Saurin Patel

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EDUCATION

M.S. Computer Science, Illinois Institute of Technology Chicago, IL **May, 2025**
CGPA 3.66/4.00

B.S. Information Technology, University of Mumbai, India **May, 2023**
CGPA 3.58/4.00

SKILLS

- Programming Languages: C++, Python, Java, JavaScript.
- Machine Learning & Data Science Tools: TensorFlow, Keras, PyTorch, Scikit-learn, OpenCV, Pandas, NumPy, Matplotlib, Seaborn
- Databases: SQL, MongoDB.
- Data Visualization: PowerBI, Tableau.
- Cloud-Based Technologies: Azure, Docker and Kubernetes.
- Other Skills: Data Preprocessing, Data Analysis, ETL, Apache Hadoop, Statistical Analysis, Deep Learning, Natural Language Processing (NLP), Microsoft Office.

EXPERIENCE

Research, University of Naples Fredrico, Naples, Italy **Sept2022-Mar2023**
- Led data preprocessing for **machine learning** models (CNNs, Random Forest, SVM), improving input data quality.
- Enhanced model performance by 25% through data cleaning, standardization, and augmentation.
- Conducted extensive data analysis using **Python** to extract meaningful insights and inform model development.
- Achieved **92.9%** accuracy and reduced errors by **40%** in Land Use and Cover Classification with region-based training.
- Presented research findings at international conferences, contributing to academic publications.

Machine Learning, Shah and Anchor, Mumbai, India **Aug2021-Feb2022**
- Improved brain tumor identification accuracy in MRI images to **89.2%** using advanced analysis techniques.
- Optimized YOLOv7 model for better performance using **Python**, **TensorFlow**, and **OpenCV**.
- Conducted exploratory data analysis (**EDA**) to identify key features and correlations in medical imaging data.
- Developed custom Python scripts to automate data preprocessing tasks, reducing manual effort by 30%.

Web Developer and Quality Assurance Intern, MoPharma Solutions Ltd, Mumbai, India **Aug2020-Feb2021**
- Conducted hands-on testing, creating test cases for **APIs** and tracking bugs with **Postman**.
- Utilized strong communication skills for cross-functional collaboration.
- Led a team of four in project management, designing and building web components with **React**, and adopting **Agile/Scrum** methodologies.

ACADEMIC PROJECTS

Plant Disease Classifier 🔗
- Developed a CNN-based image processing model with **TensorFlow/Keras**, **OpenCV**, and data augmentation for leaf image classification.
- Deployed the solution using React Native and Google Cloud Platform (GCP).

Employee Retention Analysis and Prediction System 🔗
- Employed K-means clustering for employee segmentation and Random Forest/XGBoost classifiers for retention prediction.
- Developed a **REST API** with **Flask** and a user-friendly UI with **Streamlit**, tested thoroughly, and deployed on **AWS** EC2 with Nginx.

RAG Application using LLM 🔗
- Developed a Retrieval-Augmented Generation (**RAG**) model with **Generative AI** Embeddings and FAISS for vector embedding and similarity search.
- Engineered a document ingestion pipeline for precise QA and optimized system performance metrics.

Twitter Sentiment Analysis 🔗
- Built a sentiment analysis system using **NLP** techniques, incorporating transformer models for real-time sentiment classification and trend analysis.

PUBLICATIONS AND EXTRACURRICULAR

- Plant Disease Classification Using Convolution Neural Network Plant Disease Classification Using Convolution Neural Network- IEEE Xplore. 🔗
- Land Use Land Cover Classification Using Machine Learning IEEE Xplore. 🔗
- Head, IT Department at SAKEC, encouraged students to participate in various events and hackathons.