

Rudra Patel
patelrudra854@gmail.com | (747) 786-5589 | [LinkedIn](#) | Los Angeles, CA

WORK EXPERIENCE

Research Assistant - NASA-Collaborative Robotics & AI | ARCS Lab, CSUN

Ongoing

- Developed autonomous navigation systems for NASA rover prototypes using ROS2 and reinforcement learning.
- Engineered a generative AI pipeline (GANs, PyTorch) to simulate Martian terrain for NASA missions.
- Designed a computer vision module (OpenCV, YOLOv8) to identify mission-critical landmarks.

Intern - Data Scientist | India Space Research Organization (ISRO)

Jan 2024 - May 2024

- Developed ML models to detect mineral deposits in oceans using satellite data.
- Engineered rainfall prediction models using TensorFlow and PyTorch.
- Automated data preprocessing pipelines with Python, reducing cleaning time.

Intern - Machine Learning Developer | Nxon AI Pvt. Ltd.

May 2022 - Nov 2023

- Created an LSTM-based stock price prediction model (Python, TensorFlow).
- Developed and fine-tuned LLM-based question-answering systems using Retrieval-Augmented Generation (RAG) pipelines for domain-specific applications.
- Integrated APIs and automated data ingestion workflows using Python, Selenium, and LangChain, optimizing performance across the pipeline.

PROJECTS

Legal Chatbot for Washington State Law

- Created a RAG-based legal assistant using OpenAI and LLaMA models to answer questions based on Washington state legal documents.
- Implemented document ingestion using LangChain, SQL, and vector databases to retrieve context-specific answers with source references, simplifying access to legal information for non-technical users.

AI Assistant for Doctors and Patients

- Developed an AI assistant using Large Language Models (LLMs) to provide treatment suggestions and doctor recommendations.

YouTube Video Summarizer

- Built a tool using Haystack, OpenAI LLM, and Whisper transcriber to summarize YouTube videos, reducing viewing time by 30 minutes per user.

EDUCATION

California State University of Northridge

Master of Computer Science, expected May 2026

GPA: 4

CSPIT, Charusat University, India

Bachelor of Engineering in Information Technology, May 2024

GPA: 8.7/10.0, 2nd rank among 28,000 engineering students

CERTIFICATION

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| • ORACLE CLOUD INFRASTRUCTURE 2024 GENERATIVE AI CERTIFIED PROFESSIONAL. | Jul - 2024 |
| • CAREER ESSENTIALS IN DATA ANALYSIS BY MICROSOFT AND LINKEDIN | Mar - 2024 |
| • ORACLE CLOUD INFRASTRUCTURE FOUNDATION CERTIFIED ASSOCIATE | Jan - 2024 |
| • AWS ACADEMY GRADUATE - AWS ACADEMY CLOUD FOUNDATIONS | Nov - 2023 |
| • AWS ACADEMY GRADUATE - AWS ACADEMY MACHINE LEARNING FOUNDATIONS | Apr - 2023 |

PUBLICATIONS

GAN-based Image Super-resolution: A Technical Perspective" in *International Conference on ICT for Intelligent Systems* (2023)([Link](#))