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, Agentic AI, Multimodal Reasoning

RESEARCH

9. VIRTUE: Versatile Video Retrieval Through Unified Embeddings [pdf]
Shaunak Halbe *et. al. (hidden for anonymity)*

· Under Review, CVPR 2026

8. Grounding Descriptions in Images informs Zero-shot Visual Recognition [pdf]
Shaunak Halbe*, Junjiao Tian, K J Joseph, James Smith, Katherine Stevo, Vineeth N Balasubramanian, Zsolt Kira*

· **Winter Conference on Applications of Computer Vision (WACV), 2026**

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

· **Workshop on Continual Learning in Computer Vision (CLVision), 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 Prime Video — Seattle, WA
Applied Scientist Intern — *May 2025 - Aug 2025*

· Research on large-scale training of 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 on Multimodal LLMs, Representation Learning and Video Understanding.

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 2024-26, ECCV 2024, NeurIPS 2023, RA-L
- 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