

UJJVAL RAJPUT

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Education

University of Toronto

June 2026 (with **PEY Co-op**)

Honours Bachelor of Science - Computer Science and Technology, Coding, & Society

- **Courses:** Software Design, Systems Programming, Algorithms, Data Structures, Operating Systems. **GPA: 3.49**

Work Experience

Lumentum

Ottawa, ON

Software Engineering Intern - Process Automation

April 2025 – Aug 2025

- Modernized an **internal test framework** supporting 200+ engineering projects, driving consistency and scalability across teams.
- Redesigned a cross-platform operator tool using **React (TypeScript)**, **Rust**, and **Tauri**, integrating backend services via **gRPC** to deliver real-time recipe execution and dynamic file rendering (images, PDFs).
- Implemented **integration testing** with mock layers to validate system behavior prior to production, ensuring high-quality architecture and reliability.
- Enhanced CI/CD pipelines with secure OAuth2 authentication and automated artifact management, improving developer velocity and release traceability across teams.

Lumentum

Ottawa, ON

Software Engineering Intern - Metrology

Jan 2025 – April 2025

- Led the end-to-end design and implementation of a **multi-threaded** event-driven system in **Rust** to replace polling, drastically improving GUI responsiveness and synchronizing real-time sensor interactions with low latency.
- Devised a real-time sensor metrics dashboard in **React (TypeScript)**, **gRPC** and **Protobuf** for live data streaming and visualization, with seamless CLI-based headless access for advanced operator workflows.
- Implemented a caching strategy to significantly accelerate the processing and rendering of **million-point cloud** datasets, improving throughput and reducing latency in high-resolution **3D visualizations**.

Concur

Remote

Software Engineering Intern

July 2024 – Oct 2024

- Engineered JavaScript obfuscation techniques to enhance **SDK security**, leading to increased protection against unauthorized access and ensuring compliance with industry standards.
- Developed core **React** components for the Concur web platform, elevating UX in collaboration with the design team.

University of Toronto

Toronto, ON

FSG Leader, CSC108 - Computer Programming

Aug 2023 – Dec 2023

- Led sessions in **Python**, focused on **data structures** and **algorithmic efficiency**, troubleshooting, and debugging, resulting in an average **grade increase of 15%**.

Projects

PortaByte 🔗

- Developed a secure, cloud-based web app to add, save, and share any files with **AWS S3** and **MERN Stack (Next.js, TypeScript, MongoDB)**, featuring **JWT auth**, **Redux** state management, and **RESTful APIs** tested via Postman.

Mini-Shell 🔗

- Implemented a Unix shell in **C** with job control, signal handling, and process pipelines. Implemented command parsing, built-in commands (quit, fg, bg, jobs), using **Unix system calls**, **shell scripting (Bash)**, and **Makefile** for automation.

A-MazeMe 🔗

- Directed a **Java**-based interactive maze game using **MVC** architecture and **JavaFX** tested with **JUnit**, enhancing user engagement. Applied design patterns, UML, Agile (Scrum), and Git throughout the SDLC.

TakeOnAI 🔗

- Led sentiment analysis in **Python** on AI discourse across a large dataset fetched from **NYT API** and **GitHub GraphQL**. Employed **NumPy**, **Scikit-Learn**, and **NLTK** for opinion mining; visualized findings with **Matplotlib**.

Skills

Languages: Python, Java, Rust, TypeScript, JavaScript, SQL, Assembly, GraphQL, C, C#

Technologies: React.js, Node.js, Express.js, gRPC, Protobuf, MongoDB, PostgreSQL, AWS S3

Other: Git, Linux/Unix, Docker