

RESEARCH INTEREST

My research interest is Computer Vision and Deep Learning; Research topics include Active Learning, Data Fairness, Domain Adaptation, Semantic Segmentation, Object Detection.

EDUCATION

- **Indraprastha Institute of Information Technology Delhi** Delhi, India
• *PhD Candidate, Computer Science and Engineering* *August 2017 - Present*
Thesis: Exploiting Contextual Uncertainty of Deep Models for Efficient Training
Advisors: Dr. Saket Anand and Dr. Chetan Arora
Courses: Machine Learning, Deep Learning, Advanced Computer Vision, Computer Vision, Image Processing, Probability and Random Process, Natural Language Processing
- **Graphic Era University** Dehradun, India
• *Bachelor of Technology - Computer Science and Engineering; GPA: 8.8* *July 2012 - June 2016*
BTP: Human Activity Recognition
Advisor: Dr. Vikas Tripathi
Courses: Operating Systems, Data Structures, Analysis Of Algorithms, Networking, Databases, Automata

TECHNICAL EXPOSURE

- **Languages:** Python, C, C++
- **Frameworks:** Scikit, NLTK, SpaCy, PyTorch, TensorFlow, OpenCV, Matlab

PUBLICATIONS

- **S. Agarwal**, S. Anand and C. Arora, “*Reducing Annotation Effort by Identifying and Labeling Contextually Diverse Classes for Semantic Segmentation Under Domain Shift*” IEEE Winter Conference on Applications of Computer Vision (**WACV 2023**) [PDF][Code].
- **S. Agarwal**, S. Muku, S. Anand and C. Arora, “*Does Data Repair Lead to Fair Models? Curating Contextually Fair Data To Reduce Model Bias*” IEEE Winter Conference on Applications of Computer Vision (**WACV 2022**) [PDF][Code].
- **S. Agarwal**, H. Arora, S. Anand and C. Arora, “*Contextual Diversity for Active Learning*”, European Conference on Computer Vision (**ECCV 2020**).[PDF][Code].
- V. Tripathi, **S. Agarwal**, A. Mittal, D. Gangodkar, “*Improved Dynamic Time Warping Based Approach for Activity Recognition*”, Frontiers of Intelligent Computing: Theory and Applications (**FICTA 2017**).
- V. Tripathi, Piyush Bhatt, **S. Agarwal**, M. Semwal, “*Modified Dense Trajectory for Real-Time Action Recognition*”, International Journal of Control Theory and Applications, (**IJCTA 2016**).

ON-GOING PROJECTS

- Indian Road Inspection (Videos and Images), project by MoRD(Ministry of Rural Development).
- Active Learning for Object Detection and Multi Object Tracking.
- Learning Hierarchical Distribution In Object Detection and Reducing Mistake Severity.

ACTIVITIES

- Presented our work in “Advanced Vision Technologies for Road Safety” IMPRINT-II 2023, IIT-Delhi.
- Selected for Google Research Week 2023, Bengaluru.

MENTORSHIP

- **Ojus Singhal**, “Domain Adaptation for Indian Roads” B.Tech Project (Jan 23-Dec 23)
- **Utsav Garg**, “Semantic Segmentation on Indian Road and MMSeg” IP Project (August 23- Dec 23)
- **Atharv Goel**, “Active Learning for Object Detection” B.Tech Project (Jan 24 - Dec 24)
- **Mehar Khurana**, “Active Learning for Multi Object Tracking” B.Tech Project (Jan 24- Dec 24)
- **Tanish Gupta, Aman Kumar, Danish Khan, Faizan**, “Automating Indian Road Data Annotation” B.Tech Project (Jan 24 - Dec 24)

PROFESSIONAL SERVICE

- **Reviewed Journal:** TPAMI-23
- **Reviewed Conference:** ICCV-23, ECCV-22, CVPR-22,23, WACV-22,23,24
- **Program Committee,** COMSNETS 23,24, Workshop on Connected Vehicles & Autonomous Driving.
- **Committee Member,** ICVGIP Data Challenge 2021
- **Deep Learning Tutorial ,** AI Assisted Data Analytic (AIDA) 2020, IIITD
- **Machine Learning Tutorial,** Economics Workshop 2019, IIITD

TEACHING

- **CSE-544 Computer Vision,** Winter 2021
- **CSE-343 Machine Learning,** Monsoon 2020
- **CSE-661 Affective Computing,** Winter 2020
- **CSE-343 Machine Learning,** Monsoon 2019
- **CSE-641 Deep Learning,** Winter 2019
- **CSE-540 Digital Image Processing,** Monsoon 2018
- **CSE-600A Object Oriented Programming,** Monsoon 2017

ACADEMIC PROJECTS

- **Domain Adaptation for Semantic Segmentation:** Course: Deep Learning
- **Detecting people with Down Syndrome:** Course: Image Processing
- **Pairwise Confusion Loss for Semantic Segmentation:** Course: Advanced Computer Vision
- **Depression Detection Using Tweets:** Course: Natural Language Processing
- **Quora Question Duplicate Detection:** Course: Machine Learning
- **Driver Drowsiness Detection on Long Videos:** Course: Computer Vision
- **Improved Study of Heart Disease Detection using Data Mining:** Course: Data Mining for Health Care