

POORVI HEBBAR

✉ poorvigpo@gmail.com | ☎ (+1) 412-979-8690 | 🌐 poorvirhebbbar.github.io | 🔗 linkedin.com/in/poorvi-hebbbar/

EDUCATION

Carnegie Mellon University

Master of Science in Computer Vision | GPA: 4.22/4

Key courses: Generative Computer Vision, Visual Learning and Recognition, Learning from 3D

Pittsburgh, PA

Dec 2023

Indian Institute of Technology, Bombay

Bachelor of Technology with Honors in Computer Science and Minors in Physics

Mumbai, India

May 2021

- Bagged **All India Rank 36** in IIT JEE Advanced among 1.4 million candidates (Top Female Ranker)
- Received the **Undergraduate Research Award** for Bachelor's Thesis

SKILLS

Programming

Python, C/C++, MATLAB, CUDA, JAVA, HTML/CSS, Javascript, Prolog, SQL, Scala, Spark

Frameworks and Softwares

PyTorch, Tensorflow, AWS, Vertex AI, Solidworks, Ansys, Gnuplot

RESEARCH PROJECTS

Diffusion-guided Reconstruction of Everyday Hand-Object Interaction Clips [\[blog\]](#)[\[paper\]](#)

Dec 2022 – Dec 2023

Advisor: *Prof. Shubham Tulsiani*, Physical Perception Lab | Paper accepted at ICCV 2023 (Oral)

- Inferred the time-persistent implicit field of a rigid hand-held object, the time-varying hand configurations and estimated their relative poses from monocular videos (in-the-wild, 1st and 3rd person); currently extending to articulating objects
- Leveraged the hand configuration and category label as a prior to model the conditional distribution of object renderings
- Guided reconstruction by these augmented data driven priors to address occlusions and limited viewpoint variations

Robust Classification of Histology Images Exploiting Adversarial Autoencoders [\[blog\]](#)[\[paper\]](#)

Jul 2020 - Jun 2021

Paper accepted at IEEE EMBC 2021

- Proposed a novel weighing scheme of training instances based on likelihood of the encoded features in latent space
- Generated robust features with optimized priors, achieved 80.9% classification accuracy on noisy histology datasets

3D Human Pose Estimation and Future Pose Prediction [\[blog\]](#)

Jan 2021 - Jun 2021

- Implemented PoseBERT with relative positional embedding to learn pose-representations from monocular videos
- Investigated an autoregressive OpenAI GPT2 model to predict human motion; optimized the rate at which output is fed
- Obtained ~4% improvement in pose retrieval scores and ~11% reduction in absolute pose errors on Human3.6M dataset

Anomaly Detection in Proctoring Videos (collaboration with CodeTantra) [\[blog\]](#)

Jul 2020 - Dec 2020

- Integrated an LSTM autoencoder model with human pose features to estimate reconstruction errors in proctoring videos
- Successfully employed online sub-modular maximization to detect top 10% aberrant segments in synchronous settings

WORK EXPERIENCE

Skill AI | Robotics Research Engineer (Employee #5) | San Mateo, CA

Feb 2024 – Present

- Working towards foundational intelligence for any robot, any task with a single brain
- Building omni-bodied navigation policies that generalize across diverse robot embodiments
- Developing robot localization systems to reliably estimate a robot's pose within a given scene

Qualcomm AI Research | Autonomous Driving Intern | San Diego, CA

May 2023 - Aug 2023

- Optimized the attention mechanism in Cross View Transformers to improve latency from 3 to 113 fps for BEV Perception
- Conducted Neural Architectural Search (NAS) to find backbones that are ~32% faster, while sustaining baseline accuracy
- Accelerated data loading by 2x for cloud based distributed training and integrated with Hardware-In-Loop on Vertex AI

Goldman Sachs | Quantitative Risk Analyst | Bangalore, India

Jun 2021 - Jul 2022

- Backfilled reliable time series for swap rates and Euro future prices of various currencies to aid the LIBOR Transition
- Drafted an unsupervised framework to identify anomalies in risk metrics, reducing mitigation time from 1 day to 2 hours
- Achieved 97.3% validation accuracy and reduced the PnL estimation time by 47% for 5000 pandemic market-scenarios

Google Research | Machine Learning Intern | Bangalore, India

Jul 2020 - Sep 2020

- Collaborated with a team of 4 to design, develop and launch a digital content recommendation app based on past swaps
- Trained a matrix factorization model with collaborative filtering and embedding of the content vocabulary
- Customized newsfeed based on preferences and general popularity to balance users' taste and awareness of trend

ACHIEVEMENTS AND ACTIVITIES

- One among the 10 Indians to secure the KC Mahindra Scholarship of INR 500 thousand for higher studies 2022
- Awarded the **Sports Roll of Honor** for an exceptional contribution to the Institute Athletics team's success 2021
- Part of the **Institute Student Satellite Team**, modeled the mechanical structure of IITB's second satellite: **Advitiy** 2019
- Accorded the **Len Bassar Award** for scientific leadership at the International Science School camp, Sydney 2018
- Honored with the prestigious KVPY Fellowship by the Government of India with an **All India Rank 7** 2017