

# Prem Patel

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## EDUCATION

<b>University of Waterloo</b> <i>Honours Bachelor of Computer Science (BCS)</i>	Waterloo, ON Expected Dec. 2026
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## EXPERIENCE

<b>Software Engineer Intern</b> <i>Kinaxis</i>	Jan. 2025 – Present Ottawa, ON
<ul style="list-style-type: none"><li>Implemented backend features in a <b>distributed C++ server</b> coordinating <b>TypeScript (Node.js)</b> and <b>Java</b> agent/worker runtimes (Embedded Algorithms team)</li><li>Shipped user-facing enhancements and a custom <b>VS Code extension</b> using <b>WebSockets</b> to run and debug user-defined <b>embedded algorithms</b></li><li>Designed thread-safe server/optimizer <b>guardrails</b> to prevent resource overuse on large runs; improved stability and cut lock contention by <b>30%</b> while rolling out a "Bring Your Own Model" optimization feature</li><li>Extended <b>Jenkins AFT CI/CD</b> with unit, integration, and E2E coverage; built a <b>C#</b> benchmarking harness (bursty/steady) with metrics aggregation and latency profiling across an async queue</li><li>Deployed agent services on <b>Kubernetes</b> via <b>Docker + Helm (Azure/GCP)</b>; integrated a new logging schema with <b>Datadog</b> dashboards to support consumption-based pricing</li><li>Enabled multi-agent configurations for the Java runtime container; improved agent-response serialization using <b>FlatBuffers</b> and shipped a new logger module</li><li>Presented <b>15</b> cross-team demos showcasing design decisions and outcomes in a fast-paced <b>Kanban</b> environment</li></ul>	
<b>Software Engineer Intern</b> <i>AutoTrader</i>	Jan. 2024 – May 2024 Toronto, ON
<ul style="list-style-type: none"><li>Developed and optimized <b>Python microservices</b> across <b>30+ automotive brands</b>, leveraging <b>Pandas</b> and a <b>REST API</b> to accelerate OEM data processing by <b>8x</b> for partners like Toyota and BMW</li><li>Engineered <b>Azure pipelines in Python</b> to automatically generate and deliver monthly performance reports to <b>150+ dealerships</b>, querying data from <b>Redash</b> and managing reporting for select dealer groups</li><li>Optimized data processing algorithms with the <b>Tabula</b> library, cutting manual work, saving hours each month, and increasing data accuracy by up to <b>85%</b></li><li>Led new hire <b>training</b>, mentoring a new full-time employee and interns, and improved team onboarding</li></ul>	
<b>Data Engineer Intern</b> <i>D2L</i>	Jan. 2023 – Apr. 2023 Waterloo, ON
<ul style="list-style-type: none"><li>Consolidated contacts from multiple sources into a Salesforce single source of truth; deduplicated and standardized records, expanding the prospect universe by <b>30%</b> and improving lead routing</li></ul>	

## PROJECTS

<b>NBA Analytics Dashboard (Full-Stack Web App)</b>	May 2025 – Jul. 2025
<ul style="list-style-type: none"><li>Used <b>React</b>, <b>Flask (Python)</b>, and <b>PostgreSQL</b> to visualize NBA player and team performance</li><li>Designed and optimized SQL queries, materialized views, and indexes for scalable reads (~2–3x); implemented role-based auth and triggers for secure access and audit logging</li></ul>	
<b>Barber Review Mobile App (Android/Kotlin)</b>	Sep 2024 – Dec 2024
<ul style="list-style-type: none"><li>Developed an <b>Android mobile app</b> using <b>Kotlin</b>, <b>Compose UI</b>, and <b>MVVM architecture</b> to connect with barbers based on user-centric traits such as sociability and hairstyle specialty; followed <b>Scrum</b> sprints</li><li>Integrated the <b>Google Places API</b> for barbershop data, along with <b>Firebase auth</b> and <b>cloud database storage</b> for secure, scalable data management</li></ul>	
<b>Predicting Plant Traits Using CNNs and Boosting</b>	Jul. 2024 – Aug. 2024
<ul style="list-style-type: none"><li>Designed and implemented a <b>PyTorch</b> plant trait prediction pipeline using <b>ResNet50 CNN</b> and <b>XGBoost</b></li><li>Applied <b>Bayesian optimization</b> to fine-tune models, ultimately improving baseline model performance by <b>192%</b></li></ul>	

## TECHNICAL SKILLS

**Languages:** C++, Python, C, Java, C#, TypeScript (JavaScript), Go, CMake, SQL, Bash, Kotlin, R, HTML/CSS  
**Developer Tools:** Git, VS/VS Code, Node.js, Yarn, Maven, CMake, Jenkins, Docker, Helm, GCP, Azure, gtest, Jest  
**Frameworks & Libraries:** React, Flask, FastAPI, .NET, Spring Boot, Pandas, NumPy, PyTorch, Boost.Lockfree