PRANAV SAXENA

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[Github](#) | [LinkedIn](#) | [Personal Website](#)

EDUCATION

Birla Institute Of Technology And Science   Goa, India
Bachelor of Engineering   2022 - Present
Major in Electronics and Communication

EXPERIENCE

Research Intern   Apr 2024 - Present
National University of Singapore (NUS)
- Research Intern at MARMoT Lab, NUS in a collaborative project with TU Delft under the supervision of **Prof. Guillaume Sartoretti** and **Prof. Marija Popović.**
- Working on Next-Best-View Policy for 3D Reconstruction using Neural Radiance Fields.

Summer School Fellow   July 2023 - Aug 2023
CVIT, IIIT Hyderabad
- Attended [7th Summer School on AI with focus on Computer Vision & Machine Learning](#) organized by IIIT Hyderabad.
- One of 200 students in India selected for the Summer School.

SKILLS

Programming Languages: Python, C++, C, SQL
Frameworks : ROS, ROS2, PyTorch, TensorFlow, Keras, Flask
Tools : Git , Arduino IDE, RViZ, Gazebo

PROJECTS

3D Human Pose Estimation using WiFi   Sep 2024 - Present
Undergraduate Research Project
- Working on 3D Human Pose Estimation using WiFi signals.
- Supervised by **Prof. Naveen Gupta**

Object Tracking using Drone   Nov 2023 - Jan 2024
Club Project, Aerodynamics Club (Computer Vision Lead)
- Implemented YOLOv5 and used a tracker with re-id for object tracking using a drone with a pixhawk flight controller.
- Completed simulations using ROS2 with PX4 Autopilot on Gazebo.

Swarm Bots   Aug 2023 - Dec 2023
Club Project, Electronics and Robotics Club
- Attempted to develop a novel algorithm for swarm robots by combining Artificial Potential Field and Reciprocal Velocity Obstacles methods to overcome the shortcomings of both methods.
- [Link of Research Poster I presented at a research projects showcase day in my University](#)

U-Net Architecture with Efficient-Net Encoder {[code](#)}   Sep 2023 - Nov 2023
Independent Project
- Developed a U-Net Architecture with Efficient-Net Encoder for segmentation on medical images.
- Supervised by **Prof. Tanmay Tulsidas Verlekar**

Zero-Shot Segmentation using CLIP Embeddings {[code](#)}   Apr 2023 - May 2023
Independent Project
- Performed Zero-Shot Segmentation using OpenAI's CLIP Encoder and U-Net Decoder based on text-prompts trained on PhraseCut Dataset.

ACCOMPLISHMENTS

- Secured 1st prize in Machine Learning/ Deep Learning Hackathon organized by Society for Artificial Intelligence and Deep learning, BITS Goa for 2 consecutive years (2023 and 2024).
- Won various Inter-School Competitive Programming Competitions in Delhi NCR, India in 11th and 12th grade.

COURSE WORK

University Courses : Artificial Intelligence | Applied Stochastic Process | Artificial Intelligence for Robotics| Game Theory and Its Applications| Statistical Inference and Applications| Computer Programming | Linear Algebra | Calculus | Probability & Statistics

Relevant Online courses : Stanford CS231n, CS229, ETHz course on Autonomous Mobile Robots

HONORS & AWARDS

Indian Olympiad Qualifier in Astronomy   May 2022
Qualified Part-1(NSEA). Among top 264 students in India to be shortlisted for evaluation of Part-2(INAO).
Received Certificate of Merit from Indian Association of Physics Teachers.

Pre-Regional Mathematics Olympiad   September 2019
Qualified Pre-Regional Mathematics Olympiad organized by HBCSE. Among the top 300 students in my state to get qualified.

LEADERSHIP

Vice Captain, Team Artemis
Vice Captain of Team Artemis, my university's team for SAE Aerothon'24 where we need to perform autonomous drone tasks. **Ranked 3rd in India out of 100 teams** in Phase-I..

Vice President, IT Ministry
Vice President of the Tech Club(IT Ministry) of Father Agnel School, Noida during 11th class.
Organized Intra-School Tech Fest and helped in organizing various school events.