

Nilang Bhuva

B.Tech - Artificial Intelligence
Sardar Vallbhbhai National Institute of Technology

+91-9664940492
u23ai047@coed.svnit.ac.in
Github | LinkedIn | Codeforces | LeetCode
Deep Learning • Medical Imaging • Robotics

Education

Degree/Certificate	Institute/Board	CGPA/Percentage	Year
B.Tech - AI	National Institute of Technology, Surat	7.96 (Current)	2023-2027
Higher Secondary	GSEB Board	75%	2023
Secondary	GSEB Board	86%	2022

Experience

Kidney Tumor Segmentation with Uncertainty Estimation | Research Assistant *Aug 2025 – Scheduled*
NIT Surat, Department of AI | Research under Dr. Tanmoy Hazra and Dr. Saif Nalband GitHub

- Developed and trained an enhanced U-Net based model for kidney tumor segmentation from CT scans, achieving **Dice = 0.849** in the KiTS23 dataset.
- Preprocessed and structured 9,500+ CT slices to improve training stability and reduce noise artifacts.
- Generated uncertainty maps using Monte Carlo Dropout to assist physicians in clinical decision-making.
- **Paper Under Review:** "Uncertainty-Aware Kidney Tumor Segmentation using ARU-GD and Monte Carlo Dropout" in a medical imaging journal.

Projects

Autonomous Rover Navigation System *Aug 2024 – Jan 2025*
International Rover Challenge 2025 - BITs Goa GitHub

- **Tech Stack:** Python, YOLOv8, ROS 2 Humble, OpenCV, Intel NUC
- Engineered a real-time arrow detection pipeline for rover navigation, achieving **95% accuracy** in desert-like terrain conditions.
- Optimized YOLOv8 model to process 640x480 frames in 30ms latency using TensorRT acceleration.
- Created a dataset of 1,500+ annotated images simulating Mars lighting conditions for robust training.
- Integrated with ROS 2 navigation stack, enabling autonomous path following during competition trials.
- Optimized inference on **Intel NUC**, achieving **15 FPS** and reducing manual intervention by **70%.**

Forestry Exploration Portal — Crawlers *Jul 2024 – Aug 2024*
Web Development Competition — Nexus 2024 Website | GitHub

- Created an interactive web portal to explore forests with **3D trail maps** and **ecological information**.
- Built a clean and responsive user interface optimized for seamless use across mobile, tablet, and desktop devices.
- Integrated OpenWeather API to provide real-time forest weather updates, enhancing user experience and engagement by 20% based on time spent exploring virtual trails.
- Launched and maintained the platform using **Vercel**, enabling quick and seamless updates.

Smart Waste Classification System *Nov 2023 – Jan 2024*
Under Drishti - Makernova (Robotics Club) GitHub

- **Tech Stack:** Python, TensorFlow, Raspberry Pi, OpenCV
- Implemented and fine-tuned a **VGG16-based classifier** to identify 12 waste types with **90% accuracy**.
- Integrated the model on **Raspberry Pi 4** with IR sensor automation, achieving **200ms inference latency**.
- Captured and labeled 800+ training images under varied lighting to improve generalization.
- Compressed model size by 60% using TensorFlow quantization for real-time edge deployment.

sectionAchievements

PowerMind Hackathon,**2nd Runner-Up** in hackathon organized by Adani Group *May 2026*
International Rover Challenge 2025,**Ranked 14th** among 32 global teams *Jan 2025*
Web Wonders,**1st Place** among 40+ teams in web development competition *Aug 2024*
IBM Z Datathon, (Top 500 worldwide) in IBM's premier datathon competition *OCT 2024*

Technical Skills

- **Programming**: Python, C/C++, JavaScript, SQL, Dart, Bash
- **Machine Learning & Computer Vision**: Deep Learning, CNNs, U-Net, Image Segmentation, Medical Imaging, TensorFlow, PyTorch, Scikit-learn, MONAI, YOLO, OpenCV
- **Model Optimization & Deployment**: TensorRT, ONNX Runtime, Real-Time Inference, Quantization, HDF5 Dataset Pipelines, Edge Deployment on Raspberry Pi & Intel NUC
- **Frameworks & Development**: ROS 2, Streamlit, Flutter, ReactJS, Node.js
- **Tools & Platforms**: Git, Linux, VS Code, Jupyter, Vercel CI/CD

Positions of Responsibility

AI/ML Developer,DRISHTI, NIT Surat *Oct 2024 - Present*
- Developed CV systems (YOLOv8/VGG16) for edge deployment on Raspberry Pi

Technical Head,CEV, SVNIT *Aug 2024 - Present*
- Mentored 15+ students in AI/ML through workshops and project guidance

Manager(Finance & Documentation),Mindbend 2026 *Oct 2025 - present*
-planning and coordinating the financial structure for **Mindbend 2026** with an expected budget of **30L**+.