

Sameer Ambekar

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RESEARCH INTERESTS

deep learning, computer vision: Test-time adaptation, Domain generalization, Meta learning.

EDUCATION

Technical University of Munich (TU Munich)

PhD student in Deep learning

Advisors: Prof. Julia Schnabel & mentored by Prof. Stefan Bauer

Munich, Germany

2023 - present

University of Amsterdam (UvA)

Masters in Artificial Intelligence MSc AI, Research (Thesis grade: Excellent, 48ECTS)

Thesis: Test-time Adaptation: Generating labels and models

Advisors: Prof. Cees Snoek & Zehao Xiao

Amsterdam, Netherlands

2021 - 2023

RESEARCH EXPERIENCE

University of Amsterdam

Research Intern during MSc AI

Advisors: Prof. Cees Snoek, Prof. Xiantong Zhen & Zehao Xiao

Amsterdam, Netherlands

June 2022 - June 2023

Indian Institute Of Technology Delhi (IIT Delhi)

Research Assistant in Deep learning, before MSc AI

Advisors: Prof. Prathosh AP

Delhi, India

January 2019 - July 2021

Indian Council of Medical Research (ICMR), NITM

Research Trainee and Bachelor Thesis

Advisors: Dr. Subarna Roy (Scientist G) & Pramod Kumar (Scientist B)

Belgaum, India

2017 - 2018

PUBLICATIONS

Layer-wise Test-time Adaptation to Dynamic Shifts

Sameer Ambekar, Daniel M. Lang, Julia A. Schnabel

Preprint soon

Selective Test-Time Adaptation for Unsupervised Anomaly Detection using Neural Implicit Representations

Sameer Ambekar, Cosmin I. Bercea, Julia A. Schnabel

MICCAI 2024 ADMSI 🏆 Best Paper Award

Non-Parametric Neighborhood Test-Time Generalization: Application to Medical Image Classification

Sameer Ambekar, Daniel M. Lang, Julia A. Schnabel

MICCAI 2024 EMERGE

GeneralizeFormer: Layer-Adaptive Model Generation across Test-Time Distribution Shifts

Sameer Ambekar, Zehao Xiao, Xiantong Zhen, Cees G. M. Snoek

Winter Conference on Applications of Computer Vision 2025 conference (WACV), 2025.

Preprint soon

Learning Variational Neighbor Labels for Test-Time Domain Generalization.

Sameer Ambekar*, Zehao Xiao*, Jiayi Shen, Xiantong Zhen, Cees G. M. Snoek

Conference on Lifelong Learning Agents conference (CoLLAs), 2024.

Unsupervised Domain Adaptation for Semantic Segmentation of NIR Images through Generative Latent Search.

Prashant Pandey*, Aayush Kumar Tyagi*, Sameer Ambekar, Prathosh AP

European Conference on Computer Vision conference (ECCV), 2020 (Spotlight).

🏆 Top 5% of accepted papers.

Variational Pseudo Labeling for Test Time Domain Generalization.

Sameer Ambekar, Zehao Xiao, Jiayi Shen, Xiantong Zhen, Cees G. M. Snoek

International Conference on Learning Representations workshop (*ICLR*), 2023 (Spotlight)

SKDCGN: Source-free Knowledge Distillation of Counterfactual Generative Networks using cGANs.

Sameer Ambekar*, Matteo Tafuro*, Ankit*, Diego van der Mast*, Mark Alence*, Christos Athanasiadis

European Conference on Computer Vision workshop (*ECCV*), 2022.

Thesis

Test-time adaptation: Generating Variational labels and Models.

Sameer Ambekar

Masters in AI Thesis, AI for Medical Imaging lab, University of Amsterdam

Advisors: Prof. Cees Snoek, Prof. Xiantong Zhen, Zehao Xiao

SELECTED AWARDS AND HONORS

- DigiCosme Full Master Scholarship of €12,000 Université Paris Saclay, France 2021
- Google Conference Grant for ECCV 2020 Spotlight paper 2020
- Secured 6th Rank in National Science Talent Search Examination at the National Level, India.

PROFESSIONAL RESPONSIBILITIES

- **Reviewer:** NeurIPS, ICML, CVPR, ECCV, ICCV, IEEE TNNLS, Elsevier's Applied soft computing, Springer Nature's Journal of Translational Medicine

MACHINE LEARNING SUMMER SCHOOLS

- International Computer Vision summer school (ICVSS), Italy 2024
- Eastern European Machine Learning summer school by Google Deepmind, Slovakia 2024
- Oxford Machine Learning summer school (OxML 2022), Deep Learning by University of Oxford, UK 2020, 2022
- Regularization Methods for Machine Learning 2021 (RegML 2021) 2021
- PRAIRIE/MIAI PAISS 2021 Machine Learning Summer Learning, by INRIA & NAVER labs, France 2021
- Machine Learning Summer School (MLSS-Indo 2020, Indonesia) 2020

SELECTED RESEARCH PROJECTS

Knowledge Distillation of Counterfactual Generative networks, DL-2 Course Project, UvA April 2022

- Deep learning 2 course final project at UvA, published at ECCV 2022 VI Priors workshop with 'no edits' required

Semantic Segmentation of Head and Neck Histopathological Images Using Self Supervision 2020 - 2021

Advisor: Prof. Prathosh AP, IIT Delhi

- Self-supervised techniques, with finite labels show enormous potential, hence worked on context specific task.

Target-Independent Domain Adaptation (TIGDA) for WBC using Generative Latent Search 2020 - 2021

Advisor: Prof. Prathosh AP, IIT Delhi

- Acknowledged in the paper for the contributions made to the IEEE-TMI 2020 paper

SKILLS

- **Programming Languages:** Python, C, C++
- **Machine Learning, Deep Learning:** PyTorch, Tensorflow, Keras, Numpy, OpenCV, PIL
- **Tools:** LaTeX, Google Cloud Platform (GCP), git, Ubuntu Bash

REFERENCES

- **Prof. Dr. Julia Schnabel**, Director IML Helmholtz Munich & CompAI TU Munich
- **Prof. dr. Cees Snoek**, Head -Video & Image Sense Lab & Director ELLIS Amsterdam Unit, University of Amsterdam
- **Prof. Xiantong Zhen**, Research Scientist, United Imaging Healthcare, Co., Ltd, Previously University of Amsterdam