

# Saurabh Gupta

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## CONTACT INFORMATION

Office address: 319 Coordinated Science Laboratory,  
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Email address: [saurabhg@illinois.edu](mailto:saurabhg@illinois.edu)  
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Google scholar: <https://scholar.google.com/citations?user=1HO5UacAAAJ>

## AFFILIATION

- **University of Illinois at Urbana-Champaign**  
Wendell and Rita Dunning Fellow in Electrical and Computer Engineering (0%) 2024 –  
Associate Professor, Electrical and Computer Engineering (100%) 2025 –  
Associate Professor (Affiliate), Computer Science (0%) 2025 –  
Associate Professor (Affiliate), Coordinated Science Laboratory (0%) 2025 –  
Assistant Professor, Electrical and Computer Engineering (100%) 2019 – 2025

## EDUCATION

- **University of California, Berkeley** 2011 – 2018  
*Ph.D. in Computer Science*  
Advisor: Prof. Jitendra Malik  
Thesis title: Representations for Visually Guided Actions
- **Indian Institute of Technology, Delhi** 2007 – 2011  
*B. Tech in Computer Science and Engineering*  
President's Gold Medalist

## PREVIOUS FULL-TIME POSITIONS

- **Facebook AI Research** 2018 – 2019  
Research Scientist (Research Manager: Abhinav Gupta)

## RESEARCH INTERESTS

- Computer vision, robotics, and machine learning.

## SELECTED AWARDS AND HONORS

- Listed as a **Teacher Ranked as Excellent By Their Students** in Spring 2025.
- **Wendell and Rita Dunning Faculty Fellow** in Electrical and Computer Engineering at UIUC, 2024.
- **2nd place in Consistent Motion Reconstruction** at Workshop on Observing and Understanding Hands in Action at ICCV at International Conference on Computer Vision (ICCV) 2023.
- **Andrew T. Yang Research and Entrepreneurship Award 2022.**
- **NSF CAREER Award 2022.**

- **Amazon Research Award 2020.**
- **1st place** in AI Habitat Challenge RGB-D track, CVPR 2019.
- **1st place** in AI Habitat Challenge RGB track, CVPR 2019.
- **1st place** in MS COCO Captioning Challenge, CVPR 2015.
- **Google US/Canada Fellowship in Computer Vision 2015.**
- **Outstanding Reviewer:** ICCV 2015.
- **1st place** in RGB-D Indoor Scene Semantic Segmentation Challenge at Reconstruction Meets Recognition Challenge, ICCV 2013.
- **Berkeley Graduate Student Fellowship 2011.** Awarded to the top 4% graduate student admits every year.
- **President's Gold Medal** for securing the highest CGPA across all students who graduated from Indian Institute of Technology Delhi in 2011.
- **Student Undergraduate Research Award (SURA) 2009** and **Kalpna Chawla Award** for the research project on Activity Analysis at IIT Delhi.

## GRADUATE STUDENTS

### Ph.D.

1. **Dr. Matthew Chang**, *Robot Learning from Videos* 2019 – 2024  
Recipient of the **CSL Best Ph.D. Thesis Award, 2025.**  
**Next:** Research Scientist at Meta AI Research.
2. **Dr. Aditya Prakash**, *Hands in Action: From 4D Reconstruction to Animation and Robotics* 2021 – 2025  
Co-advised with Prof. David Forsyth  
Recipient of the **CS Outstanding Graduate Student Award, 2025.**  
**Next:** Research Scientist at Skild AI.
3. **Arjun Gupta**, *Towards Generalizable Mobile Manipulation* 2021 – 2026  
Recipient of the **Andrew T. Yang Research and Entrepreneurship Award, 2022.**
4. **Shaowei Liu**, *Understanding and Generating Motion in a Dynamic World* 2021 – 2026  
Co-advised with Prof. Shenlong Wang
5. **Runpei Dong** 2024 – 2029
6. **Xialin He** 2024 – 2029
7. **Rahul Ramachandaran** 2025 – 2030

### M.S.

1. **Krishna Agaram** 2025 –
2. **Xiaoyu Zhang** 2025  
**Next:** 1X Technologies
3. **Michelle Zhang**, *Opening cabinets & drawers in the real world using a commodity mobile manipulator* 2024  
**Next:** Qualcomm.
4. **Arjun Gupta**, *Learning value functions from undirected state-only experience* 2022  
**Next:** Continuing on for his PhD at UIUC with me.

5. **Mohit Goyal** 2022  
**Next:** Software Engineer at Google.
6. **Sahil Modi**, *Tracking Objects and Distinguishing their States by Watching Egocentric Videos* 2022  
**Next:** Deep Learning SWE at NVIDIA.
7. **Rishabh Goyal**, *Inferring Object States and Articulation Modes from Egocentric Videos* 2021  
**Next:** Computer Vision Engineer at Verkada.

## TEACHING EXPERIENCE

- **University of Illinois Urbana-Champaign:**

- ECE 494 / CS 444: Deep Learning for Computer Vision Fall 2025, Enrollment: 137  
<https://saurabhg.web.illinois.edu/teaching/cs444/fa2025/>
- ECE 598SG / CS 598SG: Robot Learning Spring 2025, Enrollment: 30  
<https://saurabhg.web.illinois.edu/teaching/ece598sg1/sp2025/>
- CS 444: Deep Learning for Computer Vision Fall 2024, Enrollment: 174  
<https://saurabhg.web.illinois.edu/teaching/cs444/fa2024/>
- CS 543 / ECE 549: Computer Vision Spring 2024, Enrollment: 120  
<http://saurabhg.web.illinois.edu/teaching/ece549/sp2024/>
- CS 444: Deep Learning for Computer Vision Fall 2023, Enrollment: 99
- CS 543 / ECE 549: Computer Vision Spring 2023, Enrollment: 122
- ECE 598SG: Special Topics in Learning-based Robotics Fall 2022, Enrollment: 23
- ECE 598SG: Special Topics in Learning-based Robotics Fall 2021, Enrollment: 56
- CS 543 / ECE 549: Computer Vision Spring 2021, Enrollment: 149
- ECE 598SG: Special Topics in Learning-based Robotics Fall 2020, Enrollment: 29
- CS 543 / ECE 549: Computer Vision Spring 2020, Enrollment: 179
- ECE 598SG: Special Topics in Learning-based Robotics Fall 2019, Enrollment: 38

- **Guest Lectures:**

- Action and Perception at University of Michigan on “Navigation” and “Robot Learning from Videos” Spring 2024
- Machine Learning for Signal Processing at UIUC on “Computer Vision” Fall 2019
- Computer Vision Class at IIT Delhi on “Robot Navigation” Fall 2017
- Computer Vision Class at UC Berkeley on “Robot Navigation” Spring 2017

- **Teaching Assistant:**

- **CS 280: Computer Vision**, Prof. Jitendra Malik, Prof. Alexei Efros Fall 2013
- **CS 188: Artificial Intelligence**, Prof. Dan Klein, Prof. Pieter Abbeel Fall 2012

## EXTERNAL SERVICE

- Area Chair for CVPR 2019, CVPR 2021, NeurIPS 2022, CVPR 2023, ICCV 2023, CVPR 2024, CoRL 2024, CVPR 2025
- NSF Panelist 2020, 2023, 2024.
- Reviewer for RSS Pioneers 2023 – 2024.
- Associate Editor for ICRA 2021.

- Organized workshop on *Benchmarking in Robotics* in August 2019.
- Organized tutorial at CVPR 2019 on *Bringing Robots to the Vision Community*.
- Organized workshop at CVPR 2019 on *Computer Vision in 5 Years*.
- Organized tutorial at ICVGIP 2018 on *Learning-based techniques for visually-guided robotic manipulation and navigation*.
- Organized workshop at ECCV 2018 on *Visual Learning and Embodied Agents in Simulation Environments*.
- Reviewer for PAMI, IJCV, CVPR, ECCV, ICCV, ICML, NIPS, SIGGRAPH, ICLR, ICRA, CoRL, BMVC, IROS, IJCAI, ACCV, 3DV, ICVGIP, IKDD CODS, SIGGRAPH Asia.

## INVITED TALKS

- **Towards Generalizable Mobile Manipulation (2025)**  
Fifth International Workshop on Generative AI and Human-Robot Interaction at Indian Institute of Technology, Allahabad,  
Robotics Seminar, Cornell University  
EMBER Lab, UC Berkeley
- **Teaching Robots Common Sense (2024)**  
Saturday Engineering for Everyone at University of Illinois Urbana-Champaign
- **Robot Learning by Understanding Egocentric Videos (2024)**  
Fourth International Workshop on Generative AI and Human-Robot Interaction at Indian Institute of Technology, Allahabad,  
GRASP Seminar at University of Pennsylvania,  
University of Washington,  
Allen Institute for AI,  
RI Seminar at CMU,  
Massachusetts Institute of Technology (MIT),  
University of Michigan
- **Guest Lectures on Action and Perception (2024)**  
University of Michigan EECS 598-010: Action and Perception.
- **Robot Learning by Understanding Egocentric Videos (2023)**  
Learning by Asking for Intelligent Robots and Agents Workshop at RO-MAN 2023.
- **Understanding and Articulating Articulated Objects (2023)**  
Workshop on 3D Vision and Robotics, CVPR 2023
- **Robot Learning by Understanding Egocentric Videos (2023)**  
Embodied AI Workshop, CVPR 2023
- **Learning to Articulate Doors and Manipulate Vines (2023)**  
Illinois Scholars Undergraduate Research (ISUR) Seminar, UIUC 2023
- **Robot Learning by Understanding Egocentric Videos (2023)**  
VASC Seminar, CMU, 2023
- **Imbuing Robots with Common Sense (2022)**  
GFX Research Scholars seminar, UIUC
- **Use of Machine Learning in Robotics (2022)**  
Faculty Development Program, Swami Keshvanand Institute of Technology, Management & Gramothan, Jaipur, India.

- **Representations for Visual Navigation and How to Train Them** (2021)  
Virtual Seminar Series on Geometry Processing and 3D Computer Vision (3DGV).
- **Learning to Move and Moving to Learn** (2021)  
3D Scene Understanding for Vision, Graphics, and Robotics Workshop at CVPR 2021.  
Visual Learning and Reasoning for Robotics Workshop at RSS 2021.
- **Robot Learning by Understanding Egocentric Videos** (2021)  
Computational Sensorimotor Learning (CSL) Seminar at CSAIL@MIT.
- **Learning to Speculate about People and Places for Visual Navigation** (2021)  
Perception and Control for Autonomous Navigation in Crowded, Dynamic Environments Workshop at RSS 2021.
- **Learning to Act by Watching Videos** (2019)  
Multi-Modal Learning from Videos Workshop at CVPR 2019.
- **Perception and Visual Navigation in 3D Scenes** (2018)  
University of Illinois at Urbana-Champaign,  
Carnegie Mellon University,  
Cornell University,  
University of Washington,  
ETH Zürich,  
University of Pennsylvania,  
University of Texas Austin,  
Princeton University,  
Georgia Institute of Technology,  
Brown University,  
New York University,  
University of Wisconsin at Madison,  
Toyota Institute of Technology,  
Simon Fraser University,  
University of British Columbia.  
Berkeley AI Research Seminar.  
Facebook AI Research.  
NVidia.  
SILO Seminar (University of Wisconsin at Madison).
- **Representations for Visually Guided Actions** (2017)  
GRASP Seminar at University of Pennsylvania.
- **Cognitive Mapping and Planning** (2017)  
Redwood Center for Theoretical Neuroscience, UC Berkeley.  
Indian Institute of Technology (IIT) Delhi.  
Berkeley AI Research Seminar.  
Google Brain.  
OpenAI.  
Lyft.
- **Detailed Scene Understanding from RGB-D Images** (2016)  
CMU VASC seminar.  
Toyota Technological Institute at Chicago (TTIC) Young Researcher Seminar Series.  
Allen Institute for Artificial Intelligence (AI2).

Workshop on Understanding 3D and Visuo-Motor Learning at 3D Vision (3DV) Conference. Indian Institute of Technology (IIT) Delhi.

- **Image Captioning** (2015)  
Large-scale Scene Understanding (LSUN) workshop at CVPR 2015.
- **RGB-D Scene Understanding** (2014)  
Reconstruction Meets Recognition Challenge workshop at ECCV 2014.  
Reconstruction Meets Recognition Challenge workshop at ICCV 2013.  
Microsoft Research, Redmond.
- **Perceptual Organization & Recognition of Indoor Scenes from RGB-D Images** (2013)  
Conference Talk at CVPR 2013.  
Visual Computing Lab, UC Berkeley.

## CONFERENCE PUBLICATIONS

**H-index:** 42, **citations:** 18.4K, as per <https://scholar.google.com/citations?user=1HO5UacAAAAJ>.

\*denotes equal contribution.

1. **Arjun Gupta**, **Rishik Sathua**, and **Saurabh Gupta**. Precise mobile manipulation of small everyday objects. In *Robotics Automation Letters (RA-L)*, 2026.
2. **Shaowei Liu**, David Yifan Yao, **Saurabh Gupta\***, and Shenlong Wang\*. Visual sync: Multi-camera synchronization via cross-view object motion. In *Advances in Neural Information Processing Systems*, 2025.
3. Junyu Zhang\*, **Runpei Dong\***, Han Wang, Xuying Ning, Haoran Geng, Peihao Li, **Xialin He**, Yutong Bai, Jitendra Malik, **Saurabh Gupta**, and Huan Zhang. AlphaOne: Reasoning models thinking slow and fast at test time. In *Empirical Methods in Natural Language Processing (EMNLP)*, 2025.
4. **Xialin He\***, **Runpei Dong\***, Zixuan Chen, and **Saurabh Gupta**. Learning getting-up policies for real-world humanoid robots. In *Robotics: Science and Systems (RSS)*, 2025. (Acceptance rate: 27%).
5. **Arjun Gupta**, **Michelle Zhang\***, **Rishik Sathua\***, and **Saurabh Gupta**. Demonstrating MOSART: Opening articulated structures in the real world. In *Robotics: Science and Systems (RSS)*, 2025. (Acceptance rate: 27%).
6. Boyuan Chen, Hanxiao Jiang, **Shaowei Liu**, **Saurabh Gupta**, Yunzhu Li, Hao Zhao, and Shenlong Wang. Crafting a miniature interactive world from a single image. In *Computer Vision and Pattern Recognition (CVPR)*, 2025. (Acceptance rate: 22.1%).
7. **Aditya Prakash**, Benjamin E Lundell, Dmitry Andreychuk, David Forsyth, **Saurabh Gupta\***, and Harpreet S. Sawhney\*. How do i do that? synthesizing 3d hand motion and contacts for everyday interactions. In *Computer Vision and Pattern Recognition (CVPR)*, 2025. (Acceptance rate: 22.1%). \*denotes equal contribution.
8. Zixuan Chen\*, **Xialin He\***, Yen-Jen Wang\*, Qiayuan Liao, Yanjie Ze, Zhongyu Li, Shankar Sastry, Jiajun Wu, Koushil Sreenath, **Saurabh Gupta**, and Xue Bin Peng. Learning smooth humanoid locomotion through lipschitz-constrained policies. In *International Conference on Intelligent Robots and Systems (IROS)*, 2025. \*denotes equal contribution.
9. Laura Dodds, Hailan Shanbhadg, Junfeng Guan, **Saurabh Gupta**, and Haitham Hassanieh. Around the corner mmwave imaging in practical environments. In *International Conference On Mobile Computing And Networking (MobiCom)*, 2024. (Acceptance rate: 19.1%).

10. **Arjun Gupta, Michelle Zhang, and Saurabh Gupta.** Estimating perceptual uncertainty to predict robust motion plans. In *International Conference on Intelligent Robots and Systems (IROS)*, 2024. (Acceptance rate: 47.5%).
11. DongHoon Baek, Youngwoo Sim, Amartya Purushottam, Saurabh Gupta, and Joao Ramos. Real-to-sim adaptation via high-fidelity simulation to control a wheeled-humanoid robot with unknown dynamics. In *International Conference on Intelligent Robots and Systems (IROS)*, 2024. (Acceptance rate: 47.5%).
12. Zicong Fan, Takehiko Ohkawa, Linlin Yang, Nie Lin, Zhishan Zhou, Shihao Zhou, Jiajun Liang, Zhong Gao, Xuanyang Zhang, Xue Zhang, Fei Li, Liu Zheng, Feng Lu, Karim Abou Zeid, Bastian Leibe, Jeongwan On, Seungryul Baek, **Aditya Prakash, Saurabh Gupta**, Kun He, Yoichi Sato, Otmar Hilliges, Hyung Jin Chang, and Angela Yao. Benchmarks and challenges in pose estimation for egocentric hand interactions with objects. In *European Conference on Computer Vision (ECCV)*, 2024. (Acceptance rate: 27.9%).
13. **Shaowei Liu, Zhongzheng Ren, Saurabh Gupta\***, and Shenlong Wang\*. Physgen: Rigid-body physics-grounded image-to-video generation. In *European Conference on Computer Vision (ECCV)*, 2024. (Acceptance rate: 27.9%). \*denotes equal contribution.
14. **Aditya Prakash, Ruisen Tu, Matthew Chang, and Saurabh Gupta.** 3d hand pose estimation in everyday egocentric images. In *European Conference on Computer Vision (ECCV)*, 2024. (Acceptance rate: 27.9%).
15. **Aditya Prakash, Arjun Gupta, and Saurabh Gupta.** Mitigating perspective distortion-induced shape ambiguity in image crops. In *European Conference on Computer Vision (ECCV)*, 2024.
16. **Aditya Prakash, Matthew Chang, Matthew Jin, Ruisen Tu, and Saurabh Gupta.** 3d reconstruction of objects in hands without real world 3d supervision. In *European Conference on Computer Vision (ECCV)*, 2024. (Acceptance rate: 27.9%).
17. **Matthew Chang**, Theophile Gervet, Mukul Khanna, Sriram Yenamandra, Dhruv Shah, So Yeon Min, Kavita Shah, Chris Paxton, **Saurabh Gupta**, Dhruv Batra, Roozbeh Mottaghi, Jitendra Malik, and Devendra Singh Chaplot. GOAT: GO to Any Thing. In *Robotics: Science and Systems (RSS)*, 2024. (Acceptance rate: 29%).
18. **Xiaoyu Zhang, Matthew Chang, Pranav Kumar, and Saurabh Gupta.** Diffusion meets dagger: Supercharging eye-in-hand imitation learning. In *Robotics: Science and Systems (RSS)*, 2024. (Acceptance rate: 29%).
19. Yiduo Hao\*, Sohrab Madani\*, Junfeng Guan, Mohammed Alloulah, **Saurabh Gupta**, and Haitham Hassanieh. Bootstrapping autonomous radars with self-supervised learning. In *Computer Vision and Pattern Recognition (CVPR)*, 2024. (Acceptance Rate: 23.6%).
20. **Matthew Chang, Aditya Prakash, and Saurabh Gupta.** Look ma, no hands! agent-environment factorization of egocentric videos. In *Advances in Neural Information Processing Systems (NeurIPS)*, 2023. (Acceptance Rate: 26.1%).
21. **Shaowei Liu, Yang Zhou, Jimei Yang, Saurabh Gupta\***, and Shenlong Wang\*. Concontact: Object-centric contact field for grasp generation. In *International Conference on Computer Vision (ICCV)*, 2023. (Acceptance Rate: 26.15%). \*denotes equal contribution.
22. **Xiaoyu Zhang and Saurabh Gupta.** Push past green: Learning to look behind plant foliage by moving it. In *Conference on Robot Learning (CoRL)*, 2023. (Acceptance Rate: 39.9%).

23. Hailan Shanbhag, Sohrab Madani, Akhil Isanaka, Deepak Nair, Saurabh Gupta, and Haitham Hassanieh. Contactless material identification with millimeter wave vibrometry. In *International Conference on Mobile Systems, Applications and Services (MobiSys)*, 2023.
24. **Shaowei Liu**, Saurabh Gupta\*, and Shenlong Wang\*. Building rearticulable models for arbitrary 3d objects from 4d point clouds. In *Computer Vision and Pattern Recognition (CVPR)*, 2023. (Acceptance rate: 26%). \*denotes equal contribution.
25. Junfeng Guan, Sohrab Madani, Waleed Ahmed, Samah Hussein, Saurabh Gupta, and Haitham Hassanieh. Exploiting virtual array diversity for accurate radar detection. In *International Conference on Acoustics, Speech and Signal Processing (ICASSP)*, 2023.
26. **Matthew Chang** and Saurabh Gupta. One-shot visual imitation via attributed waypoints and demonstration augmentation. In *International Conference on Robotics and Automation (ICRA)*, 2023. (Acceptance rate: 43%).
27. **Arjun Gupta**, **Max Shepherd**, and Saurabh Gupta. Predicting motion plans for articulating everyday objects. In *International Conference on Robotics and Automation (ICRA)*, 2023. (Acceptance rate: 43%).
28. Aditi Partap, Samuel Grayson, Muhammad Huzaifa, Sarita Adve, Brighten Godfrey, Saurabh Gupta, Kris Hauser, and Radhika Mittal. On-device cpu scheduling for robot systems. In *International Conference on Intelligent Robots and Systems (IROS)*, 2022. (Acceptance rate: 48%).
29. Gabriel Sarch, Zhaoyuan Fang, Adam Harley, Paul Schydlo, Michael Tarr, Saurabh Gupta, and Katerina Fragkiadaki. TIDEE: Room reorganization using visuo-symbolic common sense priors. In *European Conference on Computer Vision (ECCV)*, 2022. (Acceptance rate: 28%).
30. Sohrab Madani, Junfeng Guan, Waleed Ahmed, Saurabh Gupta, and Haitham Hassanieh. Radatron: Accurate detection using multi-resolution cascaded MIMO radar. In *European Conference on Computer Vision (ECCV)*, 2022. (Acceptance rate: 28%).
31. **Mohit Goyal**, **Sahil Modi**, **Rishabh Goyal**, and Saurabh Gupta. Human hands as probes for interactive object understanding. In *Computer Vision and Pattern Recognition (CVPR)*, 2022. (Acceptance rate: 25%).
32. **Matthew Chang\***, **Arjun Gupta\***, and Saurabh Gupta. Learning value functions from undirected state-only experience. In *International Conference on Learning Representations (ICLR)*, 2022. (Acceptance rate: 33%). \*denotes equal contribution.
33. Sudeep Dasari, Jianren Wang, Joyce Hong, Shikhar Bahl, Yixin Lin, Austin Wang, Abitha Thankaraj, Karanbir Chahal, Berk Calli, Saurabh Gupta, David Held, Lerrel Pinto, Deepak Pathak, Vikash Kumar, and Abhinav Gupta. RB2: Robotic manipulation benchmarking with a twist. In *Advances in Neural Information Processing Systems (Track on Datasets and Benchmarks) (NeurIPS)*, 2021. (Acceptance rate: 26%).
34. Devendra Chaplot, Murtaza Dalal, Saurabh Gupta, Jitendra Malik, and Ruslan Salakhutdinov. SEAL: Self-supervised embodied active learning using exploration and 3D consistency. In *Advances in Neural Information Processing Systems (NeurIPS)*, 2021. (Acceptance rate: 26%).
35. Arun Narenthiran Sivakumar, **Sahil Modi**, Mateus Valverde Gasparino, Che Ellis, Andres Baquero Velasquez, Girish Chowdhary\*, and Saurabh Gupta\*. Learned visual navigation for under-canopy agriculture robots. In *Robotics: Science and Systems (RSS)*, 2021. (Acceptance rate: 27%). \*denotes equal contribution.

36. Silvery Fu, Saurabh Gupta, Radhika Mittal, and Sylvia Ratnasamy. On the use of ML for blackbox system performance prediction. In *USENIX Symposium on Networked Systems Design and Implementation (NSDI)*, 2021. (Acceptance rate: 16%.)
37. **Matthew Chang**, **Arjun Gupta**, and Saurabh Gupta. Semantic visual navigation by watching youtube videos. In *Advances in Neural Information Processing Systems (NeurIPS)*, 2020. (Acceptance rate: 20.1%.)
38. Devendra Singh Chaplot, Helen Jiang, Saurabh Gupta, and Abhinav Gupta. Semantic curiosity for active visual learning. In *European Conference on Computer Vision (ECCV)*, 2020. (Acceptance rate: 27.1%.)
39. Senthil Purushwalkam, Tian Ye, Saurabh Gupta, and Abhinav Gupta. Aligning videos in space and time. In *European Conference on Computer Vision (ECCV)*, 2020. (Acceptance rate: 27.1%.)
40. Devendra Singh Chaplot, Ruslan Salakhutdinov\*, Abhinav Gupta\*, and Saurabh Gupta\*. Neural topological SLAM for visual navigation. In *Computer Vision and Pattern Recognition (CVPR)*, 2020. (Acceptance rate: 22.1%). \*denotes equal contribution.
41. Kiana Ehsani, Shubham Tulsiani, Saurabh Gupta, Ali Farhadi, and Abhinav Gupta. Use the force, luke! learning to predict physical forces by simulating effects. In *Computer Vision and Pattern Recognition (CVPR)*, 2020. (Acceptance rate: 22.1%.)
42. Junfeng Guan, Sohrab Madani, Suraj Jog, Saurabh Gupta, and Haitham Hassanieh. Through fog high resolution imaging using millimeter wave radar. In *Computer Vision and Pattern Recognition (CVPR)*, 2020. (Acceptance rate: 22.1%.)
43. Rohan Chitnis, Shubham Tulsiani, Saurabh Gupta, and Abhinav Gupta. Efficient bimanual manipulation using learned task schemas. In *International Conference on Robotics and Automation (ICRA)*, 2020. (Acceptance rate: 44.0%.)
44. Rohan Chitnis, Shubham Tulsiani, Saurabh Gupta, and Abhinav Gupta. Intrinsic motivation for encouraging synergistic behavior. In *International Conference on Learning Representations (ICLR)*, 2020. (Acceptance rate: 26.5%.)
45. Devendra Singh Chaplot, Dhiraj Gandhi, Saurabh Gupta\*, Abhinav Gupta\*, and Ruslan Salakhutdinov\*. Learning to explore using active neural mapping. In *International Conference on Learning Representations (ICLR)*, 2020. (Acceptance rate: 26.5%). \*denotes equal contribution.
46. William Qi, Ravi Teja Mullapudi, Saurabh Gupta, and Deva Ramanan. Learning to move with affordance maps. In *International Conference on Learning Representations (ICLR)*, 2020. (Acceptance rate: 26.5%.)
47. Ashish Kumar, Saurabh Gupta, and Jitendra Malik. Learning navigation subroutines by watching videos. In *Conference on Robot Learning (CoRL)*, 2019. (Acceptance rate: 27.6%.)
48. Somil Bansal, Varun Tolani, Saurabh Gupta, Jitendra Malik, and Claire Tomlin. Combining optimal control and learning for visual navigation in novel environments. In *Conference on Robot Learning (CoRL)*, 2019. (Acceptance rate: 27.6%.)
49. Tao Chen, Saurabh Gupta, and Abhinav Gupta. Learning exploration policies for navigation. In *International Conference on Learning Representations (ICLR)*, 2019. (Acceptance rate: 31.4%.)
50. Michael Danielczuk, Matthew Matl, Saurabh Gupta, Andrew Li, Andrew Lee, Jeffrey Mahler, and Ken Goldberg. Segmenting unknown 3D objects from real depth images using

- mask R-CNN trained on synthetic point clouds. In *International Conference on Robotics and Automation (ICRA)*, 2019. (Acceptance rate: 45.0%.)
51. Ashish Kumar\*, Saurabh Gupta\*, David Fouhey, Sergey Levine, and Jitendra Malik. Visual memory for robust path following. In *Advances in Neural Information Processing Systems (NeurIPS)*, 2018. (Acceptance rate: 20.8%). \*denotes equal contribution.
  52. Shubham Tulsiani, Saurabh Gupta, David Fouhey, Alexei A Efros, and Jitendra Malik. Factoring shape, pose, and layout from the 2D image of a 3D scene. In *Computer Vision and Pattern Recognition (CVPR)*, 2018. (Acceptance rate: 29.6%.)
  53. Saurabh Gupta, James Davidson, Sergey Levine, Rahul Sukthankar, and Jitendra Malik. Cognitive mapping and planning for visual navigation. In *Computer Vision and Pattern Recognition (CVPR)*, 2017. (Acceptance rate: 29.9%.)
  54. Saurabh Gupta, Judy Hoffman, and Jitendra Malik. Cross modal distillation for supervision transfer. In *Computer Vision and Pattern Recognition (CVPR)*, 2016. (Acceptance rate: 29.9%.)
  55. Judy Hoffman, Saurabh Gupta, and Trevor Darrell. Learning with side information through modality hallucination. In *Computer Vision and Pattern Recognition (CVPR)*, 2016. (Acceptance rate: 29.9%.)
  56. Judy Hoffman, Saurabh Gupta, Jian Leong, Sergio Guadarrama, and Trevor Darrell. Cross-modal adaptation for RGB-D detection. In *International Conference on Robotics and Automation (ICRA)*, 2016. (Acceptance rate: 35.0%.)
  57. Saurabh Gupta, Pablo Arbeláez, Ross Girshick, and Jitendra Malik. Aligning 3D models to RGB-D images of cluttered scenes. In *Computer Vision and Pattern Recognition (CVPR)*, 2015. (Acceptance rate: 28.3%.)
  58. Hao Fang\*, Saurabh Gupta\*, Forrest Iandola\*, Rupesh K Srivastava\*, Li Deng, Piotr Dollár, Jianfeng Gao, Xiaodong He, Margaret Mitchell, John C Platt, C Lawrence Zitnick, and Geoffrey Zweig. From captions to visual concepts and back. In *Computer Vision and Pattern Recognition (CVPR)*, 2015. (Acceptance rate: 28.3%). \*denotes equal contribution.
  59. Jacob Devlin, Hao Cheng, Hao Fang, Saurabh Gupta, Li Deng, Xiaodong He, Geoffrey Zweig, and Margaret Mitchell. Language models for image captioning: The quirks and what works. In *Association for Computational Linguistics (ACL)*, 2015. (Acceptance rate: 25.0%.)
  60. Saurabh Gupta, Ross Girshick, Pablo Arbeláez, and Jitendra Malik. Learning rich features from RGB-D images for object detection and segmentation. In *European Conference on Computer Vision (ECCV)*, 2014. (Acceptance rate: 27.9%.)
  61. Saurabh Gupta, Pablo Arbelaez, and Jitendra Malik. Perceptual organization and recognition of indoor scenes from RGB-D images. In *Computer Vision and Pattern Recognition (CVPR)*, 2013. (Acceptance rate: 25.2%.)
  62. Rahul Sharma, Saurabh Gupta, Bharath Hariharan, Alex Aiken, Percy Liang, and Aditya V Nori. A data driven approach for algebraic loop invariants. In *European Symposium on Programming (ESOP)*, 2013. (Acceptance rate: 25.8%.)
  63. Rahul Sharma, Saurabh Gupta, Bharath Hariharan, Alex Aiken, and Aditya V Nori. Verification as learning geometric concepts. In *International Static Analysis Symposium*, 2013. (Acceptance rate: 41.1%.)
  64. Pablo Arbeláez, Bharath Hariharan, Chunhui Gu, Saurabh Gupta, Lubomir Bourdev, and Jitendra Malik. Semantic segmentation using regions and parts. In *Computer Vision and Pattern Recognition (CVPR)*, 2012. (Acceptance rate: 24.0%.)

## JOURNAL PUBLICATIONS

1. Saurabh Gupta, Varun Tolani, James Davidson, Sergey Levine, Rahul Sukthankar, and Jitendra Malik. Cognitive mapping and planning for visual navigation. *International Journal of Computer Vision (IJCV)*, 2020
2. Jitendra Malik, Pablo Arbeláez, Joao Carreira, Katerina Fragkiadaki, Ross Girshick, Georgia Gkioxari, Saurabh Gupta, Bharath Hariharan, Abhishek Kar, and Shubham Tulsiani. The three R's of computer vision: Recognition, reconstruction and reorganization. *Pattern Recognition Letters*, 72, 2016
3. Saurabh Gupta, Pablo Arbeláez, Ross Girshick, and Jitendra Malik. Indoor scene understanding with RGB-D images: Bottom-up segmentation, object detection and semantic segmentation. *International Journal of Computer Vision (IJCV)*, 2015

## PATENTS

1. Junfeng Guan, Seyedsohrab Madani, Suraj S Jog, Haitham Al Hassanieh, and Saurabh Gupta. Neural network-based millimeter-wave imaging system, 2023. US Patent 11,836,852
2. Rahul Sukthankar, Saurabh Gupta, James Christopher Davidson, Sergey Vladimir Levine, and Jitendra Malik. Agent navigation using visual inputs, 2021. US Patent 11,010,948
3. Jianfeng Gao, Xiaodong He, Saurabh Gupta, Geoffrey G Zweig, Forrest Iandola, Li Deng, Hao Fang, Margaret A Mitchell, John C Platt, Rupesh Kumar Srivastava, and others. Discovery of semantic similarities between images and text, 2017. US Patent 9,836,671

## TECHNICAL REPORTS

1. Adithyavairavan Murali\*, Tao Chen\*, Kalyan Vasudev Alwala\*, Dhiraj Gandhi\*, Lerrel Pinto, Saurabh Gupta, and Abhinav Gupta. Pyrobot: An open-source robotics framework for research and benchmarking. *arXiv preprint arXiv:1906.08236*, 2019
2. Peter Anderson, Angel Chang, Devendra Singh Chaplot, Alexey Dosovitskiy, Saurabh Gupta, Vladlen Koltun, Jana Kosecka, Jitendra Malik, Roozbeh Mottaghi, Manolis Savva, and Amir Zamir. On evaluation of embodied navigation agents. *arXiv preprint arXiv:1807.06757*, 2018
3. Saurabh Gupta, David Fouhey, Sergey Levine, and Jitendra Malik. Unifying map and landmark based representations for visual navigation. *arXiv preprint arXiv:1712.08125*, 2017
4. Xinlei Chen, Hao Fang, Tsung-Yi Lin, Ramakrishna Vedantam, Saurabh Gupta, Piotr Dollár, and C Lawrence Zitnick. Microsoft coco captions: Data collection and evaluation server. *arXiv preprint arXiv:1504.00325*, 2015
5. Saurabh Gupta and Jitendra Malik. Visual semantic role labeling. *arXiv preprint arXiv:1505.04474*, 2015
6. Saurabh Gupta, Bharath Hariharan, and Jitendra Malik. Exploring person context and local scene context for object detection. *arXiv preprint arXiv:1511.08177*, 2015
7. Jacob Devlin, Saurabh Gupta, Ross Girshick, Margaret Mitchell, and C Lawrence Zitnick. Exploring nearest neighbor approaches for image captioning. *arXiv preprint arXiv:1505.04467*, 2015