Ayush Shrivastava

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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

PUBLICATIONS (* DENOTES EQUAL CONTRIBUTION)

- **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

AWARDS AND ACHIEVEMENTS

- Awarded **Amazon Post-Internship Fellowship**
- Travel Scholarship for **Google Summer of Code Mentor Summit 2018**, Google Sunnyvale
- Presented our project, Memento at **Microsoft's code.fun.do SHOWCASE** 2017; received Travel Scholarship
- Winner, **code.fun.do 2017**; hackathon conducted by **Microsoft**
- Runner up, **code.fun.do 2016**; hackathon conducted by **Microsoft**
- Winner, Enigma; ML hackathon conducted by CodeFest 2016 (Computer Science Fest, IIT BHU)
- Secured **All India Rank 859** in IIT JEE (Advanced) 2014 among 1.5 Lakh students (among top 0.5%)
- **Vibrant Academy Scholarship recipient** (2012 - 2014)

Work Experience

- **University of Michigan** — Ann Arbor, MI
  Graduate Research Assistant | Superviser: Prof. Andrew Owens — *Aug 2021 - Present*
  - I work on problems related to Computer Vision and multimodal learning (vision, language, audio).
  - Currently working on learning objects representations using self-supervised learning for long-range video tracking.

- **Amazon Alexa AI** — Remote
  Applied Scientist Intern | Superviser: 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 | Superviser: 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 | Superviser: Prof. Devi Parikh — *Aug 2019 - Current*
  - 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 | Superviser: 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*.

- **Google Summer of Code 2018** — Atlanta, GA
  Mentor | CloudCV organisation — *Apr 2018 - Aug 2018*
  - Mentored a student for Fabrik project. Added support for importing/exporting models from TensorFlow. Built real time collaboration feature where multiple users can edit or review the model at the same time.

- **Nanyang Technological University [code]** — Singapore
  Research Intern | Superviser: Prof. Lam Siew Kei, Prof. Thambipillai Srikanthan — *May 2017 - Jul 2017, Dec 2017*
  - Built fast semantic segmentation models for autonomous driving by reducing complexities in model architecture. Explored and combined different deep learning models like PSPNet and MobileNets.

Service Roles and Academic Activities

Reviewer

International Conference on Learning Representations (ICLR)	2022
Conference on Neural Information Processing Systems (NeurIPS)	2021
International Conference on Computer Vision (ICCV)	2021

Challenge Organization

VQA Challenge	2019, 2020, 2021
Visual Dialog Challenge	2018, 2019, 2020

Workshop Organization

Visual Question Answering and Dialog Workshop	CVPR 2019, CVPR 2020, CVPR 2021

Teaching Assistant

ITW1: Python and Shell Programming	Spring 2017
CS 101: Computer Programming and Linux	Fall 2016