

Unnat Jain

CONTACT	https://unnat.github.io/	
EDUCATION	University of Illinois at Urbana-Champaign Ph.D., Computer Science, 2018 - 2022 [Outstanding PhD Student award] 4.0/4.0 M.S., Computer Science, 2016 - 2018 [Best Thesis award, Siebel Scholar] 4.0/4.0 Advisors: Alexander Schwing and Svetlana Lazebnik	
	Indian Institute of Technology (IIT), Kanpur, India B.T. - M.T. (Dual), Electrical Engineering, 2011-16 [Director's Gold Medal] 9.7/10.0	
EMPLOYMENT	<ul style="list-style-type: none">• University of California, Irvine, CA – Assistant Professor, Computer Science [2025-]• Skild AI, Pittsburgh, PA – Research Scientist [2024-2025]• Fundamental AI Research (FAIR) at Meta, Pittsburgh, PA – Researcher [2022-2024] Carnegie Mellon University, Pittsburgh, PA – Visiting Postdoc Mentors: Abhinav Gupta, Deepak Pathak, Xinlei Chen• Google DeepMind, New York City, NY – Research Intern [2021] Mentors: Rob Fergus• Allen Institute for AI, Seattle, WA – Research Intern [2018-2020] Mentors: Ali Farhadi, Ani Kembhavi, Luca Weihs• Facebook AI Research, Menlo Park, CA - Research Intern [2019-2020] Mentors: Kristen Grauman• Uber ATG, Pittsburgh, PA - Autonomous Driving Intern [Summer '17]• University of Massachusetts, Amherst, MA - Research Intern [Summer '15] Mentors: Erik Learned-Miller, Subhanshu Maji	
SELECT AWARDS	<ul style="list-style-type: none">• Best Paper at Embodied World Models for Decision Making at NeurIPS 2025 [’25]• Best Paper at 6th Robot Learning workshop at NeurIPS 2023 [’23]• Mavis Future Faculty Fellowship by College of Engg. UIUC [’21]• C.W. Gear Outstanding PhD Student Award at CS@Illinois [’21]• Outstanding Intern of 2020 at Allen Institute for AI (\$10k prize) [’20]• Winner, AI2 Hackathon – AI for Climate Change idea based on Open Catalyst Project [’20]• Institute nomination for Google and Microsoft Research Fellowships [’20]• Qualcomm Innovation Fellowship Finalist [’19]• Selection for Amazon Graduate Research Symposium for Collaborative Embodied Agents [’19]• Best Talk Award: ‘AI in action’ session of CSL Student Conference [’19]• Best MS thesis at CS@Illinois (David J. Kuck Outstanding MS Thesis Award) [’19]• Siebel Scholars: Among 90 graduate students from select 16 schools worldwide (\$35k prize) [’18]• Director's Gold Medal, IIT Kanpur: Best all round achievement and leadership [’16]• Cadence's Gold Medal, IIT Kanpur: Best master's thesis in all engineering departments [’16]• Member of Indian student contingent to Japanese government's JENESYS 2.0 program. [’14]• Summer Undergraduate Research Grant for Excellence, IIT Kanpur [’13]• India Scholarship Award, IET: 2nd prize in over 5000 nationwide applicants [’13]• OPJEMS National Scholarship: Awarded to 70 undergraduates from select Indian institutes [’12]• Scholarship for Higher Education by Ministry of HR and Development (declined) [’11]	
SELECT MEDIA COVERAGE	<ul style="list-style-type: none">•  <i>Skild AI unveils general-purpose AI model for multi-purpose robots [Technical blog] [’25]</i>•  <i>Embodied AI Spins a Pen and Helps Clean the Living Room [’23]</i>•  <i>Habitat 3.0 Simulates Real-World Environments for Intelligent AI Robot Training [’23]</i>•  <i>Robots Can Now Learn New Skills by Watching Videos [’23]</i>•  <i>Robots Learn to Perform Chores by Watching YouTube [’23]</i>•  <i>CMU Researchers Expand Ability of Robots to Learn From Videos [’23]</i>•  <i>Allen Institute Open-Sources AllenAct [’20]</i>•  <i>AllenAct Will Help You Get Your Embodied AI Act Together [’20]</i>•  <i>New Milestones in Embodied AI [’20]</i>•  <i>BU Showcases SoundSpaces: Adding Audio-Visual Navigation to AI [’20]</i>•  <i>Facebook Is Training Robot Assistants to Hear as Well as See [’20]</i>	

-  *Facebook Open-Sources Embodied AI Tools to Advance Robotic Navigation* [²⁰]
-  *Facebook Releases Tools to Help AI Navigate Complex Environments* [²⁰]
-  *Home Robots to Help You Find Your Ringing Phone* [²⁰]

PUBLICATIONS
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1. Constructive Distortion: Improving MLLMs with Attention-Guided Image Warping
D. Dalal, G. Vashishtha, U. Mishra, J. Kim, M. Kanda, H. Ha, S. Lazebnik, H. Ji, **U. Jain**
International Conference on Learning Representations (ICLR), 2026 [[project](#)][[arxiv](#)]
2. Robotic Manipulation by Imitating Generated Videos Without Physical Demonstrations
S. Patel, S. Mohan, H. Mai, **U. Jain***, S. Lazebnik*, Y. Li*
International Conference on Learning Representations (ICLR), 2026 [[project](#)][[arxiv](#)]
3. ViPRA: Video Prediction for Robot Actions
S. Routray, H. Pan, **U. Jain***, S. Bahl*, D. Pathak*
International Conference on Learning Representations (ICLR), 2026 [[project](#)][[arxiv](#)]
4. Compositional Reasoning via Joint Image and Language Decomposition
M. Kanda*, D. Dalal*, Z. Wang, H. Ji, **U. Jain**
European chapter of the Association for Computational Linguistics (EACL), 2026 [[project](#)]
5. An Image is Worth More Than 16x16 Patches: Exploring Transformers on Individual Pixels
D.K. Nguyen, M. Assran, **U. Jain**, M.R. Oswald, C.G.M. Snoek, X. Chen
International Conference on Learning Representations (ICLR), 2025 [[arxiv](#)]
6. Exploitation-Guided Exploration for Semantic Embodied Navigation
J. Wasserman, G. Chowdhary, A. Gupta, **U. Jain**
6th Robot Learning workshop, NeurIPS 2023 (Best Paper)
International Conference on Robotics and Automation (ICRA), 2024 [[project](#)][[arxiv](#)]
7. Habitat 3.0: A Co-Habitat for Humans, Avatars and Robots
X. Puig *et al.*
International Conference on Learning Representations (ICLR), 2024 [[platform](#)][[arxiv](#)]
8. MOPA: Modular Object Navigation with PointGoal Agents
S. Raychaudhuri, T. Campari, **U. Jain**, M. Savva, A. X. Chang
Winter Conference on Applications of Computer Vision (WACV), 2024 [[project](#)][[arxiv](#)]
9. An Unbiased Look at Datasets for Visuo-Motor Pre-Training
S. Dasari, M. K. Srirama, **U. Jain***, A. Gupta*
Conference on Robot Learning (CoRL), 2023 [[project](#)][[pdf](#)]
10. Pretrained Language Models as Visual Planners for Human Assistance
D. Patel, H. Eghbalzadeh, N. Kamra, M. L. Iuzzolino, **U. Jain***, R. Desai*
International Conference on Computer Vision (ICCV), 2023 [[project](#)][[arxiv](#)]
11. Adaptive Coordination in Social Embodied Rearrangement
A. Szot, **U. Jain**, Z. Kira, D. Batra, R. Desai, A. Rai
International Conference on Machine Learning (ICML), 2023 [[project](#)][[arxiv](#)]
12. Affordances from Human Videos as a Versatile Representation for Robotics
S. Bahl, R. Mendonca, L. Chen, **U. Jain**, D. Pathak
Computer Vision and Pattern Recognition (CVPR), 2023 [[project](#)][[arxiv](#)]
13. Last-Mile Embodied Visual Navigation
J. Wasserman*, K. Yadav, G. Chowdhary, A. Gupta, **U. Jain***
Conference on Robot Learning (CoRL), 2022 [[project](#)][[arxiv](#)]
14. Learning State-Aware Visual Representations from Audible Interactions
H. Mittal, P. Morgado, **U. Jain**, A. Gupta
Neural Information Processing Systems (NeurIPS), 2022 [[project](#)][[arxiv](#)]
15. Bridging the Imitation Gap by Adaptive Insubordination
L. Weihs*, **U. Jain***, J. Salvador, S. Lazebnik, A. Kembhavi, A. Schwing
Neural Information Processing Systems (NeurIPS), 2021 [[project](#)][[arxiv](#)]
16. Language-Aligned Waypoint (LAW) Supervision for VLN in Continuous Environments
S. Raychaudhuri, S. Wani, S. Patel, **U. Jain**, A. X. Chang
Empirical Methods in Natural Language Processing (EMNLP), 2021 [[project](#)][[arxiv](#)]

17. GridToPix: Training Embodied Agents with Minimal Supervision
U. Jain, I. Liu, S. Lazebnik, A. Kembhavi, L. Weihs*, A. Schwing*
International Conference on Computer Vision (ICCV), 2021 [project][arxiv]
18. Interpretation of Emergent Communication in Heterogeneous Collaborative Embodied Agents
S. Patel*, S. Wani*, **U. Jain***, A. Schwing, S. Lazebnik, M. Savva, A. X. Chang
International Conference on Computer Vision (ICCV), 2021 [project][pdf]
19. Cooperative Exploration for Multi-Agent Deep Reinforcement Learning
I. Liu, **U. Jain**, R. Yeh, A. Schwing
International Conference on Machine Learning (ICML), 2021 (Long oral) [project][arxiv]
20. Multi-ON: Benchmarking Semantic Map Memory using Multi-Object Navigation
S. Wani*, S. Patel*, **U. Jain***, A. X. Chang, M. Savva
Neural Information Processing Systems (NeurIPS), 2020 [project][arxiv]
21. A Cordial Sync: Going Beyond Marginal Policies for Multi-Agent Embodied Tasks
U. Jain*, L. Weihs*, E. Kolve, A. Farhadi, S. Lazebnik, A. Kembhavi, A. Schwing
European Conference on Computer Vision (ECCV), 2020 (Spotlight talk) [project][arxiv]
22. SoundSpaces: Audio-Visual Navigation in 3D Environments
C. Chen*, **U. Jain***, C. Schissler, S. Gari, Z. Al-Halah, V. Ithapu, P. Robinson, K. Grauman
European Conference on Computer Vision (ECCV), 2020 (Spotlight talk) [project][arxiv]
23. TABVCR: Tags and Attributes for Visual Commonsense Reasoning
J. Lin, **U. Jain**, A.G. Schwing
Neural Information Processing Systems (NeurIPS), 2019 [project][arxiv]
24. Two Body Problem: Collaborative Visual Task Completion
U. Jain*, L. Weihs*, E. Kolve, M. Rastegari, S. Lazebnik, A. Farhadi, A. Schwing, A. Kembhavi
Computer Vision and Pattern Recognition (CVPR), 2019 (Oral talk) [project][arxiv]
25. Two can play this Game: Visual Dialog with Discriminative Question Generation and Answering
U. Jain, S. Lazebnik and A.G. Schwing
Computer Vision and Pattern Recognition (CVPR), 2018 [arxiv]
26. Creativity: Generating Diverse Questions using Variational Autoencoders
U. Jain*, Z. Zhang* and A.G. Schwing
Computer Vision and Pattern Recognition (CVPR), 2017 (Spotlight talk) [arxiv]
27. Compact Environment-Invariant Codes for Robust Visual Place Recognition
U. Jain, V. Nambodiri and G. Pandey
Conference on Computer and Robot Vision (CRV), 2017 [arxiv]

TECHNICAL
REPORTS
(**G-SCHOLAR**)

28. CRAFT: A Tendon-Driven Hand with Hybrid Hard-Soft Compliance
L. Lin*, S. Patel*, J. Moon*, S. Lazebnik[†], **U. Jain[†]** [project][pdf]
29. Retrospectives on the Embodied AI Workshop [arxiv]
M. Deitke *et al.* (2022)
30. AllenAct: A Framework for Embodied AI Research [platform][arxiv]
L. Weihs*, J. Salvador*, K. Kotar*, **U. Jain**, K. Zeng, R. Mottaghi, A. Kembhavi (2020)

INVITED TALKS

- **Dept. of CSE, UC San Diego**
Controlling VLMs for Robot Control ['26]
- **Skild AI and CVPR Workshop Foundation Models Meet Embodied Agents**
Robot Manipulation with Zero Robot Demos ['25]
- **UMich Ann Arbor, UC Santa Barbara, Toyota Technological Institute (TTIC), Johns Hopkins, UC Irvine, UNC Chapel Hill, Northeastern, University of British Columbia, UW Madison**
Jump-starting Embodied Intelligence ['24]
- **Open Catalyst Project and AI Chemistry team, Fundamental AI Research at Meta**
Redesigning Perception and Action ... and Lessons for Pretraining DFT Surrogates ['23]
- **Machine Learning and Computer Vision Seminar, University of Bristol**
The Nuanced Pathway from Egocentric Videos to Robotics ['23]
- **Embodied AI Seminar, Fundamental AI Research at Meta**
An Unbiased Look at Datasets for Visuo-Motor Pre-Training (slides) ['23]
- **Visual Geometry Group Seminar, University of Oxford**
Collaborative Embodied Agents (slides) (video) ['21]

- **Machine Commonsense Grant Meeting, DARPA**
Collaborative Embodied Agents ([slides](#)) [’21]
- **Visual-Computing-Robotics Seminar Series, Simon Fraser University**
AI Agents that can Collaborate and Communicate in Virtual Visual Worlds [’21]
- **Utah Center for Data Science, University of Utah**
Collaborative Embodied Agents ([video](#)) [’20]
- **Graduate Research Symposium, Amazon HQ**
Two Body Problem ([video](#)) [’19]
- **Guest lecture in Visual Recognition Course, IIT Kanpur**
Two Body Problem ([slides](#)) [’19]
- **DelTA Group Seminar, IIT Kanpur**
Creativity: Generating Diverse Questions using VAEs [’17]

MENTORING
(● =active)

- **Jingxiang (Dean) Lin** (BS at UIUC → MS at CMU → now Google)
See publication #23 (NeurIPS ’19) on visual commonsense, CRA Honourable Mention 2020
- **Shivansh Patel** (BS at IIT Kanpur → now PhD at UIUC) ●
See publication #28 (CRAFT Hand), #2 (ICLR ’26), #18 (ICCV ’21) and #20 (NeurIPS ’20), Qualcomm Fellowship finalists
- **Saim Wani** (BS at IIT Kanpur → now Graviton Capital)
See publication #18 (ICCV ’21) and #20 (NeurIPS ’20), Qualcomm Fellowship finalists
- **Sonia Raychaudhuri** (MS at SFU → now PhD at SFU)
See publication #8 (WACV ’24) and #16 (EMNLP ’21) on instruction-following visual agents.
- **Himangi Mittal** (MS at CMU → now PhD at CMU)
See publication #14 (NeurIPS ’22) on learning representation around interaction.
- **Mohan Kumar Srirama** (RA at CMU → MS at CMU → now Google DeepMind)
See publication #9 (CoRL ’23) on self-supervised visual representations for robot manipulation.
- **Justin Wasserman** (PhD at UIUC → Research Scientist, Skild AI) ●
See publication #6 (ICRA ’24) and #13 (CoRL ’22) on sim & real navigation.
- **Dwip Dalal** (PhD at UIUC) ●
See publication #1 (ICLR ’26) and #4 (EACL ’26) on multimodal LLMs.
- **Gregory Shklovski** (BS CSE at UCI → Relativity Space → now Foundation)
Dean’s Choice Award at UCI School of Engineering - Senior Design Showcase.
- **Sagar Patil** (PhD at UC Irvine) ●
- **Daniel Feng** (PhD at UC Irvine) ●
- **Yuchen Song** (PhD at UC Irvine) ●
- **Aditya Mittal** (MS at UC Irvine) ●

TEACHING

- Graduate Teaching Assistant:** 4 semesters at UIUC, 2 semesters at IIT Kanpur (*Aug’15 - May’18*)
- IIT Kanpur: Probability and Statistics (MTH203) & Digital Communication Lab (EE673)
 - UIUC: Computer Vision (CS543), Intro. to Computing (CS101) & Numerical Methods (CS357) [Excellent TA Award×2]
- Senior Academic Mentor**, Counselling Service, IIT Kanpur: 4 semesters (*Aug’12 - May’14*)
- Conducted remedial classes for CS and EE courses for peers needing academic help

ACADEMIC
SERVICE

Area Chair

- CVPR 2026: Computer Vision and Pattern Recognition, Denver (lead AC)
- ICLR 2026: International Conference on Learning Representations, Rio de Janeiro
- NeurIPS 2025: Neural Information Processing Systems, San Diego
- CoRL 2025: Conference on Robot Learning, Seoul
- ICCV 2025: International Conference on Computer Vision, Honolulu (lead AC)
- CVPR 2025: Computer Vision and Pattern Recognition, Nashville [[list](#)]
- ICLR 2025: International Conference on Learning Representations, Singapore
- NeurIPS 2024: Neural Information Processing Systems, Vancouver [[list](#)]
- CVPR 2024: Computer Vision and Pattern Recognition, Seattle [[list](#)]
- NeurIPS 2023: Neural Information Processing Systems, New Orleans [[list](#)]
- CVPR 2023: Computer Vision and Pattern Recognition, Vancouver [[list](#)]

Workshops — Lead Co-Organizer

- Workshop on ‘Bitter Lessons’, CVPR 2026 [[Bitter-Lessons](#)]
- How to Stand Out in the Crowd?, CVPR 2025 [[Standout-CV](#)]
- CV 20/20: A Retrospective Vision, CVPR 2024 [[Retro-CV](#)]
- Scholars & Big Models: How Can Academics Adapt?, CVPR 2023 [[Academic-CV](#)]
- Learning to Adapt and Improve in the Real World, CoRL 2022 [[RoboAdapt](#)]

Reviewer

- Conferences: NeurIPS 2020, 2021; CVPR 2021, 2022; ICCV 2021
- Journals: IEEE Robotics and Automation Letters (RAL) 2021, International Journal of Computer Vision (IJCV) 2021, Computer Vision and Image Understanding (CVIU) 2018, 2019
- **Outstanding reviewer awards:** NeurIPS 2020 (top 10%), CVPR 2021, NeurIPS 2021 (top 8%)

Workshops — Program Committee

- Closing The Loop Between Vision And Language, ICCV 2023 [[webpage](#)]
- Embodied AI Workshop, CVPR 2021, 2022, 2023 [[webpage](#)]
- Embodied Multimodal Learning, ICLR 2021 [[webpage](#)]

Mentor, CVPR Student Mentoring Program (2023)

- Organized by CVPR Chairs, faculty and industry leaders engaged in informal mentoring with selected 300 students at CVPR 2023 Vancouver

Mentor, Women in Machine Learning (WiML) (2022, 2023, 2024)

- Mentoring PhD aspirants on preparing a stronger grad school application

Mentor, Illinois Scholars Undergraduate Research (ISUR) (2021)

- Mentored a Computer Science undergraduate student to independently lead a research project focussed on robust policies of embodied AI agents

Mentor, Introduction to Academic Writing, Dept. of Linguistics (2021)

- Mentored the technical writing and comprehension of a ECE Master’s student in course English as a Second Language (ESL) 515

SOCIAL INITIATIVES

Head of Social Initiatives, Techkriti (IIT Kanpur’s technical festival) (Aug’13 - Aug’14)

Led a team of volunteers to organize the following events of social impact:

- Flood relief drive for state of Uttarakhand, collaborating with [Goonj](#) NGO
- Nationwide competition to promote blogging for social awareness - ‘Blog for a Cause’
- ‘Fulfill-a-wish’ drive for Subhash Care Home Orphanage, Kanpur on Christmas Day.

Core team member, Svagatagami NGO (Jul’13 - Jan’14)

- Worked closely with children with disabilities at Sankalp Day Care Center, Kanpur
- With Dept. of Design, manufactured an oral motor therapy solution for involuntary drooling
- Awarded **Social Impact Prize** for our solution at Entrepreneurship Summit, IIT Kanpur

Peer Educator, Child In Need Institute (CINI) and Save the Children (Jul’08 - Jan’10)

- Volunteered for the project ‘Creating educational opportunities for street children in Kolkata’
- After school, tutored children from economically distressed and underrepresented communities
- The project got 500 school dropouts back to vernacular schools [[Times article with details](#)]