Daniel He

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Education

Western University - BSc., Computer Science *September 2024 - May 2028 Expected*
With Admission Scholarship, Scholarship of Distinction ($2500)
Deans Honour List 2024-2025 (**3.93/4.00 GPA**)

Work Experience

Western University - Undergraduate Research Assistant *October 2025 - Present*
LLM Hallucination - Dr. Apurva Narayan

- Designed and implemented an LLM-as-a-judge benchmarking pipeline in **Python** with **Ollama** to evaluate hallucination rates across multiple **LLM**s, incorporating **Hyperparameter Tuning** and **Prompt Engineering**

Scotiabank - Developer 1 (Intern) *May 2025 - August 2025*
IT&S Capital Markets/Data Analytics

- Refactored a broken **Airflow** ETL pipeline to store vector embeddings in **ChromaDB** with persistence to **Google Cloud Storage**, migrating embedding logic into a Cloud Function triggered by the DAG. Cut p95 latency by ~90% and resolved a 6-month production issue and enabled scalable, modular AI workflows that support RAG for the bank's internal knowledge bot
- Enhanced internal research summarization pipeline by extending PDF parsing support from 2 to 4 document formats, automated deployment using **CI/CD** build configuration tools, and documented using Jira and Confluence
- Created a cyclomatic complexity analyzer using **Python** that clones repos, calls a SonarQube server using SonarQube CLI and uses Selenium to web scrape the scan results to present in a dashboard. Reduced end-to-end SonarQube complexity analysis process by ~85% (16:04 to 2:21)

Projects

Say Less (Devpost Link, Live-Demo) *November 2025*
Hack Trent 2025 - MLH Best Use of ElevenLabs (21 total submissions)

- Created a website that converts American Sign Language (ASL) to speech and speech to text in real time
- Spearheaded development of a **FastAPI** backend with **RESTful API** endpoints, integrating ElevenLabs, Gemini, and a fine tuned **MediaPipe** model (achieving ~80% accuracy on ASL to text). Containerized with **Docker** and deployed a production-ready server on **Render**

Mandarin Challenge Generator (Github Link, Live-Demo) *September 2025*

- Created a full stack website that allows users to generate questions that test their mandarin comprehension and writing skills using **Clerk** Authentication and OpenAI API
- Created using **HTML**, **CSS**, **JavaScript** (React.js), **FastAPI**, **SQLite**, deployed using **Vercel** and **Render**

The Fastest Root (Devpost Link, Live-Demo) *August 2024*
Ignition Hacks 2024 - 3rd Place Overall (400+ total participants)

- Created a website that uses a web-scraper to generate a user's most cost-efficient grocery route among their local grocery stores on google maps
- Designed backend algorithm for finding the most cost-efficient route using **Python** and **JavaScript**

Skills

Languages: Python, Java, JavaScript, TypeScript, C, SQL
Frameworks and Libraries: React, FastAPI, MediaPipe, Tensorflow, PyTorch, SQLAlchemy
Developer Tools: Docker, Git, Render, Vercel, GCP, Apache Airflow, ChromaDB, SonarQube, Selenium, Ollama, Linux
Databases: SQLite