




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	
EMPLOYMENT	Indian Institute of Technology (IIT), Kanpur, India	
	B.T. - M.T. (Dual), Electrical Engineering, 2011-16 [Director's Gold Medal]	9.7/10.0
	• University of California , Irvine, CA – Assistant Professor, Computer Science	[2025-]
	• Skild AI , Pittsburgh, PA – Research Scientist	[2024-]
	• 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	• 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]
	• 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	•  TechCrunch <i>Embodied AI Spins a Pen and Helps Clean the Living Room</i>	[’23]
	•  siliconANGLE <i>Habitat 3.0 Simulates Real-World Environments for Intelligent AI Robot Training</i>	[’23]
	•  The INDEPENDENT <i>Robots Can Now Learn New Skills by Watching Videos</i>	[’23]
	•  TechCrunch <i>Robots Learn to Perform Chores by Watching YouTube</i>	[’23]
	•  Carnegie Mellon University <i>CMU Researchers Expand Ability of Robots to Learn From Videos</i>	[’23]
	•  VentureBeat <i>Allen Institute Open-Sources AllenAct</i>	[’20]
	•  hackster.io <i>AllenAct Will Help You Get Your Embodied AI Act Together</i>	[’20]
	•  facebook <i>Artificial Intelligence</i> <i>New Milestones in Embodied AI</i>	[’20]
	•  The Daily Free Press <i>BU Showcases SoundSpaces: Adding Audio-Visual Navigation to AI</i>	[’20]
	•  MIT Technology Review <i>Facebook Is Training Robot Assistants to Hear as Well as See</i>	[’20]
	•  siliconANGLE <i>Facebook Open-Sources Embodied AI Tools to Advance Robotic Navigation</i>	[’20]
	•  VentureBeat <i>Facebook Releases Tools to Help AI Navigate Complex Environments</i>	[’20]
	•  ZDNet <i>Home Robots to Help You Find Your Ringing Phone</i>	[’20]

1. Retrospectives on the Embodied AI Workshop (2022) [arxiv]
M. Deitke *et al.*
2. AllenAct: A Framework for Embodied AI Research (2020) [platform][arxiv]
L. Weihs*, J. Salvador*, K. Kotar*, **U. Jain**, K. Zeng, R. Mottaghi, A. Kembhavi
3. An Image is Worth More Than 16x16 Patches: Exploring Transformers on Individual Pixels [arxiv]
D.K. Nguyen, M. Assran, **U. Jain**, M.R. Oswald, C.G.M. Snoek, X. Chen
International Conference on Learning Representations (ICLR), 2025
4. Exploitation-Guided Exploration for Semantic Embodied Navigation (2023) [project][arxiv]
J. Wasserman, G. Chowdhary, A. Gupta, **U. Jain**
6th Robot Learning workshop, NeurIPS 2023 (Best Paper)
International Conference on Robotics and Automation (ICRA), 2024
5. Habitat 3.0: A Co-Habitat for Humans, Avatars and Robots [platform][arxiv]
X. Puig *et al.*
International Conference on Learning Representations (ICLR), 2024
6. 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]
7. An Unbiased Look at Datasets for Visuo-Motor Pre-Training
S. Dasari, M. K. Srirama, **U. Jain***, A. Gupta* [project][pdf]
Conference on Robot Learning (CoRL), 2023
8. Pretrained Language Models as Visual Planners for Human Assistance
D. Patel, H. Eghbalzadeh, N. Kamra, M. L. Iuzzolino, **U. Jain***, R. Desai* [project][arxiv]
International Conference on Computer Vision (ICCV), 2023
9. Adaptive Coordination in Social Embodied Rearrangement
A. Szot, **U. Jain**, Z. Kira, D. Batra, R. Desai, A. Rai [project][arxiv]
International Conference on Machine Learning (ICML), 2023
10. Affordances from Human Videos as a Versatile Representation for Robotics
S. Bahl, R. Mendonca, L. Chen, **U. Jain**, D. Pathak [project][arxiv]
Computer Vision and Pattern Recognition (CVPR), 2023
11. Last-Mile Embodied Visual Navigation
J. Wasserman*, K. Yadav, G. Chowdhary, A. Gupta, **U. Jain*** [project][arxiv]
Conference on Robot Learning (CoRL), 2022
12. Learning State-Aware Visual Representations from Audible Interactions
H. Mittal, P. Morgado, **U. Jain**, A. Gupta [project][arxiv]
Neural Information Processing Systems (NeurIPS), 2022
13. Bridging the Imitation Gap by Adaptive Insubordination
L. Weihs*, **U. Jain***, J. Salvador, S. Lazebnik, A. Kembhavi, A. Schwing [project][arxiv]
Neural Information Processing Systems (NeurIPS), 2021
14. Language-Aligned Waypoint (LAW) Supervision for VLN in Continuous Environments
S. Raychaudhuri, S. Wani, S. Patel, **U. Jain**, A. X. Chang [project][arxiv]
Empirical Methods in Natural Language Processing (EMNLP), 2021
15. GridToPix: Training Embodied Agents with Minimal Supervision
U. Jain, I. Liu, S. Lazebnik, A. Kembhavi, L. Weihs*, A. Schwing* [project][arxiv]
International Conference on Computer Vision (ICCV), 2021
16. Interpretation of Emergent Communication in Heterogeneous Collaborative Embodied Agents
S. Patel*, S. Wani*, **U. Jain***, A. Schwing, S. Lazebnik, M. Savva, A. X. Chang [project][pdf]
International Conference on Computer Vision (ICCV), 2021
17. Cooperative Exploration for Multi-Agent Deep Reinforcement Learning
I. Liu, **U. Jain**, R. Yeh, A. Schwing [project][arxiv]
International Conference on Machine Learning (ICML), 2021 (Long oral)
18. Multi-ON: Benchmarking Semantic Map Memory using Multi-Object Navigation
S. Wani*, S. Patel*, **U. Jain***, A. X. Chang, M. Savva [project][arxiv]
Neural Information Processing Systems (NeurIPS), 2020

19. 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) [\[project\]](#)[\[arxiv\]](#)
20. 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) [\[project\]](#)[\[arxiv\]](#)
21. TABVCR: Tags and Attributes for Visual Commonsense Reasoning
J. Lin, **U. Jain**, A.G. Schwing
Neural Information Processing Systems (NeurIPS), 2019 [\[project\]](#)[\[arxiv\]](#)
22. 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) [\[project\]](#)[\[arxiv\]](#)
23. 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 [\[arxiv\]](#)
24. Creativity: Generating Diverse Questions using Variational Autoencoders
U. Jain*, Z. Zhang* and A.G. Schwing
Computer Vision and Pattern Recognition (CVPR), 2017 (Spotlight talk) [\[arxiv\]](#)
25. Compact Environment-Invariant Codes for Robust Visual Place Recognition
U. Jain, V. Nambodiri and G. Pandey
Conference on Computer and Robot Vision (CRV), 2017 [\[arxiv\]](#)

INVITED TALKS

- **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 #20 (NeurIPS '19) on visual commonsense, CRA Honourable Mention 2020
- [Shivansh Patel](#) (BS at IIT Kanpur → now PhD at UIUC) ●
See publication #16 (ICCV '21) and #18 (NeurIPS '20), Qualcomm Fellowship finalists
- [Saim Wani](#) (BS at IIT Kanpur → now Graviton Capital)
See publication #16 (ICCV '21) and #18 (NeurIPS '20), Qualcomm Fellowship finalists
- [Sonia Raychaudhuri](#) (MS at SFU → now PhD at SFU) ●
See publication #6 (WACV '24) and #14 (EMNLP '21) on instruction-following visual agents.
- [Himangi Mittal](#) (MS at CMU → now PhD at CMU)
See publication #12 (NeurIPS '22) on learning representation around interaction.

- [Mohan Kumar Srirama](#) (RA at CMU → now MS at CMU) •
See publication #7 (CoRL '23) on self-supervised visual representations for robot manipulation.
- [Justin Wasserman](#) (PhD at UIUC → Research Scientist, Skild AI) •
See publication #4 (ICRA '24) and #11 (CoRL '22) on sim & real navigation.
- [Dwip Dalal](#) (PhD at UIUC) •
Submission on Multimodal LLMs under review at ACL '25.
- [Gregory Shklovski](#) (BS CSE at UCI → Relativity Space) •
Dean's Choice Award at UCI School of Engineering - Senior Design Showcase.

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

- NeurIPS 2025: Neural Information Processing Systems, San Deigo
- 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

- 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 Insititute (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](#)]