Aditya Routh

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EDUCATION

VIT Bhopal University, Bhopal	2022 – 2026
B. Tech in Computer Science	8.88 CGPA
(specialization in Artificial Intelligence and Machine Learning)	
Jermels' Academy, Siliguri, West Bengal	2010 – 2022
Intermediate (XII Science)	96.2 %
High School (X)	94.4 %

TECHNICAL SKILLS

Programming Languages: Python, C++, C

Tools/Frameworks: OpenCV, MediaPipe, Scikit-learn, Tensorflow, MySQL

Core Knowledge: Data Structures & Algorithms, Artificial Intelligence, Machine Learning, Computer Vision, Reinforcement Learning, Operating Systems, Computer Networks

PROJECTS

- **Real-Time Sign Language Translator** | Python, OpenCV, MediaPipe   April - August 2024
  - Trained a hand gesture recognition model to translate sign language in real time.
  - Implemented feature extraction with MediaPipe and classification with scikit-learn.
  - Improved translation accuracy by 20% through iterative model tuning.
  - Source code: https://github.com/iamadro/sign_language_translator/

- **Exploring Training Dynamics in Reinforcement Learning Using a Tic-Tac-Toe bot** | RL, Deep RL   In Progress
  - Designed an adaptive RL agent that learns through self-play and dynamic opponent strategies.
  - Analyzed how training setups and opponent strategies affect learning efficiency and gameplay.
  - Comparing performance of Q-Learning and Deep Q-Learning

- **Autonomous POS Drone for Smart Agriculture** | Pixhawk, Raspberry Pi, Computer Vision   In Progress
  - Developed drone navigation with Pixhawk and onboard vision system for plant disease detection.
  - Automates field navigation, plant disease classification, and precision spraying.
  - Implemented disease classification model achieving preliminary accuracy of 92%.
  - Working on payload automation for targeted spraying.

LEADERSHIP & ACHIEVEMENTS

- **Student Event Coordinator, Robotics Club (Oct 2024 – Oct 2025):**
  - Organized hands-on workshops, robotics contests, and tech sessions for 70+ students.
- **Smart India Hackathon:**
  - Selected for national-level round; showcased problem-solving and teamwork skills.
  - Certificate link: https://tinyurl.com/3a3mv46y
- **Debate & Chess Participant (School Level):**
  - Participated in multiple inter-house events, honing public speaking and strategic thinking.

CERTIFICATION

- **Applied Machine Learning in Python** | Coursera, authorized by University of Michigan
  - Hands-on with supervised/unsupervised learning, model evaluation, and scikit-learn.
- **Computer Vision |** Offered by Vityarthi
  - Studied image preprocessing, segmentation, object detection, and deep learning with OpenCV.
- **Privacy and Security in Online Social Media** | NPTEL
  - Top 5% rank; covered data privacy, security threats, and social network analysis.