

HARSH UPADHYAY

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Education

McMaster University

Honours Computer Science Co-op (B.A.Sc.)

Hamilton, ON

- Presidents entrance scholarship valued at \$5000 for incoming students with above an 96% average in high school
- Relevant Coursework: Applied Cryptography, Fundamentals of Machine Learning , Principles of Programming Languages, Operating Systems, Concurrent Systems, Data Structures and Algorithms, Databases.

Technical Skills

Programming Languages: Python, JavaScript, TypeScript, C, C++, C#, Java, SQL, Haskell, Elm, HTML, CSS

Technologies: React.js, Next.js, Node.js, AngularJS, .NET, Django, Tailwind, PyTorch, TensorFlow, OpenCV, DeepFace

Tools: Git, GitHub, Docker, JUnit, Cloudflare, PostgreSQL, MongoDB, APIs, Postman, Jira, Agile/Scrum, Linux, CI/CD

Experience

Government of Ontario – MPBSDP

May 2025 – December 2025

Business Analyst Co-op

North York, Ontario

- Enhanced Match and Merge Automation by raising automated throughput from **30% to 70%** through leading **Agile grooming/refinement**, translating BRs into technical tasks, and delivering implementation-ready **Jira** user stories.
- Validated system functionality by executing **REST API** and third-party interface tests using **Postman**, simulating scenarios to reproduce issues, identify defects, and ensure compliance with business rules.
- Used **SQL** and advanced analysis to assess postal code mapping reliability by comparing current records with historical data and GeoJSON boundaries, identifying discrepancies and evaluating **migration feasibility** for enhancements.

Sciencious - United Arab Emirates

April 2022 – August 2022

Frontend Developer

Dubai, UAE

- Led the design and deployment of the companies website using **Next.js**, resulting in a **20%** increase in user engagement. Focused on delivering a responsive, user-centric interface with seamless cross-platform compatibility.
- Implemented **RESTful APIs** and optimized SQL database integrations using **PostgreSQL** to streamline data flow, enhancing system scalability and enabling real-time reporting for internal teams.
- Collaborated with cross-functional teams to design and integrate web applications, enhancing both internal and customer-facing projects.

Projects

🔗 Workout Tracker | *Next.js, TypeScript, Tailwind CSS, PostgreSQL, Prisma, NextAuth.js, REST API* July 2025

- Built a full-stack fitness tracker with Next.js, TypeScript, and Tailwind CSS, featuring reusable UI components, authentication, and responsive design.
- Developed a PostgreSQL backend with Prisma ORM to manage workout logs and progress tracking, leveraging API routes and server-side rendering for efficient data handling.

🔗 Personal Portfolio Website | *HTML, CSS, Javascript, NextJS, Swiper API, EmailJS* February 2024

- Developed a dynamic and responsive portfolio website using **Next.js**, showcasing projects, skills, and accomplishments, while optimizing for performance and cross-browser compatibility.
- Enhanced user experience by designing an engaging UI with **Tailwind CSS** and adding smooth animations via **Framer Motion**, increasing user engagement.
- Integrated **EmailJS** for seamless communication, enabling efficient handling of user inquiries and improving overall site interactivity.

🔗 ActiveTrack | *Python, Jupyter Notebook* December 2023

- Developed Python scripts to process accelerometer/gyroscope sensor data, generating insightful visualizations, building ML models, and accurately **classifying barbell exercises** while counting repetitions.
- Achieved **98.9%** classification accuracy by applying outlier detection techniques like **Chauvenet's Criterion**, advanced feature engineering, and optimized predictive modeling.
- Designed a **LowPassFilter-based** signal processing function for precise repetition counting, showcasing expertise in signal processing and fitness data analysis.

🔗 EchoSphere | *Python, speech recognition, BeautifulSoup* December 2023

- Developed a modular Python-based **voice assistant** using SpeechRecognition, text-to-speech, API integrations, and HTML parsing (BeautifulSoup) to automate system tasks and deliver dynamic responses.
- Implemented features like **YouTube/app control, WhatsApp messaging, web search automation, news retrieval, and weather reporting** using structured command mapping and extensible intent-processing logic.