Hassan Chaudhary

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Education

University of Alberta Sep. 2021 – Jun. 2026
BSc in Computer Science Specialization *Edmonton, AB*

Experience

Expert AI Contributor Sep. 2024 – Aug. 2026
Outlier *Remote*

- Evaluated 600+ multimodal LLM outputs across coding, reasoning, and STEM tasks, systematically documenting hallucination patterns and reasoning failures.
- Performed error analysis on edge-case responses drawn from datasets of 10,000+ labeled samples and fed findings back into supervised fine-tuning quality criteria.
- Designed and applied consistency checks across 10,000+ labeled samples that reduced inter-annotator disagreement and cut roughly 12 hours of rework per month.

Full-Stack Developer (Capstone) Jan. 2025 – Apr. 2025
University of Alberta, Department of Medicine *Edmonton, AB*

- Built an end-to-end ECG analysis web application that let clinicians upload scans and receive automated waveform analysis; supported 200+ test uploads during development and validation.
- Designed RESTful APIs (Flask + Django) that processed signal data from concurrent uploads and reduced average manual interpretation time from 5 minutes to 3 minutes per scan (30% reduction).
- Implemented Python signal-processing pipelines for waveform extraction and pattern matching that achieved 89% classification agreement on a clinical benchmark set.

Software Programmer Sep. 2023 – Dec. 2024
AlbertaSat *Edmonton, AB*

- Architected embedded flight and ground-system software in C/C++ for satellite subsystems with strict real-time constraints (less than 100 ms task scheduling).
- Built automated test frameworks (pytest + hardware mocks) and integrated them into CI/CD, raising unit + integration coverage from 55% to 80% and preventing two critical subsystem failures in pre-flight validation.
- Debugged 8+ mission-critical runtime faults via JTAG, cutting subsystem failure frequency by 70% and enabling 15+ consecutive successful attitude-determination and control test cycles.
- Delivered 3,000+ lines of production and test code for attitude determination, power management, and telemetry with zero critical defects found in final pre-flight validation.

Projects

Notely | *Next.js, React, TypeScript, Tailwind CSS, Convex, Clerk*

- Built a full-stack workspace for organizing notes and projects, implementing a block-based editor with real-time synchronization and persistent cloud storage using Convex.
- Integrated Clerk authentication and responsive UI components to provide secure, cross-device access to user workspaces and content.

ECG Scan | *Python, React, Flask, SQLite*

- Built a full-stack ECG analysis application with React and Flask for secure image upload, waveform extraction, preprocessing, and interactive visualization.
- Developed a signal-processing and pattern-matching pipeline against a 1,000+ sample clinical dataset, achieving 89% agreement with labeled ground truth.

Emotion Recognition | *Python, OpenCV, TensorFlow, Keras*

- Developed a real-time facial emotion recognition system using OpenCV and a CNN trained on the FER2013 dataset containing 35,000+ labeled images.
- Achieved approximately 83% validation accuracy across multiple emotion classes and implemented real-time face detection and emotion classification.

Technical Skills

Languages: Python, C, C++, Java, JavaScript, TypeScript, C#, Bash
Frameworks & Tools: React, Node.js, Flask, Django, Next.js, TensorFlow, OpenCV, Pytest
Databases: MySQL, PostgreSQL, MongoDB, SQLite
Systems & DevOps: Linux, Docker, Git, CI/CD, REST APIs, Agile, Embedded Systems