

S. Kranthi Kumar Chowdary

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Experience

Computer Vision Researcher

Indian Institute Of Technology Roorkee

Roorkee, India

October 2025 – Present

- Developing a deep learning based optical flow model(RAFT, PWC-Net) and an automated image preprocessing pipeline for river surface velocity estimation from UAV imagery.
- Implementing a self-supervised training approach using photometric and smoothness loss functions, and validated performance on Ganga canal Roorkee through forward-backward consistency, pseudo-ground-truth comparison, and GPS buoy data.

Research Intern

National Institute of Technology, Surathkal

Surathkal, India

May 2024 – August 2024

- Developed a novel Virtual Network Embedding (VNE) architecture using Horizontal Federated Learning to enhance scalability, privacy, and resource optimization across multi-domain networks
- Utilized the P3Alib Master software for real-time simulation and performance evaluation

Undergraduate Researcher

SRM Institute of Science and Technology

Chennai, India

Jan 2023 – Present

- Completed a real-world operational system achieving 93.7% precision in detecting potholes on Indian roads using the YOLOv11 model, contributing to safer navigation in autonomous vehicles (Mentor: Dr. Preethiya T.)
- Currently developing a cognitive training platform for ADHD therapy using face tracking and eye-gaze detection to dynamically adjust game difficulty based on real-time attention levels (Mentors: Dr. Annapoorani Paniyappan, Dept. of NWC and Dr. Bhasi Sukumaran, Dept. of Medical Science)

Projects

Tejas Vision

- An AI-powered application engineered to enhance road safety on Indian roads by detecting potholes, traffic signals, and 21 other traffic elements with 80.4% precision
- Leveraged YOLOv11 deep learning model specifically tuned for diverse Indian terrains and road conditions

Drought Monitoring & Prediction for South India

- Built an AI model using PyTorch to predict drought risk with Accuracy of 78% over 6,000 satellite samples (MODIS, SMAP, Sentinel-2)
- Integrated novel preprocessing pipeline: cloud removal using HSV masking and TELEA inpainting to enhance input data quality
- Targeted for submission to IGARSS 2026; focused on climatic data analytics in South India

Education

SRM Institute of Science and Technology

Bachelor of Technology in Computer Science and Engineering (Cloud Computing)- Chennai

Sept 2022 – Jul 2026

- **Coursework:** Computer Vision, Image Processing, Pattern Recognition, Cloud Infrastructure, Big Data Analytics.

Publications

Smart Pothole Detection and Traffic Sign Identification for Indian Roads: A Machine Learning Approach Using YOLOv11

April 2025

Kranthi Kumar Sariputi, Harshith Y., Preethiya T.

International Conference on Data Science and Business Systems (ICDSBS) 2025 — **Best Paper Award**

CLIPQ-Count: A Query Guided Vision Language Framework for Few-Shot Object Counting

Sept 2025

Kranthi Kumar Sariputi, Prabakeran S., M. Saravanan

In Proceedings of the IEEE INDICON 2025 (22nd Edition), IEEE India Council IEEE Bangalore Section.

Skills

Technical Skills: Python, PyTorch, OpenCV, YOLO (v8/v11), Computer Vision Deep Learning Algorithms, Remote Sensing, Roboflow, AWS, NLP, LaTeX

Soft Skills: Research, Leadership, Collaboration, Ethical Awareness, Adaptability to Interdisciplinary Knowledge

Leadership Experience

Vice Chairperson IEEE SRM Student Branch
Chennai, India

May 2025 – Present

- Leading a 200+ member team, fostering innovation, collaboration, and technical excellence.
- Oversee activities, streamline communication, and drive initiatives that empower students in technology.