Ankit Goyal

PhD Student, Princeton University
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https://imankgoyal.github.io/

Education

2018-2022 (Expected) **Ph.D. in Computer Science**, *Princeton University*.
Advisor: Jia Deng

2016-18 **M.S. in Computer Science and Engineering**, *University of Michigan*.
GPA: 3.97/4.0, Track: Artificial Intelligence
A+ (outstanding grade above A) in 2/6 courses

2012-16 **B.Tech. in Electrical Engineering**, *Indian Institute of Technology (IIT) Kanpur*.
CPI: 9.8/10.0, Minor: Computer Science
Rank 2/150 students | A* (outstanding grade above A) in 10/45 courses

Research Experience

June'21 - Nov'21 **Research Intern**, *NVIDIA Robotics Research Lab*.
Mentor: Dieter Fox
Built state-of-the-art object manipulation system and executed it on real robots.

Dec'20 - May'21 **Research Intern**, *Intel Intelligent Systems Lab*.
Mentor: Vladlen Koltun
Conceptualized non-deep neural networks for extremely fast image recognition and object detection.

Sep'18 - Present **Graduate Student Research Assistant**, *Princeton University*.
Mentor: Jia Deng
Conceptualized and built ML systems for 3D perception, reasoning and interaction.

Sep'16 - Aug'18 **Graduate Student Research Assistant**, *University of Michigan*.
Mentor: Jia Deng
Developed natural language processing models with spatial reasoning capabilities.

May'16 - July'16 **Research Intern**, *Microsoft Research (MSR)*.
Mentor: Prateek Jain
Built ML models that could fit on IoT devices with only 2kB memory.

May'15 - July'15 **Research Intern**, *University of Southern California (USC)*.
Mentor: Shrikanth S. Narayanan
Developed multimodal ML models for emotion prediction in movies.

May'14 - April'15 **Research Assistant**, *IIT Kanpur*.
Mentor: Nischal Verma
Developed computer vision based systems for autonomous inventory management in warehouse.

Awards / Recognition

2021 **Qualcomm Innovation Fellowship**.
$100K Research Grant for 1 year.

2021 **Outstanding Reviewer**, *ICCV*.
Top 5% of all reviewers at tier-1 computer vision conference

2016 **Sridhar Memorial Prize**, *IIT Kanpur*.
Awarded to the best student in the Department of Electrical Engineering.

2015 **Viterbi-India Scholarship**, *USC and Indo-US Science and Technology Forum (IUSSTF)*.
Selected for the prestigious Viterbi-India Program to conduct research in USC.

2013-2015 **Academic Excellence Award**, *IIT Kanpur*.
Awarded for 3 consecutive years for distinctive academic performance.

Publications

2021 **IFOR: Iterative Flow Minimization for Robotic Object Rearrangement**.
A Goyal, A Mousavian, C Paxton, Y W Chao, B Okorn, J Deng, D Fox
Under Review

2021 **Non-Deep Networks**.
A Goyal, A Bochkovskiy, J Deng, V Koltun
Under Review

2021 **Coupled Iterative Refinement for 6D Multi-Object Pose Estimation**.
L Lipson, Z Teed, **A Goyal**, J Deng
Under Review

2021 **Revisiting Point Cloud Classification with a Simple and Effective Baseline**.
A Goyal, H Law, B Liu, A Newell, J Deng
International Conference on Machine Learning (ICML)

2020 **Rel3D: A Minimally Contrastive Benchmark for Grounding Spatial Relations in 3D**.
A Goyal, K Yang, D Yang, J Deng
Neural Information Processing Systems (NeurIPS), Spotlight (Top 4% of submitted papers)

2020 **PackIt: A Virtual Environment for Geometric Planning**.
A Goyal, J Deng
International Conference in Machine Learning (ICML)

2019 **Semantic Relation Detection Between Construction Entities To Support Safe Human-Robot Collaboration in Construction**.
D Kim, **A Goyal**, A Newell, S Lee, J Deng, V Kamat
ASCE International Conference on Computing in Civil Engineering (i3CE)

2018 **Think Visually: Question Answering through Virtual Imagery**.
A Goyal, J Wang, J Deng
Annual Meeting of the Association of Computational Linguistics (ACL)

2017 **ProtoNN: Compressed and Accurate kNN for Resource-scarce Devices**.
C Gupta, AS Suggala, **A Goyal**, HV Simhadri, B Paranjape, A Kumar, S Goyal, R Udupa, M Varma, P Jain
International Conference in Machine Learning (ICML)

2016 **A Multimodal Mixture-of-Experts Model for Dynamic Emotion Prediction in Movies**.
A Goyal, N Kumar, T Guha, SS Narayanan
IEEE International Conference on Acoustics, Speech, and Signal Processing (ICASSP)

2015 **Object Matching using Speeded Up Robust Features**.
NK Verma, **A Goyal**, AH Vardhan, RK Sevakula, A Salour
Asia Pacific Symposium on Intelligent and Evolutionary Systems (IES)

2015 **Template Matching for Inventory Management using Fuzzy Histogram and Spatial Filters**.
NK Verma, **A Goyal**, A Chaman, RK Sevakula and A Salour
IEEE Conference on Industrial Electronics and Applications (ICIEA)

Teaching Experience

Fall 2019 **COS529 Advanced Computer Vision**, *Princeton University*.
Graduate Student Instructor

Fall 2018 **COS429 Computer Vision**, *Princeton University*.
Head Teaching Assistant

Fall 2017 **EECS442 Computer Vision**, *University of Michigan*.
Winter 2018 Graduate Student Instructor

Service

2020-22 **Reviewer**.
- **2021**: ICLR, CVPR, ICCV, ICML, NeurIPS
- **2020**: ICLR, CVPR, ECCV, TPAMI

2013-15 **Counselling Service**, *IIT Kanpur*.
- **Assistant Coordinator**: Responsible for managing sensitive situations in the undergraduate community and organizing week-long orientation for over 800 freshers
- **Academic Mentor**: Mentored students struggling academically.
- **Student Guide**: Ensured smooth induction of 6 freshmen into the college environment.