Saurabh Singh

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Key Highlights

- Developed LLM-powered AI agents for automation and information retrieval
- Built multiple GenAI and LLM based Web applications
- Researched and deployed NLP models for misinformation detection and classification

Work Experience

Research Engineer Data Science May 2024 – Present
Nanyang Technological University Singapore

- Led the computational analysis for the 'Information and Perception Analysis in Online Groups' project, Developed an **LLM-powered system** for discourse detection, author classification, and network analysis.
- Developed a machine learning framework using user roles, topics, and sentiment trends with **90.91%** accuracy in predicting sentiment shifts.
- Led a 4-member team to build an LLM-powered AI scraper for misinformation detection, processing **1M+ data points**.

Research Assistant Artificial Intelligence Jul 2022 – Nov 2023
NUS Human Computer Interaction Lab Singapore

- Developed an advanced eye gaze recognition model utilizing graph neural networks and progressive optimization, achieving **98%** precision.
- Enhanced data processing on a 10-gesture dataset, achieving **97.67%** accuracy on unseen data.
- Benchmarked model performance against ANN, CNN, GRU, and LSTM, achieving a **4% improvement in accuracy**.

Software Engineer R&D Jan 2019 – Oct 2021
Hewlett-Packard Enterprise Bengaluru, India

- Drove the development of HPE's proprietary Storage Solution (SEMC), in 6 Support Program Releases and drastically reducing post-release bug reports by **34%.**
- Actively collaborated with **cross-functional teams** to enhance system robustness and UX by using React/Node.js to engineer reusable UI components.
- Collaborated with Japanese teams on localization, improving **global user adoption**. Streamlined CI/CD pipelines using GitHub, Jenkins, and Agile methodologies.

Education

National University of Singapore Jan 2022 – Jan 2024
Masters in Computing, Artificial Intelligence specialization (Dissertation Track)

SRM Institute of Science and Technology Aug 2015 – May 2019
Bachelor of Technology in Computer Science and Engineering

Research and Live Projects

Research & Thesis:

- **Modeling Sentiment Shifts in Online Communities** – Analyzed the interplay of user roles and topics in shaping discourse across online platforms and developed an ML framework with **90.91% accuracy** to predict sentiment shifts.
- **Eye-Gaze Pattern Recognition (Master's Thesis)** – Built a neural network-based model (ANN, CNN, GRU, LSTM, GCN) for gaze detection.
- **Face Spoofing Detection (Bachelor's Thesis)** – Designed an SVM-based model with feature engineering to detect fraudulent facial attacks on authentication systems; **published in IJEAT, 2019**.

Live Web Applications on GenAI, AI Agents, & ML (www.saurabh285.com):

- **ATS Resume Expert** - Designed a resume analysis tool using Google Gemini AI for ATS scoring and skill enhancement.
- **ML Regression Comparison App** – A regression analysis app with model selection & hyperparameter tuning capabilities.
- **AI-Powered Fitness Recommender & Performance Predictor** – Developed a Strava-integrated AI system for personalized workout recommendations, training plans, and performance predictions using Google Gemini 1.5, Flask, and Strava API.
- **Multi-Agent Productivity Assistant** – A multi-agent AI system automating email summarization, meeting scheduling, research paper retrieval, and workflow management using Gemini 1.5 Flash, Google Calendar, and Gmail APIs

Technical skills

Tech Stack: Python, PyTorch, TensorFlow, Scikit-Learn, Keras, LLMs, LangChain, NLP, OpenAI API, Hugging Face
MLOps & Data Engineering: FAISS, ChromaDB, Pinecone, AWS, Azure, Docker, Kubernetes, Airflow, CI/CD, MLflow, Hadoop, Spark, SQL, NoSQL, Grafana.
Additionally: LLM(RAG, Chain of Thought, Fine-Tuning), NLP, Transformers (BERT, GPT), Time-Series Analysis, Predictive Analytics, Clustering, Feature Engineering