

EDUCATION

University of Michigan

Ann Arbor, USA

- *Ph.D. in Computer Science and Engineering*

Aug 2021 – Present

Advisor: *Prof. Andrew Owens*

Georgia Institute of Technology

Atlanta, USA

- *Master of Science in Computer Science (Specialization: Machine Learning)*

Aug 2019 – May 2021

GPA: 4.0/4.0, Advisor: *Prof. Devi Parikh*

Indian Institute of Technology (BHU) Varanasi

Varanasi, India

- *Bachelor of Technology in Computer Science and Engineering*

Jul 2014 – May 2018

GPA: 9.20/10.0

AWARDS

- Received the **PAMI Mark Everingham Prize Career Award (2025)**.

PUBLICATIONS (* DENOTES EQUAL CONTRIBUTION)

- **Point Prompting: Counterfactual Tracking with Video Diffusion Models** [[paper link](#)]
Ayush Shrivastava*, Sanyam Mehta*, Daniel Geng, Andrew Owens
arXiv, 2025
- **Fine-grained Defocus Blur Control for Generative Image Models** [[paper link](#)]
Ayush Shrivastava, Connelly Barnes, Xuaner Zhang, Lingzhi Zhang, Andrew Owens, Sohrab Amirghodsi, Eli Shechtman
Winter Conference on Applications of Computer Vision (WACV) 2026
- **Self-Supervised Spatial Correspondence Across Modalities** [[paper link](#)]
Ayush Shrivastava, Andrew Owens
Conference on Computer Vision and Pattern Recognition (CVPR) 2025
- **Self-Supervised Any-Point Tracking by Contrastive Random Walks** [[paper link](#)]
Ayush Shrivastava, Andrew Owens
European Conference on Computer Vision (ECCV) 2024
- **EXIF as Language: Learning Cross-Modal Associations Between Images and Camera Metadata** [[paper link](#)]
Chenhao Zheng, Ayush Shrivastava, Andrew Owens
*Conference on Computer Vision and Pattern Recognition (CVPR) 2023, **Highlight***
- **TEACH: Task-driven Embodied Agents that Chat** [[paper link](#)]
Aishwarya Padmakumar*, Jesse Thomason*, Ayush Shrivastava, Patrick Lange, Anjali Narayan-Chen, Spandana Gella, Robinson Piramuthu, Gokhan Tur, Dilek Hakkani-Tur
Conference on Artificial Intelligence (AAAI) 2022
- **VISITRON: Visual Semantics-Aligned Interactively Trained Object-Navigator** [[paper link](#)]
Ayush Shrivastava, Karthik Gopalakrishnan, Yang Liu, Robinson Piramuthu, Gokhan Tür, Devi Parikh, Dilek Hakkani-Tür
Findings of Association for Computational Linguistics (ACL) 2022
NAACL 2021 Visually Grounded Interaction and Language (ViGIL) Workshop
- **Sim-to-Real Transfer for Vision-and-Language Navigation** [[paper link](#)]
Peter Anderson, Ayush Shrivastava, Joanne Truong, Arjun Majumdar, Devi Parikh, Dhruv Batra, Stefan Lee
Conference on Robot Learning (CoRL) 2020

- **Improving Vision-and-Language Navigation with Image-Text Pairs from the Web** [paper link]
Arjun Majumdar, Ayush Shrivastava, Stefan Lee, Peter Anderson, Devi Parikh, Dhruv Batra
*European Conference on Computer Vision (ECCV) 2020, **Spotlight (Top 5%)***
ICML 2020 LaReL Workshop, Best Paper Honorable Mention
- **Chasing Ghosts: Instruction Following as Bayesian State Tracking** [paper link]
Peter Anderson*, Ayush Shrivastava*, Devi Parikh, Dhruv Batra, Stefan Lee
Neural Information Processing Systems (NeurIPS) 2019

WORK EXPERIENCE

- **Adobe Research** Seattle, WA
Research Scientist Intern | Supervisor: *Connelly Barnes, Eli Shechtman* *May 2025 - Present*
 - Working on improving the efficiency of video generation models using token pruning techniques.
- **University of Michigan** Ann Arbor, MI
Graduate Research Assistant | Supervisor: *Prof. Andrew Owens* *Aug 2021 - Present*
 - Working on problems related to learning correspondences from video, image & video generation.
- **Adobe Research** Seattle, WA
Research Scientist Intern | Supervisor: *Connelly Barnes, Eli Shechtman* *May 2024 - Nov 2024*
 - Built a novel text-to-image diffusion model leveraging camera metadata to precisely control defocus blur while preserving scene content. Published at *WACV 2026*.
- **Amazon Alexa AI** Remote
Applied Scientist Intern | Supervisor: *Prof. Jesse Thomason, Robinson Piramuthu* *May 2021 - Aug 2021*
 - Worked on **TEACH**, a new benchmark released for human-human, interactive dialogues to complete household tasks in simulation on AI2-THOR. Published at *AAAI 2022*.
- **Amazon Alexa AI** Remote
Applied Scientist Intern | Supervisor: *Dilek Hakkani-Tür* *May 2020 - Aug 2020*
 - Built embodied agents that solve a navigation task by holding dialog in a cooperative setting. Published at *Findings of ACL 2022*.
- **Georgia Institute of Technology** Atlanta, GA
Graduate Research Assistant | Supervisor: *Prof. Devi Parikh* *Aug 2019 - May 2021*
 - Worked on problems related to Embodied AI and Vision & Language
 - Worked on using BERT-style models to better ground navigation instruction in 3D environments. Published at *ECCV 2020*.
 - Transferred instruction following agents trained in simulation to robots in real world. Published at *CoRL 2020*.
- **Georgia Institute of Technology** Atlanta, GA
Visiting Research Scholar | Supervisor: *Prof. Devi Parikh, Prof. Dhruv Batra* *Aug 2018 - May 2019*
 - Worked on solving navigation instruction following in 3D environments by following an ideal agent trajectory. Published at *NeurIPS 2019*.

SERVICE ROLES AND ACADEMIC ACTIVITIES

Reviewer: ICCV [2021], NeurIPS [2021], ICLR [2022, 2024, 2026], CVPR [2023], ACL [2024], ECCV [2024]
Challenge Organization: VQA Challenge [2019, 2020, 2021], Visual Dialog Challenge [2018, 2019, 2020]
Workshop Organization: Visual Question Answering & Dialog Workshop, CVPR [2019, 2020, 2021]