Pranay Gupta

pranayguptastudent@gmail.com | +91 9989875972 | Google Scholar | LinkedIn | Github | Homepage

EDUCATION

Dual Degree (B.Tech + MS by Research) in Computer Science   Aug. 2016 – present
International Institute of Information Technology, Hyderabad

- MS CGPA: 9.25/10
- B.Tech CGPA: 7.91/10

PUBLICATIONS

Quo Vadis, Skeleton Action Recognition?   IJCV, 2021
Pranay Gupta, Anirudh Thatipelli, Aditya Aggarwal, Shubh Maheshwari,
Neel Trivedi, Sourav Das, Ravi Kiran Sarvadevabhatla

Syntactically guided generative embeddings for zero shot skeleton action recognition   ICIP, 2021
Pranay Gupta, Divyanshu Sharma, Ravi Kiran Sarvadevabhatla

News KVQA   PAKDD , 2022
Pranay Gupta, Manish Gupta

EXPERIENCE

Pre-Doctoral Apprenticeship   Feb 2022 – Present
TCS research   *Delhi, India*

- Worked under the guidance of Prof. Rahul Narain and Ms. Ramya Hebbalaguppe
- Implemented intrinsic symmetrisation for improved single view 3D reconstruction

Research Intern   May 2021 – December 2021
TCS research   *Delhi, India*

- Worked under the guidance of Prof. Rahul Narain and Ms. Ramya Hebbalaguppe
- Implemented 3-D convolutional networks to approximate the implicit functions for 3-D single view reconstruction.
- Employed an energy based out-of-distribution(OOD) detection classifier to increase robustness of single view reconstruction.

Undergraduate Research Assistant   June 2018 – June 2021
Center for Visual Information Technology(CVIT), IIIT-H   *Hyderabad, Telengana*

- Advised by Prof. S Ravi Kiran
- Investigated the status quo for skeleton based action recognition. Explored new frontiers by curating datasets for into-the-wild and out-of-context action classes.
- Devised a VAE backed approach which learned syntactically aware embeddings for zero shot and generalized zero shot skeleton action recognition. Achieved State of the Art results on the NTU-60 and NTU-120 datasets

Applied Scientist Intern   June 2020 – August 2020
Amazon India   *Bengaluru, Karnataka*

- Leveraged a siamese network with a bert based backbone to increase coverage for semantic similarity between query and product description.

- Applied transfer learning to techniques for semantic similarity for multilingual data. Fine-tuned models trained on data in English language with data in other European languages.

Google Summer of Code Intern   June 2018 – August 2018
Purr-Data   *Remote*

- Successfully updating purr-data's core and the external libraries that ship with purr-data light from single precision float to double precision. Documented the process of updating the rest.

Intern   August 2017 – December 2017
Variance AI   *Hyderabad, Telengana*

- Yoga pose correction using the skeleton pose detected via Kinect sensor. Tested Openpose for real-time pose detection and correction by matching joint rotations with the ideal yoga pose.

Teaching Assistant   January 2020 – April 2020
IIIT-H   *Hyderabad, Telengana*

- TA for the computer vision course taught by Dr. Avinash Sharma at IIIT-H in spring 20

SCHOLASTIC ACHIEVEMENTS

Qualcomm Innovation Fellowship(QIF) India 2021 Winner Won fellowship worth INR 1 million for our research proposal. Awarded to 13 out of 96 teams from the top-15 institutes of India.

Dean's Merit List of Academic Excellence 2019-20. Awarded to top 20% students across the batch.

National Talent Search Examination(NTSE) Scholar. All India Examination for scholarship to top 1500 students.

TECHNICAL SKILLS

Languages: Python, Matlab, C/C++, HTML/CSS
Developer Tools: Git, Vim, VS Code, AWS
Libraries: Pytorch, Opencv, Scikit-Learn, Pandas, NumPy, Matplotlib

PROJECTS

News-VQA
- Independent Study project advised by Dr. Manish Gupta
- Curated a new large scale dataset(1 million QA pairs) for the task of factual question answering about named entities in news clips. Automated question generation using video captions, subtitles and knowledge base facts
- Proposed a multi-modal Question Answering approach, backed by Bert model for text processing and Faster-RCNN for visual understanding.

Distributed Attendance System
- Automatic Attendance System based on Face Detection and Recognition via Facenet. Distributed System, worked simultaneously with multiple cameras.

Mining on Manifolds:Metric Learning with Labels
- Implemented the paper "Mining on Manifold:Metric Learning without Labels as a part of the course project in the computer vision course

Digital Photography with Flash and No Flash Image pairs
- Implemented the paper "Digital photography with flash and no flash image pairs" as a part of the digital image processing course project.
- Functionalities include denoising and detail transfer, white-balancing, continuous flash and red-eye removal.

3D shooting and navigation game
- 3D game inspired by legend of Zelda:Wind Waker, implemented in c++ using opengl3. Had functionalities for navigation in a 3d world, attacking the chasing enemies.

Tunnel Rush
- Web based game implemented using javascript and webgl, with lighting and shading effects.

Ultimate TIC TAC TOE bot
- Implemented as a part of a course project in Artificial Intelligence course. Created an AI bot to plat 4*4*4*4 tic-tac-toe, using minimax and alpha-beta pruning algorithm

<u>Bash Shell</u>
- Implemented as a part of a course project in Operating Systems course. Developed a unix shell in C. Implemented basic functionalities like killing a process, input/output redirection, piping and signal handling

Relevant Courses Taken

Computer Vision, Digital Image Processing, Mobile Robotics
Statistical Methods in AI, Optimisation Methods, Linear Algebra, Data Analytics
Software Engineering, Data Structure and Algorithms, Operating Systems, Distributed Systems