Pranav A R

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Education

- **Gitam (Deemed) University** — Visakhapatnam, India
  Bachelor of Technology - Computer Science and Engineering — *September 2022- ongoing*
- **Kendriya Vidyalaya No.2** — Mangaluru, India
  Intermediate - PCMC — *August 2020 - May 2022*

Skills Summary

- **Languages**: Python, Bash, C, C++, JavaScript, SQL, JAVA, CUDA, Vulkan, OpenGL, Direct3D
- **Frameworks**: Scikit, NLTK, SpaCy, TensorFlow, Keras, OepnCV, NodeJS, PyTorch, Caffe, Hugging Face, NLTK
- **Tools**: Point Cloud Library (PCL), ETL, MySQL, SQLite, Pixhawk, Ardupilot, CrossFlight,NPM
- **Platforms**: Arduino, Raspberry, AWS, Intel Realsense, Microsoft Kinect, AWS
- **Soft Skills**: Leadership, Event Management, Writing, Public Speaking, Time Management, Club Management

Experience

- **Indian Institute of Space Science and Technology** — On-Site
  Intern (Full-time) — *June 2024 - July 2024*
  - **Internship**: Worked at CVVR Lab under guidance of Dr. Deepak Mishra on the project: Depth Based Facial Expression Recognition.
- **Indian Institute of Space Science and Technology** — On-Site
  Intern (Full-time) — *May 2023 - July 2023*
  - **Internship**: Worked on Integration and pre-processing techniques for depth perception and point cloud extraction with Intel LiDAR cameras using python.
- **AeroGitam** — Visakhapatnam, India
  President (Part-time) — *May 2024 - Present*
  - **Club Management**: Leading the club's operations, overseeing UAV and LiDAR projects, organizing events, and collaborating with alumni and faculty for funding and outreach.

Projects

- **UAV for Terrain Mapping (Drones, LiDAR, Pixhawk, ArduPilot**: UAV Developed and equipped with LiDAR for terrain mapping and data point clound data acquisition using Pixhawk, integrated with Raspberry Pi 4 and Intel Realsense. Processed point cloud data to generate terrain models, enabling terrain reconstruction and digital surface model. Tech: Pixhawk,LiDAR, QGIS, Point Cloud, Drones
- **Vechicle Identification Using Fish Cameras(Computer Vision, Deep Learning)**: Researched vehicle detenctiona and identfication using fisheye cameras for smart traffic monitoring.Used Yolov8 for object detection with fisheye distortion correction and improved accuracy. Tech: OpenCV YOLO, CNNs, Fisheye Camera Models
- **Facial Expression Recognition Using Depth and PointClouds (Deep Learning, Computer Vision)**: Developed a CNN-based facial expression recognition model trained on AffectNet. Implemented preprocessing, augmentation, and fine-tuning to improve accuracy in emotion classification tasks. Tech: PointNet, Keras, Tensorflow, AffectNet
- **Digital AI Twin for Personalised Student Experience Management(AI, Data Science, Predictive Analytics)**: Developing an AI-powered digital twin for improving student experience management, aiming to enhance academic performance, mental health, engagement and personalised learning paths using predictive analytics and reinforcement learning. Tech: AI-based Simulations, Predictive Analytics, Reinforcement Learning (Ongoing)
  - Presented a poster at International Symposium on BEYOND THE BOOKS Unlocking Full Potential of Student Life, Gitam (Deemed To Be University) Bengaluru on 27th Sept 2024
- **PointCloud to PointNet Model(PointCloud, Deep learning)**: Developed a PointNet based deep learning model to process raw 3D point cloud data. implemented normalization and augmentation to point cloud data. trained and evaluated on custom and benchmark datasets. Tech:Tensorflow, Open3D, PointNet, CNN, Matplotlib
- **Deep Learning with PyTorch: Image Segmentation (Deep Learning, Computer Vision)**: Implemented image segmentation models using PyTorch, focusing on architectures like U-Net and Mask R-CNN for pixel-wise classification and object segmentation. Tech: U-Net, Mask R-CNN, OpenCV

Certifications

- **AI Infrastructure and Operations Fundamentals**: Nvidia
- **The Fundamentals of RDMA Programming**: Nvidia
- **Modern Robotics: Mechanics, Planning, and Control Specialization**: Northwestern University
- **Improving Deep Neural Networks: Hyperparameter tuning, Regularization and Optimization**: DeepLearning.AI
- **Machine Learning with Python**: IBM AI Engineering
- **Python Project: Piloow, tesseract and OpenCV**: University of Michigan
- **Visual Perception for Self-Driving Cars**: University of Toronto