

Mithun Parab

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Experience	FastStager <i>AI/ML Intern</i> Worked on diffusion models, vision-language architectures, and classification pipelines; achieved a 60% reduction in compute cost while improving model accuracy beyond baseline with a 3× inference speedup. 06/2025 – Present
	Sejong University, Seoul, South Korea Research Intern <i>Dr. YG. Kim & Dr. Palash Ingle</i> 05/24 – 01/25 Developed novel unsupervised models for anomaly detection in video streams; integrated the solutions into an existing pipeline, enabling label-free inference under real-world conditions.
	Indian Institute of Information Technology, Sri City, India Research Intern <i>Dr. Pavan Kumar B.N., Department of CSE</i> 09/23 – 03/24 Enhanced 3D SLAM precision using uncalibrated image-based techniques, achieving a 30% accuracy improvement over conventional calibration-dependent approaches.
Education	Master of Science Computer Science 07/22 – 07/24 R. J. College, Mumbai, India, CGPA: 8.88/10.00
	Bachelor of Science Information Technology 07/19 – 07/22 K. J. Somaiya College Of Science And Commerce, Mumbai, India, CGPA: 9.07/10.00
Selected Publications	A Comprehensive Study on LLM Agent Challenges, Palash Ingle, Mithun Parab , Pranay Lendave, B. N. Pavan Kumar, AAAI 2024 Spring Symposium on User-Aligned Assessment of Adaptive AI Systems.
	MT3DNet: Multi-Task Learning Network for 3D Surgical Scene Reconstruction Mithun Parab , Pranay Lendave, Jiyoung Kim, Palash Ingle, Thi Quynh Dan Nguyen https://doi.org/10.48550/arXiv.2412.03928
	Innovative Method for Camouflaged Wildlife Segmentation in Agricultural Practices, Mithun Parab , Palash Ingle, <i>IEEE Xplore Digital Library</i> , International Conference on Advancement in Computation & Computer Technologies, 10.1109/InCACCT61598.2024.10551184
	Image Enhancement and Exposure Correction Using Convolutional Neural Network (Best Paper Award), Mithun Parab , Amisha Bhanushali, Palash Ingle, B. N. Pavan Kumar, <i>SN Computer Science</i> , Volume 4, Number 2, 2023, doi: 10.1007/s42979-022-01608-w
Projects	Tetris-Inspired Video Synopsis A MCTS algorithm with a shared-backbone neural network for policy & value optimization, efficiently packing 3D tubes to reduce the time dimension in video synopsis.
	Unsupervised Video Anomaly Detection with Zero and Few-Shot Learning A transformer-based model with time and spatial attention mechanisms for extracting spatiotemporal features, trained unsupervised to predict future frames and compute anomaly scores.
	DINO-v2-based Method for Video Anomaly Detection A DINO-v2-based approach for video anomaly detection, using feature embeddings and prototype learning to group similar patterns while pushing apart different ones.
	3D Novel View Synthesis from Un-calibrated Images A system for synthesizing new 3D views from un-calibrated images, using a NeRF model optimized for Structure from Motion challenges via distinct MLP modules.
	3D Video Synopsis with Multi-task Learning A condensed video synopsis algorithm and Multi-Task Learning network for abnormal activity segmentation and depth mapping, facilitating 3D video summary reconstruction.
Skills & Interests	Languages: Python, C++, Java, Julia, R Technologies: AWS, Docker, Kubernetes, Kafka Tools: \LaTeX , Bash, Matlab, GNU Octave, Git Interests: ML, CV, AI, NLP Tools: Ray, Pinecone, FastAPI, BentoML Paradigms: Diffusion, LoRA, Quantization Libraries: LlamaIndex, LangChain, TRL, bitsandbytes, HuggingFace, DeepSpeed