

Prabhdeep Singh Sethi

E-mail: prabhdes@andrew.cmu.edu | Website: bit.ly/prab | LinkedIn: [prabhdeep1999](https://www.linkedin.com/in/prabhdeep1999) | Github: [Prabhdeep1999](https://github.com/Prabhdeep1999) | Mob: (412) 589-8023
Objective: Seeking Full-Time Computer Vision Roles starting December 2024

EDUCATION

Carnegie Mellon University Pittsburgh, PA
Master of Science in Computer Vision (GPA: 4.11/4) December 2024
Coursework: Advanced Computer Vision, 3D Computer Vision, Multimodal Machine Learning, Reinforcement Learning

Government College of Engineering, Nagpur Nagpur, India
Bachelor of Engineering in Computer Science (GPA: 9.5/10) August 2021
Coursework: Operating Systems, Data Structures & Algorithms, Artificial Intelligence, Databases, Object Oriented Programming

EXPERIENCE

Apple Sunnyvale, CA
Computer Vision Research Intern, Vision Pro Team 05/2024 - Current

- 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 New Delhi, India
Computer Vision Engineer-II 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 modified EfficientNet for local and global feature extraction. Further utilized VAE for dimensionality reduction & designed dynamic cosine similarity thresholds using k-means clustering.
- This approach reduced false IDs by 65% and improved Rank-1 of ReID by 35% in our multi-camera object tracking algorithm.
- Achieved 55 HOTA (Higher Order Tracking Accuracy) on MOT17 with custom object tracker, reducing false tickets by 28%.

Solar Industries India Ltd. (Research and Development Lab) Nagpur, India
Senior Computer Vision Researcher 08/2021 - 01/2022

- Led Smart Blast Project, achieved fume toxicity detection through background subtraction and color clustering.
- 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.

Computer Vision Intern 01/2020 - 08/2021

- Developed Overspeeding and Automatic Number Plate Recognition solutions using YOLOv4, PaddleOCR for plate extraction, DeepSORT for real-time tracking and relative speed calculation with a margin of error of 10 m/s.

PUBLICATIONS

- S Jain*, A Kuthiala*, **PS Sethi**, P Saxena, “*StyleSplat: 3D Object Style Transfer with Gaussian Splatting*” [\[Project Page\]](#)
- 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 [\[Paper\]](#)
- R Zavar, **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; PyTorch, PyTorch3D, TensorFlow, Numpy, OpenCV, Flask
Tools and Platforms: Docker, Git, Triton, HuggingFace, TensorBoard, DeepStream, TensorRT, AIMET, SQL, 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.