

Nakul Gupta

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EDUCATION

Indian Institute of Technology, Mandi

Bachelors of Technology, Mechanical Engineering, GPA(Current): 7.84/10

Oct 2022 - May 2026

Leibniz University Hannover, Germany

Exchange Student, Winter Semester

Oct 2024 - Feb 2025

PROJECTS

Generating Real-Time Trajectories ([Github link](#))([Results](#))

Deep Learning - Team Project

- Implemented real-time trajectory generation using **Action Chunking Transformers (ACT)** for a single-handed Kinova robotic arm, revolutionizing control precision in complex manipulation tasks such as cube transfer and screw tightening.
- Engineered a comprehensive simulation **ecosystem using Mujoco and DMControl** (Reinforcement Learning).
- Refining Data** through Blender and Unity, creating high fidelity training framework for robotic control systems.

InterActive Story Teller ([Github link](#))

Deep Learning Project

- Developed an Interactive Storyteller using **Google Generative AI, and Stable Diffusion**, enabling dynamic story generation and visualization.
- Integrated **text and image generation models** to create immersive narratives and visual representations based on user inputs.
- User-friendly **streamlit** interface to allow iterative **story regeneration**, incorporating suggested edits or improvements.

Pneumonia Detection Model ([Github link](#))

Machine Learning - Individual Project

- Built pneumonia detection model using **convolutional neural networks (CNN)** using **TensorFlow**, achieving 95% accuracy in detecting pneumonia.
- Created web interface integrating model with **FastAPI** and React enabling seamless user interaction.
- Architected **custom CNN** and optimized model performance through data preprocessing and hyperparameter tuning.

SKILLS

- Programming Languages:** Python, C++
- Libraries & Frameworks:** PyTorch, Tensorflow, scikit-learn, Pandas, Matplotlib, NumPy, Langchain
- Tools:** VS code, Google Colab, Docker, Git, GitHub, MS Office
- Soft Skills:** Work Management, Perfection

RELEVANT COURSES

Deep Learning Foundations, Data management and analysis, Data Science III, Probability and Statistics, Linear Algebra, Computing and Data Science.

ACHIEVEMENTS

- Finalist** of Space Hackathon organized by **ISRO** by surpassing 1000 teams, SIF 2023, Faridabad.

EXTRACURRICULARS

- Rifle Shooting Athlete**, National Player (Rank 21), National Rifle Association of India.
- Core Member**, Photography and Movie-Making Club, Covered institute seminars, IIT Mandi.
- Core Member**, UDC - Dance club, participated in EXODIA'23, Foundation Day, IIT Mandi.
- Event Management (Football)** in Hostel General Championship 2023, Security team in EXODIA'23, IIT Mandi.