Parth Joshi

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Education

Western University — London, Ontario
Bachelor of Science in Computer Science (BCompSc), Minor in Math — *Sept 2024 – Apr 2028*

Skills & Interests

Languages: Python, Java, JavaScript, TypeScript, HTML/CSS, Swift, SQL, C
Data & Analytics: Power BI, Tableau, Excel (Advanced), SQL/SQL Server, Python (pandas, NumPy)
Frameworks & Tools: FastAPI, TensorFlow, SwiftUI, Git, REST APIs, Power Platform, Twilio API
Developer Tools: GitHub, VS Code, Xcode, unit testing, integration testing
Interests: Data Visualization, Business Intelligence, Algorithms, Machine Learning, Chess

Experience

Technical Specialist I — May 2025 – Present
Tetra Tech – Bruce Power Site — *Tiverton, ON*

- Developed interactive Power BI dashboards and reports to visualize engineering KPIs, project timelines, and resource allocation across **10+ teams**, enabling data-driven decision-making for stakeholders
- Configured Power Apps automation solutions and implemented custom business logic to streamline engineering workflows reducing manual processing time by **30%**
- Engineered automated validation logic in Power Platform to enforce schema compliance, eliminating manual entry discrepancies and ensuring data integrity for safety-critical nuclear documentation
- Performed end-to-end quality assurance testing (functional, integration, regression) on interconnected automation systems to ensure reliability in a highly regulated environment

Math Instructor — Aug 2023 – Aug 2024
Mathnasium — *Waterdown, ON*

- Analyzed student performance data to identify learning patterns and gaps, designing individualized problem-solving plans that improved accuracy and retention across core math topics
- Developed structured learning roadmaps with measurable milestones, enabling students to track progress and consistently achieve higher assessment scores over multi-week cycles

Projects

Maple Sap Flow Prediction | *Python, FastAPI, HTML/CSS/JavaScript, APIs* | GitHub — Nov 2025

- Developed full-stack web application analyzing **500K+ geospatial datapoints** to forecast maple sap-flow windows, winning BramHacks 2025 ($400 prize) through effective data storytelling and visualization
- Built Python data pipeline to process **20+ years** of time-series data from NASA Earth Engine APIs, implementing feature engineering, trend analysis and normalization algorithms to generate training data for predictive models
- Developed rolling-window inference engine using historical data analysis, reducing prediction noise and improving temporal **stability by 40%** through statistical modeling techniques

AI Appointment Follow-Up System | *Python, FastAPI, SQL, React, JavaScript, WebSockets* | GitHub — Jan 2026

- Designed and built an AI-powered outbound calling system that automates nurse-led appointment confirmations and rescheduling using natural voice interactions.
- Implemented real-time speech processing and WebSocket-based communication to extract structured scheduling data from live patient conversations.
- Developed a full-stack interface using React and Supabase backed by SQL to manage patients, appointments, and call outcomes for nurse review.

Chess Engine | *Python, Game Tree Search, Alpha-Beta Pruning* | GitHub — Jan 2026

- Achieved ∼**2000 Elo** by analyzing position patterns and implementing alpha-beta pruning with quiescence search, demonstrating data-driven optimization and algorithmic problem-solving
- Optimized search performance through MVV-LVA move ordering and incremental evaluation updates during make/unmake operations, reaching 4-6 ply search depth at **10-25k nodes/second**
- Built complete chess engine with all special moves (castling, en passant, promotion) and draw conditions (stalemate, repetition, 50-move rule)