Prem Patel

416-526-9566 | p352pate@uwaterloo.ca | prempatel149 | prem-pxtel

Technical Skills

Languages: C/C++, C#, Python, Java, JavaScript, SQL, Kotlin, TypeScript, Bash, Swift, Racket, R, HTML/CSS
Developer Tools: Git, Bitbucket, Visual Studio, VS Code, Jenkins, Jira, Confluence, Azure, AWS, Node.js, Vim
Frameworks & Libraries: .NET, React, Flutter, Firebase, Pandas, NumPy, PyTorch, Matplotlib, Tabula, Compose

Education

University of Waterloo — Waterloo, ON
Honours Bachelor of Computer Science (BCS) — *Sep. 2021 – Aug. 2026*
- Coursework: Data Structures, Algorithms, Object-Oriented Programming, Machine Learning, Operating Systems, Computer Architecture, Designing Functional Programs; GPA: 3.7

Wilfrid Laurier University — Waterloo, ON
Honours Bachelor of Business Administration (BBA) — *Sep. 2021 – Aug. 2026*
- On-Campus Roles: Student Success Tutor, Writing Services

Experience

Software Developer Intern — Jan. 2025 – Aug. 2025
Kinaxis — *Ottawa, ON*
- Developed backend features for the Embedded Algorithms team in **C++** using **Visual Studio**, with **C# unit**, **integration**, and custom **query-level tests**; shared outcomes in **Kanban**-style meetings and cross-team **demos**
- Designed **optimization guardrails** by implementing server-side and optimizer-side constraints, preventing resource overuse and improving **robustness** during large-scale runs; used **debugging tools** to resolve issues like **lock contention** and **logging inefficiencies**
- Built a configurable **performance testing framework** in **C#**, simulating diverse optimization workloads to benchmark and profile pipeline stages with metrics like queue times, calculation durations, and optimizer latency
- Ran "**Optimization Live Fire**" scenarios, executing **stress tests** with simultaneous triggers to evaluate **server scalability** and uncover **bottlenecks**, contributing to system performance improvements

Software Engineering Intern — Jan. 2024 – May. 2024
AutoTrader — *Toronto, ON*
- Developed and optimized **Python** programs to efficiently extract OEM data using **Pandas** for seamless integration with a **REST API**, improving process speeds by **8x** for brands like Toyota, BMW, and others
- Engineered **Azure** pipelines with **Python** to dynamically generate and deliver monthly performance reports to **150+** dealerships; queried data from **Redash** and held responsibility for select dealer groups
- Optimized **data processing** algorithms using the **Tabula** library to significantly reduce manual effort and errors in the extraction process, savings hours of time each month and increasing data accuracy by up to **85%**
- Led new hire **training** and promoted clear communication with effective **documentation** and **version control**

Projects

Hairstylist Review Application (Android) — Sep. 2024 – Dec. 2024
- Developed a barber review app using **Kotlin** with **Compose UI** and **Gradle** build tool, following **MVVM architecture**, allowing users to find a specialized barber based on factors like sociability and timeliness
- Integrated **Google Places API** for barbershop data, along with **Firebase authentication** and **cloud database storage** for scalable data management
- Followed **Scrum** sprints and recorded **user stories** for feature development, with **GitLab** version control

Predicting Plant Traits Using CNNs and Boosting — Jul. 2024 – Aug. 2024
- Designed and implemented a **PyTorch** machine learning pipeline using **ResNet50 CNN** and **XGBoost** to predict vital plant traits from images and ancillary data
- Performed extensive **data preprocessing** and explored different model architectures to improve generalization
- Applied **Bayesian optimization** to fine-tune models, ultimately improving baseline model performance by **192%**

Awards

Wilfrid Laurier President's Gold Scholarship of $4,000 for an overall admission average of 98% — May 2021
Honour Roll with IB Diploma (Score: 40/45), Sir Wilfrid Laurier Collegiate Institute — 2017 – 2021