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Priyank Pathak

Computer Vision (CS) PhD Student

Education

PhD, Computer Vision, Guide: Prof. Yogesh S Rawat   2023-26 *(Expected)*
University of Central Florida (Transferred from Stony Brook University). CGPA: 4.00/4.00

MS, Computer Science   2018-20
New York University, Courant (NYU). CGPA: 3.94/4.00

B.Tech, Computer Science & Electrical Engineering (Double Major)   2013-18
Indian Institute of Technology (IIT), Kanpur, CGPA: 8.5/10.0

Publication

- LR0.FM: Low-Res Benchmark and Improving robustness for Zero-Shot Classification in FMs   **ICLR'25**
- Video Person Re-ID: Fantastic Techniques and Where to Find Them   **AAAI'20**
- Fine-grained re-identification   Master's Thesis'20
- Pixel Onion: Peeling Bells and Whistles of Zero-Shot Object Detection in Pixelation   Preprint
- Colors See Colors Ignore: Clothes Changing ReID with Color Disentanglement   Preprint
- Coarse Attribute Prediction with Task Agnostic Distillation for Real World Clothes Changing ReID   Preprint

Work Experience

- **Research Assistant, National University of Singapore** (Internship)   Aug'22-Dec'22
  - Trained end-to-end model for long-range video understanding without I3D features.

- **Research Engineer, Amobee** (Full-time)   Jun'20-Aug'21
  - Performed unsupervised clustering of bid requests to accurately forecast traffic and engineered back-end.

- **Deep Learning Research, Clarifai** (Internship) *(Dr. Michael Gormish)*   May'19-Aug'19
  - Built the video back-end infrastructure (TensorFlow) and SOTA on video ReID (PyTorch)

- **Research Internship, Rice University** (Internship) *(Prof. Anshumali Srivastava)*   May'17-Aug'17
  - Applied VAE-GAN to audio spectrograms on audio frames to reconstruct phonemes of vocal recordings.

- **Cloud Computing, Reliance Jio** (Internship)   May'16-Aug'16
  - Implemented electronic signatures for PDFs. Activity tracker on Cloud involving self-written APIs.

Projects (Research & Miscellaneous)

- **Compilation of Low resolution works since 2017** *(Prof. Yogesh S. Rawat, UCF)*   *Ongoing*
  - An even playing field of all techniques for robustness against low resolution across CNNs and transformers.

- **Success of Filmmaking** || **Course Highlight Project** || (YouTube)   2022
  - D3 (JavaScript) dashboard with novel interactive plots for understanding the success of movies.

- **Local Learning on Transformers, SBU** *(Prof. Dimitris Samaras, SBU)* || (Arxiv)   2022
  - We have improved the local learning on Swin transformers, outperforming vanilla training.

- **Low-resolution action recognition for Transformers** *(Prof. Michael Ryoo, SBU)*   2021-22
  - Enhancing performance of transformers on HMDB-51 dataset for a 12x16 resolution, via distillation.

- **Natural Language Understanding** *(Prof. Katharina Kann, NYU)*   2019
  - Criteria for choosing the training samples from the auxiliary task with maximum gain for the main task.

- **Co-reference Resolution, Natural Language Understanding** *(NYU)* || (Github)   2019
  - BERT-based co-reference resolution and ablation study of current SOTA model (TensorFlow & PyTorch).

- **VAE Based Painting Analysis** *(Prof. Anshumali Srivastava, Rice)* || (Report)   2017
  - Predicting dates of artworks based on matching the latent embedding of paintings with their timeline.

- **Faster RCNN Tutorial (Object Detection)** || (Github)   2020
  - Faster R-CNN (Pytorch) guide and generalized the code for easy training on custom datasets.

- **Multi Agent Reinforcement Learning (MARL) Survey** || (Project Page)   2019
  - Surveyed MARL techniques, discussing their pros and cons, and proposed a transformer-based module.

Scholastic Achievements

- Lead research team for Briar (Defense fellowship for UCF), developing a real-world ReID surveillance system.
- Acknowledged as an outstanding reviewer for CVPR, and ICML; reviewer for NeurIPS and ICCV.
- Recognition for outstanding presenter during weekly research discussion for the entire CV Lab at SBU.
- Received *Academic Excellence Award* in undergrad for distinctive performance for *2013-14* and *2017-18*.
- Secured *All India Rank 1597* (among 1.3 million candidates; 99.88 percentile) in *IIT-JEE Advanced'13*.
- Secured All India rank *192* in *Kishore Vaigyanik Protsahan Yojana (KVPY) 2012-13*.