

# Ankit Goyal

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🌐 <https://imankgoyal.github.io/>

## Education

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

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## Publications

- 2022 **IFOR: Iterative Flow Minimization for Robotic Object Rearrangement.**  
A Goyal, A Mousavian, C Paxton, Y W Chao, B Okorn, J Deng, D Fox  
Conference on Computer Vision and Pattern Recognition (CVPR)
- 2022 **Coupled Iterative Refinement for 6D Multi-Object Pose Estimation.**  
L Lipson, Z Teed, A Goyal, J Deng  
Conference on Computer Vision and Pattern Recognition (CVPR)
- 2022 **Non-Deep Networks.**  
A Goyal, A Bochkovskiy, J Deng, V Koltun  
*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)

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## 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

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## 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.