

Ankit Goyal

Research Scientist, NVIDIA

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Work Experience

- Aug'22–Now **Research Scientist, NVIDIA Robotics Research Lab.**
Mentor: Prof. Dieter Fox
- Sep'18–Aug'22 **Graduate Student Research Assistant, Princeton University.**
Mentor: Prof. Jia Deng
- Jun'21–Nov'21 **Research Intern, NVIDIA Robotics Research Lab.**
Mentor: Prof. Dieter Fox
- Dec'20–May'21 **Research Intern, Intel Intelligent Systems Lab.**
Mentor: Vladlen Koltun
- Sep'16–Aug'18 **Graduate Student Research Assistant, University of Michigan.**
Mentor: Prof. Jia Deng
- May'16–July'16 **Research Intern, Microsoft Research (MSR).**
Mentor: Prateek Jain
- May'15–July'15 **Research Intern, University of Southern California (USC).**
Mentor: Prof. Shrikanth S. Narayanan
- May'14–Apr'15 **Research Assistant, IIT Kanpur.**
Mentor: Prof. Nischal Verma

Education

- 2018–22 **Ph.D. in Computer Science, Princeton University.**
Advisor: Prof. Jia Deng
Thesis: Towards Geometric Intelligence: Seeing, Grounding and Reasoning over Geometries
- 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

Awards and Recognition

- 2023 **RSS Pioneers Award, Cohort of 30 World's Early-Career Robotics Researchers.**
- 2022 **NeurIPS Scholar Award.**
- 2021 **Qualcomm Innovation Fellowship.**
- 2021 **Outstanding Reviewer, ICCV, Top 5% of all reviewers.**
- 2016 **Sridhar Memorial Prize, IIT Kanpur, Best student in Electrical Engineering.**
- 2015 **Viterbi-India Scholarship, USC and Indo-US Science and Technology Forum (IUSSTF).**
- 2013-2015 **Academic Excellence Award, IIT Kanpur, Awarded thrice for academic performance.**

Publications

- 2023 **RVT: Robotic View Transformer for 3D Object Manipulation.**
A Goyal, J Xu, Y Guo, V Blukis, YW Chao, D Fox
Conference on Robot Learning (CoRL), Oral (Top 6.6% of submitted papers)
Also in NeuRL-RMW @ CoRL 2023
- 2023 **Shelving, Stacking, Hanging: Relational Pose Diffusion for Multi-modal Rearrangement.**
A Simeonov, A Goyal, L Manuelli, L Yen-Chen, A Sarmiento, A Rodriguez, P Agrawal, D Fox
Conference on Robot Learning (CoRL)

- 2023 **Infinite Photorealistic Worlds using Procedural Generation.**
A Raistrick, L Lipson, Z Ma, L Mei, M Wang, Y Zuo, K Kayan, H Wen, B Han, Y Wang, A Newell, H Law, **A Goyal**, K Yang, J Deng
Conference on Computer Vision and Pattern Recognition (CVPR)
- 2023 **ProgPrompt: Generating Situated Robot Task Plans using Large Language Models.**
I Singh, V Blukis, A Mousavian, **A Goyal**, D Xu, J Tremblay, D Fox, J Thomason, A Garg
International Conference on Robotics and Automation (ICRA)
Also in Autonomous Robots, LaRel @ NeurIPS 2022 and LangRob @ CoRL 2022
- 2022 **Non-Deep Networks.**
A Goyal, A Bochkovskiy, J Deng, V Koltun
Neural Information Processing Systems (NeurIPS)
- 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)
- 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)

Notable Talks

- Nov '23 **Spotlight NeuRL-RMW @ CoRL 2023**, *Robotic View Transformer for 3D Object Manipulation.*
- Oct '23 **UW Robotics colloquium**, *RVT: Robotic View Transformer for 3D Object Manipulation.*
- Aug '23 **Seattle Robotics Club**, *Towards General Purpose Robotic Learning.*
- Apr '23 **MILA Computer Vision Reading Group**, *Robotic View Transformer for 3D Object Manipulation.*
- Feb '23 **NVIDIA NVCV All-hands**, *Robotic View Transformer for 3D Object Manipulation.*

Mentoring

- 2022 **Anthony Simeonov**, *PhD MIT.*
- 2020 **Bowei Liu**, *BS Princeton.*

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*, Graduate Student Instructor.
Winter 2018

Service

- 2020-23 **Reviewer.**
- **2023:** CVPR, RSS
 - **2022:** ICLR, CVPR, ECCV, ICML, NeurIPS
 - **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.