JEESHAAN SINGH BAKSHI

Computer Science Co-op Student | Software Engineering | Full-Stack | ML
Waterloo, ON, Canada | jeeshaanbakshi@gmail.com | LinkedIn

EDUCATION

University of Waterloo Waterloo, ON, Canada
Honours Bachelor of Computer Science, Co-op Sept 2026 – Expected 2031
Relevant Coursework: CS 135 (Designing Functional Programs), MATH 135 (Algebra for Honours Mathematics), MATH 137 (Calculus 1 for Honours Mathematics), ECON 101 (Microeconomics)

EXPERIENCE

Data Science Intern | Savvy Data Cloud Consulting UAE | 2025

- Cleaned and standardized a 1,215-record automotive dataset in Python (pandas), preparing it for analysis and modeling.
- Estimated missing vehicle attributes using linear regression and decision-tree models built with scikit-learn.
- Retrieved supplementary vehicle data from web REST APIs to fill gaps in the dataset.
- Built an interactive Looker Studio dashboard used to present findings in a client presentation.

PROJECTS

CourseMate | Next.js, Supabase, PostgreSQL, Vercel In Progress

- Building a study-group discovery platform that connects University of Waterloo students taking the same courses.
- Implementing email authentication and a PostgreSQL data model (profiles, courses, groups, memberships) with Supabase.
- Enforcing authorization at the database layer with PostgreSQL row-level security (RLS) policies instead of client-side checks.

RAG Retrieval System | Python, SentenceTransformers, NumPy 2026

- Built a semantic retrieval pipeline that splits documents into overlapping chunks and encodes them as 384-dimensional embeddings with all-MiniLM-L6-v2.
- Ranked chunks against query embeddings using cosine similarity in NumPy and returned the top-k passages as grounding context.
- Tuned chunk size and overlap to balance context completeness against retrieval relevance.

Personal Portfolio with Semantic Search | Next.js, React, Tailwind CSS, transformers.js, Vercel 2026

- Embedded 40+ content passages with all-MiniLM-L6-v2 at build time and projected them to 2D with PCA to render an interactive map of related work.
- Implemented fully client-side semantic search with transformers.js, embedding visitor queries in the browser with no backend or LLM API calls.
- Generated the downloadable resume from the same structured data as the website to keep both in sync.

Bluetooth-Controlled Arduino Car | Arduino, C++, HC-05 Bluetooth 2025

- Designed the circuit and wrote C++ firmware for an Arduino car controlled from a smartphone app over Bluetooth.
- Diagnosed hardware and connectivity failures through systematic component testing to achieve reliable control.

TECHNICAL SKILLS

Languages: Python, JavaScript, C++, SQL, Racket, HTML, CSS
Web Development: React, Next.js, Tailwind CSS, Supabase, PostgreSQL, REST APIs
AI/ML and Data: RAG, SentenceTransformers, transformers.js, Embeddings, Semantic Search, PCA, scikit-learn, pandas, NumPy, Matplotlib
Embedded Systems: Arduino Uno, ESP32, ESP8266, RFID, HC-SR04, I2C
Developer Tools: Git, GitHub, VS Code, PyCharm, Jupyter Notebook, Google Colab, Looker Studio, Vercel

AWARDS AND LEADERSHIP

- **AMO Gold Medal**, American Mathematics Olympiad (2024)
- **All-India Rank 64, School Rank 1**, SOF International Mathematics Olympiad
- **SASMO Bronze Medal**, Singapore and Asian Schools Math Olympiad (2025)