SOHAM PATEL

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EDUCATION

University of California, Irvine, **CA** **Sep 2023-Dec 2024**
Master of Data Science, GPA: 3.67/4
Relevant Coursework: Artificial Intelligence, Machine Learning, Statistics, Database Management, Bayesian Modelling.

SRM Institute of Science and Technology, Chennai, India **Jun 2019-May 2023**
Bachelor of Technology in Computer Science Engineering, GPA:3.94/4
Relevant Coursework: Machine learning, Statistics, Database Management, Artificial Intelligence, Data Structures.

SKILLS

- **Programming**: Python, C, C++, MATLAB, SQL, R
- **ML & DL**: scikit-learn, Keras, PyTorch, TensorFlow, Neural Networks, Transformers, LLMs, XGBoost, NLP.
- **Data Analytics and Visualization:** Excel, Tableau, ArcGIS, Pandas, NumPy, Matplotlib, Seaborn.
- **Data Engineering**: ETL Pipelines, MLOps, MySQL, PostgreSQL, Apache Spark, Neo4j, MongoDB, Cassandra, Flink.
- **Statistical Analysis:** Distributions, Regression, Bayesian Inference, A/B testing, Time series Analysis, Optimization.
- **Cloud & Tools:** AWS, Azure, GCP, Airflow, OpenCV, Docker, Jenkins, GitHub, CI/CD, Kubernetes, Langchain.

WORK EXPERIENCE

Machine Learning Intern || LiveGood Inc, Irvine, CA **Sep 2024-Dec 2024**
- Built **Autoencoder** and **CNN** models to analyze health metrics for longevity insights, achieving high accuracy with **Pytorch.**
- Tuned neural networks through **hyperparameter optimization** for enhanced predictive performance in longevity studies.
- Deployed insights on a **Tableau dashboard** with real-time updates, aiding public health strategy decisions.

Data Science Research Intern || UCI-Health, Orange, CA **Jun 2024-Sept 2024**
- Engineered a comprehensive **ETL pipeline** on **AWS**, integrating cloud-based databases with **SageMaker** models to **enhance data accessibility by 70%** and enable real-time analytics.
- Implemented **CNN models** for burn severity prediction and a **GenAI-powered** patient support chatbot using **Llama**, reducing data inconsistencies by **40%** and providing real-time, AI-driven assistance for patient support.
- Automated model deployment with **CI/CD** on **AWS**, enabling scalable updates and ensuring continuous improvement for **predictive analytics** in healthcare.

Machine Learning Intern || Strategic Alliance, India **Sep 2021-Mar 2022**
- Developed and deployed an end-to-end solution using **TensorFlow** for real-time **passenger detection**, automating ticketing workflows and **boosting revenue by 30%** through efficient, scalable operations.
- Created a **YOLO**-based **Social Distance Detector** for COVID-19 compliance, utilizing **Docker** for flexible, containerized deployment to ensure robust real-time performance.
- Constructed an **Attire Analysis System** with **Custom Vision**, achieving **94%** accuracy in surveillance.

PROJECTS

PFAS Analysis using Advanced ML (Group Research Project) || Olivares Lab, UCI **Jun 2024-Present**
- Built ML models (**CNNs, VAEs**) to analyze **PFAS distribution**, achieving **85% accuracy in forecasting regional spread**.
- Applied **GANs** for high-resolution mapping of geospatial data, supporting visualizations that guided key remediation efforts.
- **Automated data pipelines** in Python, processing over **1 million data points** using ArcGIS for real-time environmental insights.

EMPATH AI (LLM Based emotional support system) **Jan 2024-Jun 2024**
- Built a **BERT-LSTM** model with **RAG** using **Pinecone** for sentiment analysis on user messages, enhancing real-time mental health insights and achieving a **35%** boost in therapeutic response accuracy.
- Integrated **fine-tuned DistilGPT** model with **ChatGPT 3.5** to provide personalized coping mechanisms, building on the sentiment analysis from the first model to deliver tailored support.
- Implemented **real-time feedback loop** using **LangChain** and Pinecone, allowing continuous model **fine-tuning** based on evolving user sentiment data for improved therapeutic response accuracy.

YOGDAAN (Emergency dispatch system using ML workflows) **Aug 2022-Jul 2023**
- Designed a scalable crisis response platform with real-time data processing capabilities to connect individuals in emergencies with nearby authorities, enabling rapid intervention through a secure, cloud-based architecture.
- Implemented **XGBoost** and **LSTM models** achieving **92%** accuracy in emergency prediction and real time analysis.
- Deployed on **AWS (Lambda, ElastiCache, RDS)** to optimize data flow, reduce response time by **30%**, and maintain high reliability during crisis situations. "Research paper link"