

SHAUNAK HALBE

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EDUCATION

College of Engineering Pune (COEP), India

Senior Year Undergraduate

Department of Computer Engineering

Link to Transcript : [Click Here](#)

July 2018 - Present

GPA: 9.8 / 10

Institute Rank: 1 / 700

PUBLICATIONS

1. DAIR: Data Augmented Invariant Regularization

*Tianjian Huang, **Shaunak Halbe**, Chinnadhurai Sankar, Pooyan Amini, Satwik Kottur, Alborz Geramifard, Meisam Razaviyayn, Ahmad Beirami*

- Under review, Preprint coming soon.

2. Reason & Act : A Modular Approach to Explanation Driven Agents for Vision and Language Navigation [\[video\]](#)

Shaunak Halbe, Ingrid Navarro, and Jean Oh

- 2021 Robotics Institute Summer Scholars Working Papers Journal, **Carnegie Mellon University**

3. Exploring Weaknesses of VQA Models through Attribution Driven Insights [\[video\]](#)

Shaunak Halbe

- Second Grand-Challenge and Workshop on Multimodal Language, **ACL 2020**
- Preliminary Version : Visual Question Answering & Dialog Workshop, **CVPR 2020**

RESEARCH EXPERIENCE

University of Southern California

Research Intern

Los Angeles, CA

May 2021 - Present

- Worked under the guidance of [Dr. Ahmad Beirami](#) (Facebook AI) & [Prof. Meisam Razaviyayn](#) on promoting invariance in Machine Learning systems across different domains through Data Augmentation.
- Extended the application of an invariant feature learning method to several tasks spanning visual classification, domain generalization and multimodal learning

Carnegie Mellon University

Research Scholar

Pittsburgh, PA

May 2021 - Present

- Worked under the guidance of [Dr. Jean Oh](#) on Vision and Language Navigation
- Contributed to the design of a modular embodied agent in continuous navigable environments

Bennett University

Summer Research Internship

Greater Noida, India

April 2020 - July 2020

- Studied the effects of Adversarial Attacks on Deep Neural Networks
- Read and implemented several research papers on Adversarial Attacks for Computer Vision tasks.

SILP Lab, IIIT Allahabad
Winter Research Internship

Allahabad, India
Dec 2019 - Jan 2020

- Conducted Research under the supervision of Dr. Uma Shanker Tiwary in the domain of Computer Vision, specifically Object Detection and Instance Segmentation.

RELEVANT COURSES

Data Structures & Algorithms
Deep Learning
Operating Systems
Natural Language Processing

Linear Algebra & Multivariate Calculus
Data Science
Artificial Intelligence
Computer Networking

TECHNICAL SKILLS

Programming Languages

C/C++, Python, SQL, Matlab

Software & Tools

HTML5, CSS, Javascript, React.js

Platforms & Toolkits

Jupyter Notebooks, Google CoLab, Git, Bash Scripting,
Linux Commands, LaTeX

Deep Learning Frameworks

PyTorch, Keras, Tensorflow

Research Interests

**Computer Vision, Natural Language Processing,
Deep Learning, Robust ML**

ACADEMIC ACHIEVEMENTS

Institute Academic Topper, College of Engineering Pune 19-20 and 20-21

COEP's Alumni Association Academic Award in 2020 and 2021

Mitacs Globalink Research Internship 2021 (declined)

IUSSTF Viterbi Research Scholarship 2021

CMU Robotics Institute Summer Scholarship 2021

PROJECTS

3. Financial Portfolio Manager : A complete investment portfolio system powered by Deep Learning
[Github Link](#)

2. Adversarially Robust Capsule Networks for Image Classification
[Github Link](#)

3. Image Captioning and translation into Indian Languages to assist the visually impaired
[Github Link](#)

4. Instance Segmentation using Mask RCNN on Pedestrian Detection Dataset in PyTorch.
[Github Link](#)

LEADERSHIP

COEP's Data Science and Artificial Intelligence Club
Research Secretary

March 2019 - Present
College of Engineering Pune

- Lead a team of 20 undergraduate students to conduct research projects in Machine Learning.