

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

Vision and Language, Continual Learning and Adaptation, Video Understanding, Open-World Vision

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. 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

4. Open-World Dialogue Driven Object Navigation

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

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

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

- In Submission, 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 at the intersection of vision and language with specific forays into pretraining and adaptation of large foundation models, continual learning for VLMs and embodied AI

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
- [Dr. Satwik Kottur](#) Research Scientist, Meta AI, CA, USA
- [Prof. Meisam Razaviyayn](#) Assistant Professor, University of Southern California, CA, USA