Anubhav Gupta

+1-240-467-7513 | anubhav@umd.edu | https://learn2phoenix.github.io/

Education

- **University of Maryland, College Park**
  PhD, Computer Science — College Park, MD
- **University of Maryland, College Park**
  MS, Computer Science — College Park, MD
- **Indian Institute of Technology, Delhi**
  B.Tech., Electrical Engineering — New Delhi, India

Experience

- **University of Maryland, College Park** — *Jan'21 - Present*
  Graduate Assistant — College Park, MD
  - Advisor: Prof. Abhinav Shrivastava
  - Current Research Interests: Video understanding, learning grammar from videos, action understanding
- **Amazon** — *May'24 - Aug'24*
  Applied Scientist Intern — Sunnyvale, CA
  - Diffusion-based multi-view image editing for indoor scenes
  - Conceptualized and created a large-scale dataset starting from 3D-Front
- **Amazon** — *May'23 - Aug'23*
  Applied Scientist Intern — Sunnyvale, CA
  - Diffusion based key-stroke assisted human body editing (pose and body shape transformations). The intended application was a 2D virtual try-on
  - Worked with Stable Diffusion 1.5, and used ControlNets to modulate the latent space
- **Amazon** — *May'22 - Aug'22*
  Applied Scientist Intern — Seattle, WA
  - Worked on edge-based computer vision product focusing on objection detection
  - Built a prototype model and pushed it to production for field trial
  - Received a return offer for a full-time position
- **Swiggy** | — *Sep'20 - Jan'21*
  Data Scientist — Bangalore, India
  - Deep learning-based road network extraction from satellite imagery
  - Extracted building footprints at scale from OSM and constructed Point of Interest Polygons
- **Netradyne Technologies** | — *Jun'17 - Aug'20*
  Senior Research Engineer — Bangalore, India
  - Object Detection: Curated the datasets and trained the object detection models for different geographies.
  - Optimization and Engineering: model acceleration and compression for on-device analytics
  - Infrastructure Development: Primary developer for analytics video data lake and model evaluation tool

PUBLICATIONS

C=CONFERENCE, J=JOURNAL, S=IN SUBMISSION, T=THESIS

[C.1] Shuaiyi Huang, Mara levy **Anubhav Gupta**, et al. (2025). **TREND: Tri-teaching for Robust Preference-based Reinforcement Learning with Demonstrations**. In *ICRA 2025*

Preference feedback collected by human or VLM annotators is often noisy, presenting a significant challenge for preference-based reinforcement learning. To address this challenge, we propose TREND, a novel framework that integrates few-shot expert demonstrations with a tri-teaching strategy for effective noise mitigation

[C.2] Gowthami Somepalli*, **Anubhav Gupta***, et al. (2024). **Measuring Style Similarity in Diffusion Models**. In *ECCV 2024*

Can we measure the style-similarity between images? We propose Contrastive Style Descriptors (CSD) as a method to represent the style of an image. Using this model, we study the style replication in image generation models.

[C.3] Shihira R Maiya*, **Anubhav Gupta***, et al. (2024). **Latent-INR: A Flexible Framework for Implicit Representations of Videos with Discriminative Semantics**. In *ECCV 2024*

We show semantic capabilities in Implicit Neural Representations (INR) by proposing a novel framework that learns discriminative semantics in videos.

[C.4] Archana Swaminathan, **Anubhav Gupta**, et al. (2024). **LEIA: Latent View-invariant Embeddings for Implicit 3D Articulation**. In *ECCV 2024*

Modeling unseen 3D articulation states by interpolating across a learnable, view-invariant latent embedding space.

[C.5] Kamal Gupta, Gowthami Somepalli, **Anubhav Gupta**, et al. (2021). **PatchGame: Learning to Signal Mid-level Patches in Referential Games**. In *NeurIps 2021*

Emergent communication via mid-level patches in a referential game played on a large-scale image dataset

[C.5] Abhinav Ganesan, **Anubhav Gupta**, Jose Mathew et al. (2021). **Mining Points of Interest via Address Embeddings: An Unsupervised Approach**. In *LocalRec 2021*

Unsupervised PoI mapping (polygon boundaries) using GPS, OpenStreetMaps and Address Information in highly dense environments

PATENTS

[1] Michael Campos, **Anubhav Gupta**, et al. (2019). **Detection of driving actions that mitigate risk**. US, Patent No. 10782654 Publication Date: 2020/9/22

SELECTED PROJECTS

- **Error detection and correction in procedural videos**: Improving the performance on these tasks in long form procedural videos, leveraging action grammar *Ongoing Project*
  - Egocentric Datasets
  - Video Transformers
- **Model Analysis Tool: Conceptualized, proposed and started building the tool to evaluate vision models** *2019-2020*
  Tools: JavaScript, Django, MySQL, PyTorch
  - In-house (@Netradyne) web based tool to automatically evaluate proprietary models
  - Discover systemic faults in the models
  - Discover data gaps and generate insights for next training cycle
  - Demonstrated potential for significant research cost savings for model iteration

SERVICE

- **Outstanding Reviewer**, CVPR 2025
- Reviewer, ICRA 2025
- Reviewer, CVPR 2024
- Advisor, Swasti (an NGO working in India), Nov'24 - Present
- Workshop Organizing Committee Member: Open World Vision, CVPR 2023, Vancouver
- **Workshop Co-organizer**: Dealing With Novelty in the Open Worlds, WACV 2023, Hawaii
- Workshop Organizing Committee Member: Open World Vision, CVPR 2022, New Orleans
- **Workshop Co-organizer**: Dealing With Novelty in the Open Worlds, WACV 2022, Hawaii