

SHAIL PATEL

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OBJECTIVE

Seeking dynamic challenges to leverage my skills in Python and Machine Learning sharpened by an internship experience. Aiming to drive innovation in Technology industry. Committed to continuous learning and poised to make contributions while embracing new opportunities in the field of Artificial Intelligence and Machine Learning.

EDUCATION

- **NC State University, Raleigh, NC** August, 2024 - May, 2026
Master of Computer Science GPA: 4/4
Coursework: Automated Learning and Data Analysis, Artificial Intelligence, Foundations of Data Science
- **Dharmsinh Desai University, Gujarat, India** October, 2020 - May, 2024
Bachelor of Information Technology GPA: 9.06/10
Coursework: Data Structures, Design and Analysis of Algorithms, Computer and Communication Networks, Microprocessor, Database Management, Software Engineering, Advanced Java and Web Technology

TECHNICAL SKILLS

- **Programming Languages:** C/ C++, Python, Java, C#, JavaScript, Prolog, LaTeX, MySQL, XML
- **Frameworks:** ASP.NET, AngularJS, Hibernate, AJAX, Django, Flask
- **Tools:** CUDA, Git, Visual Studio, VS Code, Jupyter Notebook, Google Colab, Netbeans, Excel, Word, PowerPoint
- **Concepts:** TensorFlow, PyTorch, Data Structures, Data Preprocessing, Data Visualization, LLMs
- **Badges:** AWS Cloud Foundations, AWS Machine Learning
- **Certificates:** Getting Started with Deep Learning (Credential ID:M0S7oiZMQcO9R966P9O6-Q), Supervised Machine Learning: Regression and Classification (Credential ID:L9DXY5DPOXT8)

INTERNSHIP

- **Research Intern – Machine Learning, Space Applications Centre (ISRO), India** December, 2023 - March, 2024
 - Built ML models for **Cloud Detection**, achieving **95% accuracy** with **Random Forest**.
 - Implemented **Feed-Forward Neural Network, Random Forest, LightGBM** for cloud masking requiring **zero human intervention**.
 - Preprocessed **MODIS satellite data** (NASA) for training and validated on **INSAT-3D** (ISRO).

PROJECTS

- **LLMs | AI-Powered Image Captioning**
 - Developed an **Image Caption Generator** using the **Flickr30k dataset** (31K images) with **ResNet50 + Transformer** and **InceptionV3 + LSTM**.
 - Achieved **Bleu Score: 0.1688, CIDEr Score: 0.5560**, competitive with state-of-the-art models.
 - Implemented feature extraction, data preprocessing, and optimized training using **PyTorch, TensorFlow, Hugging Face**.
- **Natural Language Processing | Smart Text Prediction**
 - Built **Gujarati Sentence Completion** using **Hidden Semi Markov Model** and **Neural Networks** with **TensorFlow, NLTK**.
 - Collected and preprocessed a custom dataset from **online books and articles** for training.
 - Developed and evaluated a language model with a focus on improving **word prediction accuracy**.
- **Computer Vision | IC Chip Detection for Automated Inspection**
 - Designed an **IC Chip Detection System** using **YOLOv5**, achieving **90% accuracy**.
 - Applied **masking techniques** using **rembg, PIL** to enhance chip detection and classification.
 - Created a custom dataset with **makesense.ai** and optimized model performance.
- **Full-Stack Development | AI-Powered Movie & Job Recommendation Systems**
 - Revamped **movie recommendation site** using **Flask, React, MySQL** with personalized recommendations.
 - Developed **on-campus job portal** using **MERN stack** with **real-time chat** and **dark mode**.
 - Enhanced UI/UX and performance with **optimized database queries** and **caching techniques**.

RESEARCH PUBLICATION

Shail Patel, et al. (2023). **Next Word Predictor in Gujarati Language**. In *International Journal of Innovative Research in Science, Engineering and Technology*, DOI: 10.15680/IJIRSET.2023.1210063.