

Prabhdeep Singh Sethi

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Objective: Seeking Full-Time Computer Vision Roles starting December 2024

EDUCATION

Carnegie Mellon University

Master of Science in Computer Vision (Robotics Institute, School of Computer Science) (GPA: 4.11/4)

Coursework: Advanced Computer Vision, 3D Vision, Multimodal Learning, Reinforcement Learning, Geometric Methods in Vision

Pittsburgh, PA

December 2024

Government College of Engineering, Nagpur

Bachelor of Engineering in Computer Science (GPA: 9.5/10)

Coursework: Operating Systems, Data Structures & Algorithms, Artificial Intelligence, Databases, Object Oriented Programming

Nagpur, India

August 2021

EXPERIENCE

Apple

Computer Vision Research Intern, Vision Pro Team

Sunnyvale, CA

05/2024 - 08/2024

- Developed an automated pipeline for immersive environments using SOTA 3D reconstruction for AR/VR applications.
- Led the end-to-end proof of concept development, integrating research-driven optimizations, and created a data capture app.

Wobot Intelligence

Computer Vision Engineer-II

New Delhi, India

02/2022 - 08/2023

- Led a 6 member team to deliver vehicle and person Re-Identification solutions, serving 1M+ cameras and 10,000+ customers.
- Implemented an attribute-based fuzzy search with local and global attention. Further utilized VAE for dimensionality reduction. This approach reduced false IDs by 65% and improved Rank-1 of ReID by 35% in our multi-camera object tracking algorithm.

Solar Industries India Ltd. (Research and Development Lab)

Senior Computer Vision Researcher

Nagpur, India

08/2021 - 01/2022

- Designed the pipeline for Product Inspection of critical military parts by using a Vision Transformer (ViT) for object detection, achieving 96.5% mAP for detecting 9 such parts. Deployed models using Nvidia Triton for enhanced operational efficiency.
- Developed Overspeeding & ANPR solutions with YOLOv4, PaddleOCR, DeepSORT for tracking & speed calc. (± 10 m/s)..

PUBLICATIONS

- S Jain*, A Kuthiala*, **PS Sethi**, P Saxena, “StyleSplat: 3D Object Style Transfer with Gaussian Splatting”, Advances in Neural Information Processing Systems (**NeurIPS**) 2024, Creative AI Track (In review) [\[Project Page\]](#)
- PS Sethi***, A Agrawal*, CMS Lezcano*, I Heredia*, “Listen Then See: Video Alignment with Speaker Attention”, Proceedings of the IEEE/CVF Conference on Computer Vision and Pattern Recognition (**CVPR**) Workshops, 2024 [\[Project Page\]](#)
- R Zawar, **PS Sethi**, R Roy, “Jensen-Shannon Divergence in Safe Multi-Agent RL”, in **ICLR**, Tiny Paper Track, 2024 [\[Paper\]](#)

SKILLS

Languages and Frameworks: Python, C++, Swift, Bash, SQL; PyTorch, PyTorch3D, TensorFlow, Numpy, OpenCV, Flask

Tools and Platforms: Docker, Triton, Git, DeepStream, TensorRT, AIMET, AWS, Azure

PROJECTS

Generalizable Sparse view 3D Object Reconstruction (3D Gaussian Splatting) [\[Project Page\]](#)

01/2024 - Current

Advisor: Dr Shubham Tulsiani

- Developed a feed forward network to represent 3D scenes using Gaussian Splatting in sparse settings with unposed cameras.
- Achieved to make it generalizable using transformer blocks to encode the latent 3D representation of the trained category.

GIF Tune (Video Diffusion) [\[Project Page\]](#)

02/2024 - 04/2024

- Developed GIF-Tune, a one-shot tuning strategy enabling continuous text-to-GIF synthesis from text prompts.
- Enhanced the output using depth-conditioned Stable Diffusion and 3D temporal attention layers from a single text-GIF pair.

UAV Detection (Small Object Detection) [\[Code\]](#)

10/2021 - 12/2021

- Enhanced UAV detection via GAN-based augmentation & tiling of infrared streams, using TensorRT Quantized YOLOv5s.
- The solution excelled in Anti-UAV Challenge by ICCV '21, delivering 37 FPS on Jetson TX2 achieving 95.1% mAP.
- Improved bird vs drone classification by 17% through trajectory analysis of flight pattern classified temporally using XGBoost.

Class Agnostic Object Segmentation - AV

02/2021 - 05/2021

- Improved class-agnostic object segmentation for Autonomous Vehicle; improved unknown object detection by 4.5%.
- Achieved the accuracy stated using self-supervised features from the DINO backbone and an adversarial training setup.