Tulsi Rajnikant Patel

📞 602-283-6433 | ✉ tpatel73@asu.edu | in linkedin.com/in/tulsi-patel2091

EDUCATION

Arizona State University   August 2023 – May 2025
Masters in Computer Science – GPA 4.00   *Tempe, AZ*

Nirma University   July 2019 – May 2023
Bachelors of Technology in Computer Science and Engineering | Minor in Finance   *Ahmedabad, India*

WORK EXPERIENCE

Machine Learning Engineer Intern   July 2025 – Present
Alkermes Inc.   *Waltham, MA*

- Spearheading development of a clinical report automation **Streamlit** app using **Snowflake AI Cortex**, featuring an **AI chat assistant** that lets medical writers refine section content via **prompts**, reducing manual drafting effort by 80%.
- Designed secure **RAG** workflows with Snowflake Vector Store, leveraging **AWS S3** for intermediate data storage and model prompt testing experiments, achieving >90% summary accuracy.
- Integrated LLMs (**Openai-gpt-5**, **Mistral-large2**, **Llama 3.1–70B**) to summarize key tables/figures across 10+ sections, and containerized the app using **Docker** for secure deployment on **Snowpark Container Services**.

Research and Development Intern   January 2023 – May 2023
Sahajanand Technologies Private Limited   *Surat, India*

- Created a **Flask** web app for graders to upload diamond images and get automated inclusion detection results, using **DynamoDB** to store grading metadata for fast retrieval.
- Prototyped defect detection systems using **contour-based** and **segmentation** techniques in **Python**, improving inclusion identification in diamond images to 93% accuracy.
- Customized **image-processing pipelines** with **OpenCV** and **Scikit-image** to extract facet and table zones, improving region segmentation and reducing manual inspection overhead.
- Evaluated **computer vision** techniques namely Thresholding, Contours, SIFT, Watershed across 5k+ diamond images.

Undergraduate Research Intern   June 2022 – December 2022
Nirma University   *Ahmedabad, India*

- Delivered interactive **PowerBI** dashboards showcasing gender-based language patterns, contributing to a university-funded digital humanities research **project.**🔗
- Orchestrated a tweet analysis pipeline collecting 600k+ multilingual tweets from 523 politicians using **SNScrape, profile-based gender tagging,** and **Google Translate API.**
- Configured and trained **deep learning models (CNN, ANN, LSTM, GRU, RNN)** and **LLMs (BERT, RoBERTa)** to classify sentiment and gendered language in political discourse, achieving up to 86% accuracy.

Software Development Intern   June 2022 – August 2022
Avioryn   *Surat, India*

- Co-developed key modules for **"LivLaundry"**, a full-stack laundry logistics platform, including real-time product tracking and OTP-based user authentication using **Node.js, MongoDB,** and **2Factor API.**
- Implemented **QR code generation** and **password recovery** in **JavaScript**, streamlining product handoff and reducing manual tracking errors across partner operations.
- Collaborated with **2 UX designers** to build data-driven **dashboards**, optimizing usability for multiple user personas.
- Operated within an **Agile team** of 5 using **ClickUp** for task management and **Slack** for real-time collaboration.

PROJECTS

Bon Appetit - A Restaurant Website

- Programmed a full-stack website with **React, Node.js** and **MongoDB**, supporting 100+ menu items and reservations.
- Designed a **Bootstrap UI** with interactive components, boosting engagement and processing 200+ monthly bookings.
- Secured admin panel with **JWT authentication** and configured automated email notifications via **Nodemailer API**.

E-Commerce Product Chatbot

- Built a chatbot with **Retrieval-Augmented Generation (RAG)** to handle queries across 10k+ Stock Keeping Units.
- Employed Facebook AI Similarity Search (**FAISS**) and Sentence-BERT (**SBERT**) for deriving semantic embeddings.
- Orchestrated **LangChain** for prompt design and retrieval, utilizing OpenAI's **GPT-4** for question answering.

SKILLS

Programming Languages: Python, C/C++, Java, SQL, HTML, CSS, JavaScript, Golang, Prolog, Solidity
Databases and Cloud: PowerBI, MySQL, PostgreSQL, MongoDB, Git, Hadoop, AWS, Docker
Frameworks: Hugging Face, vLLM, LangChain, TensorFlow, PyTorch, OpenCV, Scikit-image, Node.js, React
Courses: Machine Learing, Database Management, Web Technologies, Software Engineering, Cloud Computing