

SHAUNAK HALBE

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Homepage : <https://shaunak27.github.io>

EDUCATION

Georgia Institute of Technology

August 2022 - Present

Ph.D. in Machine Learning

Advisor : [Prof. Zolt 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

Egocentric Video Understanding (AR/VR), Open-Set Visual Recognition (CV),

Continual Learning (ML), Vision-Language (CV, NLP), Embodied AI (Robo)

RESEARCH

7. HePCo: Data-Free Heterogeneous Prompt Consolidation for Continual Federated Learning [\[arxiv\]](#)

Shaunak Halbe, James Smith, Junjiao Tian, Zolt Kira*

- Workshop on Federated Learning in the Age of Foundation Models, NeurIPS 2023
- Oral, top 10% of all submissions
- Long version under review

6. 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

5. Open-World Dialogue Driven Object Navigation

- Conference on Robot Learning, CoRL 2023 (Demo Track)

4. Adaptive Memory Replay for Continual Learning [\[pdf\]](#)

James Smith, Lazar Valkov, Shaunak Halbe, Vyshnavi Gutta, Rogerio Feris, Zolt Kira, Leonid Karlinsky

- In Submission, 2023

3. A Closer Look at Rehearsal-Free Continual Learning [\[arxiv\]](#)

James Smith, Junjiao Tian, Shaunak Halbe, Yen-Chang Hsu, Zolt Kira

- Workshop on Continual Learning in Computer Vision (CLVision), CVPR 2023

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

Georgia Institute of Technology

Graduate Research Assistant

Atlanta, GA

Aug 2022 - Present

- Working on open-world visual recognition with specific forays into spatio-temporal localization for egocentric videos (Ego4D), universal visual recognition, continual learning and federated learning

Carnegie Mellon University

Robotics Institute Summer Scholar (RISS)

Pittsburgh, PA

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

Research Intern

Los Angeles, CA

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, Adversarial Robustness and Regression benchmarks.

Meta AI

External Research Collaborator

Menlo Park, CA

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 domain.

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 2023, NeurIPS 2023, CMU RI Working Papers Journal, 2021
- Volunteer: NeurIPS 2023, CoRL 2023, ACL 2020 and NAACL 2021

REFERENCES

- [Dr. Zolt Kira](#) Assistant Professor, Georgia Institute of Technology, GA, USA
- [Dr. Ahmad Beirami](#) Research Scientist, Google Research, NY, USA
- [Prof. Jean Oh](#) Associate Professor, Carnegie Mellon University, PA, USA
- [Prof. Meisam Razaviyayn](#) Assistant Professor, University of Southern California, CA, USA