# Nathan Janit

416-529-3108 njanit@uwaterloo.ca github.com/Nate457

## Skills

**Programming**: Python, C++, C, Java, JavaScript, Rust, PHP, Ruby

**Software & Tools**: Kubernetes, Git, React, MySQL, Power BI, Omniverse

**Machine Learning & Quantum**: PyTorch, TensorFlow, PennyLane, OpenCV, Huggingface, Fast API

## Experience

**Ergo Advantage Inc.** — **Software Developer** **Jan 2026 – Apr 2026**

- Engineered a **cross-platform spatial design application** for **iOS, Android, and Web** using **Flutter** and **Dart**, integrating a **Firebase backend** for real-time cloud synchronization and secure user authentication.
- Developed complex **2D/3D computational geometry algorithms** for custom collision detection, polygon boundary calculations, and automated **flood-fill pathfinding** to enable intelligent tile placement.
- Integrated an interactive **3D graphics viewer** for spatial design rendering, implementing robust state management and custom **undo/redo stacks** to ensure a seamless user experience.

**Eclipse Automation** — **Software Developer** **Jan 2025 – April 2025**

- Designed and iterated on user-facing **Omniverse workflows**, extending viewport functionality with **custom Kit extensions** in Python/C++, improving developer productivity by **25%**.
- Debugged and optimized a **web-based USD conversion pipeline**, reducing error rates and downtime by **80%**.
- Created high-fidelity **3D animations** of industrial machines in **Blender** and **SolidWorks**, integrating assets into Omniverse for real-time rendering.

**Varicent** — **Data Engineering & Analytics Intern** **May 2024 – August 2024**

- Developed a **computer vision workflow** to automate bank reconciliation, reducing manual matching by **85%** and accelerating month-end closing processes.
- Programmed a **data pipeline** using Excel and web scraping scripts to extract financial filings, enabling **real-time insights** and eliminating hours of manual data collection per week.

**Silver Owl Robotics** — **Software Developer** **May 2021 – Present**

- Developed and deployed **robot tracking algorithms** integrating **computer vision** pipelines with **Monte Carlo localization**, achieving a **30% improvement in positional accuracy** in dynamic test environments.
- Engineered a **full-stack web platform** with **PHP** and **MySQL**, including plugins for secure user authentication and real-time data retrieval, supporting **100+ concurrent users** and processing **$200K+ in transactions**.

## Projects

**Catan** | *C++, Git* **November 2025 - December 2025**

- Designed a multiplayer game of Catan in base C++ which would run on a remote Linux server.
- The game was programmed as part of a group project. Involving only the standard library for graphics and processing input from multiple devices.

**Real-Time Automated Scoring** | *Kubernetes, Rust, JavaScript, DeepStream* **Mar 2025 – Present**

- Engineered a containerized web application to autonomously score robotics competitions, leveraging **Rust microservices** on **Kubernetes** for scalable, low-latency performance.
- Built a multi-camera **object tracking pipeline** to reconstruct a virtual twin of the field, enabling real-time event monitoring and data visualization.

**UWAT VEXU** | *C++, Autodesk, Git* **Dec 2023 – May 2024**

- Implemented closed-loop and predictive control algorithms to stabilize voltage and reduce angular drift by **15%**.
- Integrated a **Pure Pursuit algorithm**, improving autonomous navigation accuracy by **20%**.

## Education

**University of Waterloo** — **Bachelor of Computer Science**

**Wilfrid Laurier University** — **Bachelor of Business Administration**