SAURABH SINGH

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| www.saurabh285.com |

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

SUMMARY

- 5+ years in applied ML, GenAI, NLP, and LLMs (GPT, Gemini)
- Built scalable ML/LLM systems using AWS (SageMaker, EC2, S3), Airflow, Docker
- Experience in forecasting, recommendation, sentiment/misinformation detection at scale

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 time series forecasting model using user roles, topics, and sentiment trends with 90.91% accuracy in predicting sentiment shifts, and implemented **CI/CD, end-to-end pipelines** (Airflow, Docker, AWS Sagemaker), and **model monitoring**,15% improvement over baseline
- Mentored a 4-member team to build an LLM-powered AI scraper leveraging LangChain and Hugging Face Transformers 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.
- Optimized preprocessing pipeline and enhanced data processing on eye gaze 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.

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):

- **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
- **ATS Resume Expert** - Designed a resume analysis tool using Google Gemini AI for ATS scoring and skill enhancement.
- **Scalable & Low Latency RAG** — A production-ready low latency, scalable RAG-based QnA system using Redis, FAISS, and Gemini (Google LLM) with FastAPI, Gunicorn, and Uvicorn for async multi-worker handling; deployed via Docker.

TECHNICAL SKILLS

Languages & Tools: Python, C++, JavaScript, SQL, React, Node.js, Git, Docker, Jenkins

AI/ML & Infra: PyTorch, TensorFlow, Keras, Scikit-Learn, Hugging Face, LangChain, MLflow, Airflow, CI/CD, Kubernetes, FAISS, Pinecone, ChromaDB

Cloud & Data: AWS (EC2, S3, SageMaker), Azure, Hadoop, Spark, NoSQL, Grafana

Specialties: Generative AI, LLMs (Gemini, GPT), RAG, NLP, Transformers, Misinformation Detection, Sentiment Analysis, Time Series, Recommendation Systems