SHAUNAK HALBE

Web : https://shaunak27.github.io

GitHub ⋄ Google Scholar

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EDUCATION

Georgia Institute of Technology   *August 2022 - Present*
Ph.D. in Machine Learning
Advisor : Prof. Zsolt Kira

College of Engineering Pune (COEP)   *July 2018 - June 2022*
Bachelor of Technology (Hons.)   GPA: 9.72/10
Department of Computer Science & Engineering   Institute Rank: 1/738
Advisor : Prof. Vahida Attar   Link to Transcripts

RESEARCH INTERESTS

Multimodal LLMs, Video Understanding, Continual Learning, Web and Embodied AI Agents

RESEARCH

8. Grounding Descriptions in Images informs Zero-shot Visual Recognition [pdf]
***Shaunak Halbe*,** *et. al. (hidden for anonymity)*
· Under Review

7. Adaptive Memory Replay for Continual Learning [pdf]
James Seale Smith, Lazar Valkov, ***Shaunak Halbe****, Vyshnavi Gutta, Rogerio Feris, Zsolt Kira, Leonid Karlinsky*
· **CLVision Workshop at CVPR 2025**

6. Continual Adaptation of Vision Transformers for Federated Learning [arxiv] [talk]
***Shaunak Halbe*,** *James Smith, Junjiao Tian, Zsolt Kira*
· **Transactions on Machine Learning Research (TMLR), 2024**
· **Workshop on Federated Learning in the Age of Foundation Models, NeurIPS 2023**
· *Oral, top 10% of all submissions*

5. Robustness through Data Augmentation Loss Consistency [arxiv]
Tianjian Huang,* ***Shaunak Halbe*,*** *Chinnadhurai Sankar, Pooyan Amini, Satwik Kottur, Alborz Geramifard, Meisam Razaviyayn, Ahmad Beirami*
· **Transactions on Machine Learning Research (TMLR), 2022**

4. A Closer Look at Rehearsal-Free Continual Learning [arxiv]
James Smith, Junjiao Tian, ***Shaunak Halbe****, Yen-Chang Hsu, Zsolt Kira*
· **Workshop on Continual Learning in Computer Vision (CLVision), CVPR 2023**

3. Open-World Dialogue Driven Object Navigation
· **Conference on Robot Learning, CoRL 2023 (Demo Track)**

2. Reason & Act : A Modular Approach to Explanation Driven Agents for Vision and Language Navigation [pdf] [video]
Shaunak Halbe*, Ingrid Navarro, and Jean Oh*

· **Carnegie Mellon University RISS Working Papers Journal, 2021**

1. **Exploring Weaknesses of VQA Models through Attribution Driven Insights** [pdf] [talk]
   Shaunak Halbe
· **Second Grand-Challenge and Workshop on Multimodal Language, ACL 2020**
· **Visual Question Answering and Dialog Workshop, CVPR 2020**

EXPERIENCE

Amazon Science   Seattle, WA
Applied Scientist Intern   May 2025 - Aug 2025

· Research on training multimodal LLMs as unified video retrievers. The goal is to enable video search using multimodal compositional queries.

Georgia Institute of Technology   Atlanta, GA
Graduate Research Assistant   Aug 2022 - Present

· Working at the intersection of vision and language with specific forays into pretraining and adaptation of foundation models, video understanding and embodied AI.

Carnegie Mellon University   Pittsburgh, PA
Robotics Institute Summer Scholar (RISS)   June 2021 - Feb 2022

· Worked under the guidance of Prof. Jean Oh on developing a modular reasoning agent for the task of Vision and Language Navigation in Continuous Environments (VLN-CE).

University of Southern California   Los Angeles, CA
Research Intern   May 2021 - May 2022

· Worked under the guidance of Dr. Ahmad Beirami (Meta AI Research) & Prof. Meisam Razaviyayn on developing a novel regularizer to promote robust domain invariant feature learning through data augmentation.
· Demonstrated state-of-the-art results on task-oriented dialog, VQA and adversarial robustness benchmarks.

Meta AI   Menlo Park, CA
External Research Collaborator   Jan 2021 - Mar 2022

· Remotely collaborated with Dr. Satwik Kottur to perform robustness studies on state-of-the-art Visual Dialog models.
· Implemented a contrastive learning approach to improve model consistency under semantics preserving shifts in the language space.

ACADEMIC ACHIEVEMENTS

- Received COEP's Best Outgoing Student Award for excellence in academic and extra-curricular activities (2022)

- Awarded the Gold Medal for maintaining the Highest GPA in the graduating batch and in Computer Science at COEP (2022)

- Received COEP's Alumni Association Award for three consecutive years for being **1st** (among 738 students) across all departments, according to the GPA-based ranking scheme (2020, 2021, 2022)

- One of the 15 Viterbi-India Scholars selected by Viterbi School of Engineering (USC) and the Indo-US Science and Technology Forum for a fully funded research internship in Summer 2021

- Selected for the prestigious Robotics Institute of Summer Scholars (RISS) 2021 program at CMU to pursue research supported by a generous scholarship (only 50 scholars were selected out of 700+ applicants worldwide)

- Offered the Mitacs Globalink Award to conduct funded research in Canada during Summer 2021

- Shortlisted for the highly-selective EPFL Summer Fellowship from 4500+ applicants worldwide

SERVICE

- Graduate Teaching Assistant, CS 7643 Deep Learning, Fall 2023

- Reviewer: CVPR 2024, NeurIPSW 2023, CMU RI Working Papers Journal, 2021

- Volunteer: NeurIPS 2023, CoRL 2023, ACL 2020 and NAACL 2021

REFERENCES

- Prof. Zsolt Kira   Associate Professor, Georgia Institute of Technology, GA, USA
- Dr. Ahmad Beirami   Research Scientist, Google DeepMind, NY, USA
- Prof. Jean Oh   Associate Professor, Carnegie Mellon University, PA, USA
- Dr. Satwik Kottur   Research Scientist, Meta AI, CA, USA
- Prof. Meisam Razaviyayn   Assistant Professor, University of Southern California, CA, USA