: C++/C#, Go, Python, SQL, C, JavaScript, TypeScript, Kotlin, HTML/CSS, Java, Bash, Racket, Swift, R
**Libraries & Frameworks**: React, jQuery, pandas, OpenCV, NumPy, Angular, Express, Bootstrap, TensorFlow, Flask