Prem Patel

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Technical Skills

Languages: C/C++, Python, Java, JavaScript, SQL, Kotlin, Bash, Swift, Racket, R, HTML/CSS
Developer Tools: Git, Azure, AWS, VS Code, Node.js, IntelliJ IDEA, Vim, SSH, R Studio, Gradle, Postman
Frameworks and Libraries: React, Flutter, Taipy, Pandas, NumPy, PyTorch, Matplotlib, Compose, Firebase, .NET

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 (Excellent Standing)

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 Engineering Intern Jan. 2024 – May. 2024
AutoTrader *Toronto, ON*
- Developed **Python** automation scripts to efficiently extract and map OEM program data (originally in PDF format) for seamless integration with a **REST API**, improving process speeds by **8x**
- Leveraged **Azure** Pipelines and **Python** to automate the generation/sending of monthly performance reports to **150+** dealerships, using **Redash** query data; took sole responsibility over select dealer groups
- Effectively resolved client concerns by analyzing ambiguous problem descriptions, conducting thorough investigations, and delivering precise solutions within **demanding timelines**
- Prioritized **clear communication** through new hire training, ongoing documentation and effective version control

Projects

Hairstylist Review Application (Android) Sep. 2024 – Present
- Developing 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
- Following **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%**

Compiler and Assembler for a C-like Language Jun. 2023 – Aug. 2023
- Implemented tokenization, parsing, type-checking, and code generation for compilation of WLP4, a high-level programming language that uses the C syntax; programmed in **C++**
- Developed an assembler for translating **MIPS** assembly into low-level machine code
- Applied algorithms such as Top-Down Parsing and Maximal Munch, along with post-order traversal of parse trees

AccChecky Web App (HackThe6ix Winner) Aug. 2023
- Created a web application for analyzing **website accessibility** using the Taipy **Python** library
- Integrated the **Wave API** to collect accessibility data and visualized key metrics in real time using **Taipy GUI**
- Received the ***Best Use of Taipy*** award at HackThe6ix after pitching our app to four judges

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