Annapoorna Sai Sriram Mandalika

Personal Information

Address	2C-206, Divyashakthi Apartments, Hyderabad, India - 500016
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Nationality	Indian
Date of birth	30.03.2003
Links	LinkedIn, Website, GitHub, Google Scholar

Educational Credentials

09/21 - Present (08/25*) **Bachelor of Technology. Computer Science and Engineering with a specialisation in AI & ML**, *SRM Institute of Science and Technology, Chennai*, Tamil Nadu, India, **Thesis:** Towards Unsupervised Continual Learning for Image Classification **(ICML - 2025)**

Research Experience

08/24 - 10/24 **Research Engineer Intern**, *National Remote Sensing Centre, Indian Space Research Organisation (NRSC, ISRO)*, Hyderabad, India

- **Joint-Supervisors:** Ms. Saiveena Suresh, Ms. Shilpi Garg, Mr. Sampath Kumar, Dr. S. C. Jayanth.
- Developed an end-to-end Land Use/Land Cover Classification workflow using Deep Learning and Sentinel-1/2 imagery, achieving 80% accuracy on key classes (Built-up, Water Body, Tree Cover).
- Conducted an extensive literature review and utilized data from 25 Indian cities for training and testing on Vijayawada. Work submitted to **Big Earth Data Journal (Impact Factor: 4.2)**.

01/23 - Present **Undergraduate Researcher**, *SRM University, Kattankulathur*, India

- **Supervisor:** Dr. Athira M. Nambiar
- Developed 'XAL,' the first Explainable Active Learning (XAI) paradigm for self-driving vehicles, integrating tools like GradCAM, MiDas, and DINO v2 for attention-aware semantic segmentation.
- The framework enhances decision-making and pseudo-labeling accuracy. Published at **27th ICPR 2024, Kolkata, India.**

07/23 - 04/24 **Research Intern/UG Researcher/Research Collaborator**, *Indian Institute of Technology, Hyderabad*, India

- **Supervisor:** Dr C Krishna Mohan
- Developed an end-to-end CNN and energy-based generative model for synthetic data generation via generative replay to mitigate catastrophic forgetting in object recognition, specifically addressing scenarios where training labels were sparse.
- Explored optimizing pre-trained weights for efficiency in sparse label settings and developed a dynamically adjusting generative replay model using conventional architectures.

03/22 - 07/22 & 01/23 - 07/23 **Research Intern**, *Indian Institute of Technology, Hyderabad*, India
- **Supervisor:** Dr C Krishna Mohan
- Conducted extensive literature review (250+ papers) on image classification and model fine-tuning. Developed a custom VGG-16 network achieving 17% higher accuracy than state-of-the-art, reducing error rate. Performed large-scale breast cancer imagery data analysis.
- Developed an edge-optimized function for federated learning, addressing image classification on CIFAR-10/100-like datasets. Customized this function for federated learning in medical imaging (breast cancer segmentation) using a modified DenseNet-121 model.

Skills and Interests

Research Interest

Research Interest: Decision-making, Computer Vision, Sparse supervision, Self-aware, Data interpretability, Model reasoning, Deep Learning

Skills

Technical skills	Python/PyTorch, R, SQL, MATLAB, AWS
ML and Deep Learning	Neural networks, Computer Vision, Supervision based learning
Robotics	Machine Vision, Autonomous Vehicles, Autonomous Vehicle Navigation
Tools	Jupyter, Git/Github, Overleaf, LaTeX

Publications

International Conferences

C1 **Mandalika, Sriram**, and Athira Nambiar."SegXAL: Explainable Active Learning for Semantic Segmentation in Driving Scene Scenarios." International Conference on Pattern Recognition. Cham: Springer Nature Switzerland, 2024.

C2 **Mandalika, Sriram**, Harsha Vardhan, Athira Nambiar. "PRIMEDrive-CoT: A Precognitive Chain-of-Thought Framework for Uncertainty-Aware Object Interaction in Driving Scene Scenario." 42nd IEEE/CVF Conference on Computer Vision and Pattern Recognition, 2025 **(Accepted)**

C3 **Mandalika, Sriram**, Lalitha V, Athira Nambiar. "Replay to Remember (R2R): An Efficient Uncertainty-driven Unsupervised Continual Learning Framework Using Generative Replay." International Conference on Machine Learning, 2025 **(Under Review)**

International Journals

J1 **Mandalika, Sriram**, Saiveena Suresh, Shilpi Garg, Sampath Kumar and S. C. Jayanthi. SScalable Automated Land Use and Land Cover Classification Using Deep Learning on Sentinel-2 Imagery: A Framework for Indian Region.SSubmitted to Big Earth Data, 2024. **(Under Review)**

Book Chapters

BC1 Aruna, S., G. Usha, A. Saranya, M. Maheswari, and **M. Annapoorna Sai Sriram Mandalika**. "Deep Learning-Based Speech Emotional Analysis Using Convolution Neural Network: Bi-Directional Long Short-Term Memory.In Machine and Deep Learning Techniques for Emotion Detection, pp. 96-116. IGI Global, 2024.

References

Dr. Athira Nambiar, Research Associate Professor, SRM Institute of Science and Technology, Chennai, India - athiram@srmist.edu.in

Dr. Saranya A, Associate Professor, SRM Institute of Science and Technology, Chennai, India - saranyaa2@srmist.edu.in

Dr. Saiveena Suresh, Head of Urban Hydrological Studies, National Remote Sensing Centre, ISRO - saiveena_s@nrsc.gov.in