

# Sameer Ambekar

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## RESEARCH INTERESTS

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

## EDUCATION

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### 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

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### 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

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### 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.*

**Re Counterfactual Generative Networks.**

Ankit, Sameer Ambekar\*, Baradwaj Varadharajan, Mark Alence  
*MLRC 2021.*

**Twin Augmented Architectures for Robust Classification.**

Kartikeya Badola, **Sameer Ambekar**, Himanshu Pant, Sumit Soman, Rajiv Narang, Anuradha Sural, Jayadeva  
*arxiv.*

## 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

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- 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

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

## MACHINE LEARNING SUMMER SCHOOLS

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- 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

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**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

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- **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

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- **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