

Mohammad Mahdi Derakhshani

ML/CV PH.D. CANDIDATE

Visual & Sense Lab, Science Park 904, University of Amsterdam, Netherlands

☎ (+31) 686428916 | ✉ m.m.derakhshani@uva.nl | 🏠 mmderakhshani.github.io | 📄 mmderakhshani | 📺 mmderakhshani | 📖 Google Scholar

Education

University of Amsterdam, Informatics Institute

Amsterdam, Netherlands

PH.D. IN COMPUTER SCIENCE, SUPERVISORS: **PROF. CEES SNOEK**

Jan. 2020 - Present

- Thesis: Efficient Adaptation of Large-scale Vision and Language Models

University of Tehran, School of ECE

Tehran, Iran

M.Sc. IN COMPUTER SCIENCE, SUPERVISORS: **PROF. BABAK NADJAR ARAABI** AND **DR. MOHAMMAD AMIN SADEGHI**

Sept. 2015 - Sept. 2018

- GPA:18.21/20 (Ranked 1st out of 15)

University of Semnan, School of ECE

Semnan, Iran

B.Sc. IN COMPUTER SOFTWARE ENGINEERING.

Sept. 2011 - Sept. 2015

- GPA:18.58/20 (Ranked 1st out of 150)

Research Experience

Visual and Sense Lab, University of Amsterdam

Amsterdam, Netherlands

RESEARCH ASSISTANT

Jan. 2020 - Present

- Analyzing variational autoencoder in terms of disentangled representation and as a result interpretability
- Studying the effect of non-parametric classifier in continual learning.
- Conducting research on generative non-parametric method for continual learning.
- Investigating the effectiveness of energy-based models on continual learning.
- Coding continual learning library for medical imaging.
- A baseline for transferring knowledge from frozen text model to continual vision model.

Samsung AI Cambridge (SAIC)

Cambridge, United Kingdom

ML/CV INTERN, SUPERVISORS: **DR. BRAIS MARTINEZ** AND **DR. GEORGIOS TZIMIROPOULOS**

June 2022 - Oct. 2022

- Prompting large-scale language-image models.
- Federated Learning on Action Recognition.
- Self-supervised learning.

Oxford Machine Learning Summer School

London, United Kingdom

SUMMER SCHOOL PARTICIPANT

Aug. 2021

- Representation Learning and Statistical ML, Machine Learning in Healthcare, Natural Language Processing, and Artificial Intelligence for Good

Allen Institute for AI

Washington, United States

REMOTE COLLABORATION WITH **DR. MOHAMMAD RASTEGARI**

Sept. 2017 - Sept. 2018

- Working on the deficiencies of real-time object detectors, specifically YOLO and proposing a learning algorithm to increase YOLO performance while keeping its time efficiency.

Machine Learning and Computational Modeling Lab, University of Tehran

Tehran, Iran

RESEARCH ASSISTANT

Sept. 2016 - Sept. 2018

Publications

2022	Derakhshani et. al. “ Variational Prompt Tuning Improves Generalization of Vision-Language Models ”	Preprint
2022	Mohammad M. Derakhshani, Ivona Najdenkoska, Tom van Sonsbeek, Xiantong Zhen, Dwarkanath Mahapatra, Marcel Worring, and Cees G. M. Snoek, “ LifeLonger: A Benchmark for Continual Disease Classification ”, [code]	MICCAI, Singapore
2021	Mohammad M. Derakhshani, Xiantong Zhen, Ling Shao, Cees Snoek, “ Generative Kernel Continual Learning ”	Preprint
2021	Mohammad M. Derakhshani, Xiantong Zhen, Ling Shao, Cees Snoek, “ Kernel Continual Learning ”, [code]	ICML, Austria
2019	Mohammad M. Derakhshani, S. Masoudnia, AH. Shaaker, O. Mersa, MA. Sadeghi, M. Rastegari, B. Nadjar Araabi, “ Assisted Excitation of Activations: A Learning Technique to Improve Object Detectors ”	CVPR, USA
2018	D. Maleki, S. Nadalian, Mohammad M. Derakhshani, MA. Sadeghi, “ BlockCNN: A Deep Network for Artifact Removal and Image Compression ”, Workshop and Challenge on Learned Image Compression, [code]	CVPR, USA

Honors & Awards

- | | | |
|------|--|---------------------|
| 2018 | Ranked 1st among all AI & robotics M.Sc. students at the University of Tehran, and Straight Admission received from University of Tehran Ph.D. program in AI for outstanding academic success. | <i>Tehran, Iran</i> |
| 2015 | Ranked 1st among all computer software engineering B.Sc. students at the University of Semnan, and Straight Admission received from University of Semnan M.Sc. program in AI for outstanding academic success. | <i>Semnan, Iran</i> |

Skills

Technical Fields	Computer Vision, Machine Learning, Multi-modal Learning, Deep Learning
Software Developments	Data structures and algorithms, Object Oriented Programming
Languages	Python
Libraries	Pytorch, Wandb, Horovod, HuggingFace, Pandas
Typesetting & Tools	TEX, Markdown, Git, Regex, Slurm
Operating Systems	Linux, MacOS, Windows

Teaching Experience

- | | | |
|------|---|--------------------------------|
| 2022 | Deep Learning I TA for Dr. Yuki Asano | <i>University of Amsterdam</i> |
| 2021 | Deep Learning I TA for Dr. Xiantong Zhen | <i>University of Amsterdam</i> |
| 2020 | Machine Learning TA for Dr. Eric Nalisnick | <i>University of Amsterdam</i> |
| 2020 | Computer Vision I TA for Dr. Shaoqi You | <i>University of Amsterdam</i> |
| 2018 | DEEP LEARNING SUMMER SCHOOL - UTDLSS2018 Co-instructor and organizer - ACM. | <i>University of Tehran</i> |
| 2017 | DEEP LEARNING SUMMER SCHOOL - UTDLSS2017 Co-instructor - ACM. | <i>University of Tehran</i> |
| 2017 | DEEP LEARNING PRACTICAL WORKSHOP Teaching Pytorch at IEEE Branch, School of ECE | <i>University of Tehran</i> |
| 2017 | PYTHON DAY WORKSHOP Co-instructor - an introductory course for students registered in Machine Learning and Pattern Recognition course. | <i>University of Tehran</i> |

References

Cees Snoek

Informatics Institute
University of Amsterdam
✉ C.G.M.Snoek@uva.nl

Brais Martinez

Future Interaction Group
Samsung AI Cambridge
✉ brais.a@samsung.com