HIRAL ARORA

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EDUCATION

University of California- Davis Bachelors of science in Computer Science, Minor in Electrical Eng and Economics   **2024 – 2028**
Bachelors of science in Computer Science, Minor in Electrical Eng and Economics
- **Dean's Honors List**– Winter quarter (2025), Spring Quarter (2025),   **GPA-** 3.793/4
- **Relevant Coursework-** Software Development & OOP, Computer Org. & Machine-Dependent Programming, Data Structures & Algorithms, Algorithm Design & Analysis

Somerville School Noida   **2010 - 2024**
- Grade 12 (CBSE) – GPA 3.68/4 (92%)   - Grade 10 (CBSE)– GPA 3.84/4 (96%)

EXPERIENCE

Artificial Intelligence Intern, India Today   **Jun 2025 – Now**
- Built a **domain-specific election chatbot** using *LangGraph* and *OpenAI prompting* to generate optimized SQL queries on India Today's **news dataset (1970–present)**, enabling accurate, data-driven responses.
- Developed a retrieval-augmented generation (RAG) pipeline that reuses SQL query patterns from semantically similar past queries, reducing time of response while improving reliability.
- Trained the system on Indian election terminology (e.g., *incumbent, turncoat, swing vote*) and implemented fuzzy matching of MLA names to handle discrepancies between common and official records—delivering **high domain-specific accuracy.**
- Deployed currently for Bihar state elections, with **public release planned for Nov 2025 on the India Today News Channel**, making it **the first election-data-trained chatbot in Indian media.**
- Currently writing a **research paper** documenting the architecture, technical challenges, and innovations behind this project.

AI/ML Intern, Infinite Computer Solutions   **Jun 2025 – Sep 2025**
- Optimized the recommendation system for **TATA play** (an OTT platform) leveraging **Bayesian hyperparameter tuning agents** to optimize user engagement metrics and recalibrate model weighting in real time.
- Built a **dynamic auto tuning for LightFM, different rail's recommendation** strategy selector.
- Worked on a **dynamic TTL generator** for redis based caches, and a **"Because you watched X, here's Y"** type of functionality.

Director of Technology, Project Neurova   **Jun 2023 – Jun 2025**
- Overseeing the technology department, managed **10 members** and worked with them to plan and build the project's website.
- Built a therapist-style mental health chatbot using **LangChain**, integrating a third party Mental health content API.

LIDAR Beginner Intern, Sai Infotech Systems Ltd. (SISL)   **Sep 2022 – Nov 2023**
- Worked under mentors on **LIDAR projects**, learned about LIDAR fundamentals and its **geospatial information systems** application developed by SISL.

RESEARCH

- Wrote a research paper titled "An exploratory Ukraine rising commodities price analysis: towards a resilient food system", which was published in the conference proceedings **named Advances in Computational Intelligence Systems, Springer.** Presented the paper in the **22nd United Kingdom Workshop on Computational Intelligence** conference held at **Aston University, UK** and received the **Young Researcher Award. (Sep 2023)**

PROJECTS

Self -Defense Learning System (In Progress)
- Developing a real-time self-defense training tool using MediaPipe for pose detection and OpenCV for video analysis.
- Implementing pose matching with live feedback and correction guidance, using FastAPI, WebSockets, and TensorFLow.
- Building a full-stack system with React.js frontend and PostreSQL backend, containerized with Docker.

Skill Scalar @ Google Developer Student Club UC Davis
- Led a team of five as Project Manager and won Best Technical Project at the Project Showcase.
- Built a web app that matches resumes with job listings scraped from platforms like Linkedin, Indeed, Google, etc. using Beautiful Soup.
- Provided course recommendations to bridge skill gaps via resume analysis, using OpenRouter AI prompts and a LangChain chatbot.
- Linked frontend and backend using FastAPI, and implemented pose detection with MediaPipe (ongoing) to suggest interview attire.

Diabetes Risk Prediction @ AI Student Collective UC Davis
- Developed a machine learning model to predict health risk based on key health indicators like blood pressure, insulin levels, and BMI.
- Trained and evaluated models using Random Forest, Logistic Regression, and SVM for accurate risk classification.

DO-GOODING
- Developed a ReactJS web application that facilitates item-based donations by linking 200+ donors with recipients from 4 NGOs.
- Incorporated location-based matching to enable effective distribution of consumables, stationary, and clothing.
- Used MongoDB and an integrated Google Maps API for proximity filtering, real-time updates and scalable performance were guaranteed.

CLUBS

- Google Developer Student Club @ UC Davis (Oct 2024 - Present)   - #Include @ UC Davis (Jan 2025 – Jun 2025)
- AI Student Collective @ UC Davis (Sep 2024 – Dec 2024)   - Void Club @ Somerville School (Apr 2022 - Dec 2023)

TECHNICAL SKILLS

- **Languages:** C++, C, Python, JavaScript, TypeScript, HTML/CSS, Assembly, PostgreSQL, MySQL
- **Frameworks:** React.js, React Native, Node.js, FastAPI, Next.js
- **Developer Tools:** Git, GitHub, Docker, MongoDB, Vercel, Jupyter Notebook, VS Code, Linux, DBeaver, RStudio
- **AI & Agentic Tools:** LangChain, Ollama, LightFM, LLM development & training, vector embedding (pgvector)