

# Unnat Jain

CONTACT	<a href="https://unnat.github.io/">https://unnat.github.io/</a>	
EDUCATION	<b>University of Illinois at Urbana-Champaign</b> Ph.D., Computer Science, 2018 - 2022 [Outstanding PhD Student award] M.S., Computer Science, 2016 - 2018 [Best Thesis award, Siebel Scholar] Advisors: <a href="#">Alexander Schwing</a> and <a href="#">Svetlana Lazebnik</a>	<b>4.0/4.0</b> <b>4.0/4.0</b>
EMPLOYMENT	<b>Indian Institute of Technology (IIT), Kanpur, India</b> B.T. - M.T. (Dual), Electrical Engineering, 2011-16 [Director's Gold Medal]	<b>9.7/10.0</b>
	• <b>University of California</b> , Irvine, CA – Assistant Professor, Computer Science	[2025-]
	• <b>Skild AI</b> , Pittsburgh, PA – Research Scientist	[2024-]
	• <b>Fundamental AI Research (FAIR) at Meta</b> , Pittsburgh, PA – Researcher <b>Carnegie Mellon University</b> , Pittsburgh, PA – Visiting Postdoc Mentors: <a href="#">Abhinav Gupta</a> , <a href="#">Deepak Pathak</a> , <a href="#">Xinlei Chen</a>	[2022-2024]
	• <b>Google DeepMind</b> , New York City, NY – Research Intern Mentors: <a href="#">Rob Fergus</a>	[2021]
	• <b>Allen Institute for AI</b> , Seattle, WA – Research Intern Mentors: <a href="#">Ali Farhadi</a> , <a href="#">Ani Kembhavi</a> , <a href="#">Luca Weihs</a>	[2018-2020]
	• <b>Facebook AI Research</b> , Menlo Park, CA - Research Intern Mentors: <a href="#">Kristen Grauman</a>	[2019-2020]
	• <b>Uber ATG</b> , Pittsburgh, PA - Autonomous Driving Intern	[Summer '17]
	• <b>University of Massachusetts</b> , Amherst, MA - Research Intern Mentors: <a href="#">Erik Learned-Miller</a> , <a href="#">Subhranshu Maji</a>	[Summer '15]
SELECT AWARDS	• <b>Best Paper</b> at 6th Robot Learning workshop at NeurIPS 2023	[23]
	• Mavis Future Faculty Fellowship by College of Engg. UIUC	[21]
	• C.W. Gear <b>Outstanding PhD Student Award</b> 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]
	• <b>Best MS thesis at CS@Illinois</b> (David J. Kuck Outstanding MS Thesis Award)	[19]
	• <b>Siebel Scholars</b> : Among 90 graduate students from select 16 schools worldwide (\$35k prize)	[18]
	• <b>Director's Gold Medal</b> , 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	•  <b>TechCrunch</b> <i>Embodied AI Spins a Pen and Helps Clean the Living Room</i>	[23]
	•  <b>SiliconANGLE</b> <i>Habitat 3.0 Simulates Real-World Environments for Intelligent AI Robot Training</i>	[23]
	•  <b>The INDEPENDENT</b> <i>Robots Can Now Learn New Skills by Watching Videos</i>	[23]
	•  <b>TechCrunch</b> <i>Robots Learn to Perform Chores by Watching YouTube</i>	[23]
	•  <b>Carnegie Mellon University</b> <i>CMU Researchers Expand Ability of Robots to Learn From Videos</i>	[23]
	•  <b>VentureBeat</b> <i>Allen Institute Open-Sources AllenAct</i>	[20]
	•  <b>hackster.io</b> <i>AllenAct Will Help You Get Your Embodied AI Act Together</i>	[20]
	•  <b>facebook Artificial Intelligence</b> <i>New Milestones in Embodied AI</i>	[20]
	•  <b>The Daily Free Press</b> <i>BU Showcases SoundSpaces: Adding Audio-Visual Navigation to AI</i>	[20]
	•  <b>MIT Technology Review</b> <i>Facebook Is Training Robot Assistants to Hear as Well as See</i>	[20]
	•  <b>SiliconANGLE</b> <i>Facebook Open-Sources Embodied AI Tools to Advance Robotic Navigation</i>	[20]
	•  <b>VentureBeat</b> <i>Facebook Releases Tools to Help AI Navigate Complex Environments</i>	[20]
	•  <b>ZDNet</b> <i>Home Robots to Help You Find Your Ringing Phone</i>	[20]

1. Retrospectives on the Embodied AI Workshop (2022)  
M. Deitke *et al.* [arxiv]
2. AllenAct: A Framework for Embodied AI Research (2020)  
L. Weihs\*, J. Salvador\*, K. Kotar\*, **U. Jain**, K. Zeng, R. Mottaghi, A. Kembhavi [platform][arxiv]
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 [project][arxiv]  
S. Raychaudhuri, T. Campari, **U. Jain**, M. Savva, A. X. Chang  
*Winter Conference on Applications of Computer Vision (WACV), 2024*
7. An Unbiased Look at Datasets for Visuo-Motor Pre-Training [project][pdf]  
S. Dasari, M. K. Srirama, **U. Jain**\*, A. Gupta\*  
*Conference on Robot Learning (CoRL), 2023*
8. Pretrained Language Models as Visual Planners for Human Assistance [project][arxiv]  
D. Patel, H. Eghbalzadeh, N. Kamra, M. L. Iuzzolino, **U. Jain**\*, R. Desai\*  
*International Conference on Computer Vision (ICCV), 2023*
9. Adaptive Coordination in Social Embodied Rearrangement [project][arxiv]  
A. Szot, **U. Jain**, Z. Kira, D. Batra, R. Desai, A. Rai  
*International Conference on Machine Learning (ICML), 2023*
10. Affordances from Human Videos as a Versatile Representation for Robotics [project][arxiv]  
S. Bahl, R. Mendonca, L. Chen, **U. Jain**, D. Pathak  
*Computer Vision and Pattern Recognition (CVPR), 2023*
11. Last-Mile Embodied Visual Navigation [project][arxiv]  
J. Wasserman\*, K. Yadav, G. Chowdhary, A. Gupta, **U. Jain**\*  
*Conference on Robot Learning (CoRL), 2022*
12. Learning State-Aware Visual Representations from Audible Interactions [project][arxiv]  
H. Mittal, P. Morgado, **U. Jain**, A. Gupta  
*Neural Information Processing Systems (NeurIPS), 2022*
13. Bridging the Imitation Gap by Adaptive Insubordination [project][arxiv]  
L. Weihs\*, **U. Jain**\*, J. Salvador, S. Lazebnik, A. Kembhavi, A. Schwing  
*Neural Information Processing Systems (NeurIPS), 2021*
14. Language-Aligned Waypoint (LAW) Supervision for VLN in Continuous Environments [project][arxiv]  
S. Raychaudhuri, S. Wani, S. Patel, **U. Jain**, A. X. Chang  
*Empirical Methods in Natural Language Processing (EMNLP), 2021*
15. GridToPix: Training Embodied Agents with Minimal Supervision [project][arxiv]  
**U. Jain**, I. Liu, S. Lazebnik, A. Kembhavi, L. Weihs\*, A. Schwing\*  
*International Conference on Computer Vision (ICCV), 2021*
16. Interpretation of Emergent Communication in Heterogeneous Collaborative Embodied Agents [project][pdf]  
S. Patel\*, S. Wani\*, **U. Jain**\*, A. Schwing, S. Lazebnik, M. Savva, A. X. Chang  
*International Conference on Computer Vision (ICCV), 2021*
17. Cooperative Exploration for Multi-Agent Deep Reinforcement Learning [project][arxiv]  
I. Liu, **U. Jain**, R. Yeh, A. Schwing  
*International Conference on Machine Learning (ICML), 2021 (Long oral)*
18. Multi-ON: Benchmarking Semantic Map Memory using Multi-Object Navigation [project][arxiv]  
S. Wani\*, S. Patel\*, **U. Jain**\*, A. X. Chang, M. Savva  
*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. Namboodiri 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](#)) [\['19\]](#)
- **DeTA 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 Srivama** (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 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

- 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

##### 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

#### SOCIAL INITIATIVES

- 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](#)]