Marko Haralović

Email: mharalovic@ethz.ch — LinkedIn: linkedin.com/in/marko-Haralovic/
GitHub: github.com/MarkoHaralovic — Website: markoharalovic.github.io

Education

Master Thesis Student **Sep 2026 – Jul 2027**
ETH Zürich, Photogrammetry and Remote Sensing group *Zürich, Switzerland.*
- Supervisor: Dr. Li Mi (ETH); Mentor: Prof. Konrad Schindler (ETH); Collaboration with the OATML group at Oxford.

Master of Science in Data Science (Exchange Year) **Sep 2025 – Jul 2026**
University of Twente, Faculty of Electrical Engineering, Mathematics and Computer Science (EEMCS) *Enschede, Netherlands*
- Grade: 8.50/10.00, Mentor: Dr. Estefanía Talavera

Master of Science in Data Science **Sep 2024 – Jun 2027**
University of Zagreb, Faculty of Electrical Engineering and Computing *Zagreb, Croatia*
- Grade: 4.53/5.00, Mentors: Prof. Siniša Šegvić, Assoc. Prof. Dario Bojanjac

Bachelor of Science in Computer Science **Sep 2021 – Jun 2024**
University of Zagreb, Faculty of Electrical Engineering and Computing *Zagreb, Croatia*

Publications and preprints

[1] Zhiqi Miao, **Marko Haralović**, Stanislav Levendeev, Sarvesh Angadi, Dan Ploesteanu, Jannatul Ferdous, Jiapan Guo and Estefania Talavera. "GeoTRAM: Geometry-aware Trajectory Modeling for Few-Shot Action Recognition". In: *Winter Conference on Applications of Computer Vision (**WACV**)*. 2027.

[2] **Marko Haralović***, Sounic Akkaraju*, Carlo Baretta, Vasil Zapryanov, and Alexia Briasouli. "When Adaptation Hurts: Representational Drift Explains OOD Failures in MedSAM Fine-Tuning". In: ***Oral and Poster**, International Conference on Medical Image Computing and Computer-Assisted Intervention Workshop (**MICCAI-W**)*. 2026.

[3] **Marko Haralović***, Zhiqi Miao*, Alexander Bont, Jiapan Guo, Frans van Wokum, and Estefania Talavera. "Beyond Instrument Motion: Recognizing Tissue Tension for Surgical Skill Assessment". In: ***Oral and Poster**, European Conference on Computer Vision Workshops (**ECCV-W**)*. 2026.

[4] **Marko Haralović**, Akash Ramakrishnan, and Estefania Talavera. "G3Ego: Gaze-Guided Graphs for Egocentric Action Understanding". In: ***Oral and Poster** European Conference on Computer Vision Workshops (**ECCV-W**)*. 2026.

[5] **Marko Haralović**, Onat Akca, Salih Eren Yuceturk, Minsi Li, and Mariet Theune. "CrisisKD: Five-Stage Knowledge Distillation for Aspect-Level Sentiment and Emotion Analysis in Crisis Discourse". In: *Conference on Empirical Methods in Natural Language Processing Workshops (**EMNLP-W**)*. 2026.

Experience

Master Thesis Internship **Sep 2026 – Apr 2027**
ETH Zürich, Photogrammetry and Remote Sensing Group *Full-time*
- Supervisor: Dr. Li Mi (ETH); Mentor: Prof. Konrad Schindler (ETH); Collaboration with the OATML group at Oxford.
- Topic: Probing Geospatial Knowledge in Vision-Language Models: A Hallucination Benchmark for Real-World Place, Entity, and Relation Queries.

Founder **2023 – Present**
Stealth AI Company - Computer Vision Consultancy *Zagreb, Croatia*
- Founded an AI consultancy specializing in computer vision and machine learning for engineering and research.
- Led research and development of custom computer vision and machine learning solutions for external clients.

Research Assistant **Nov 2025 – Aug 2026**
University of Twente, EEMCS *Part-time*
- Vision Group research internship under supervision of Dr. Estefania Talavera.
- Automatic video surgical skill assessment from in-vivo laparoscopic surgeries (da Vinci robot-assisted platform).
- Produced 5 first-author papers (WACV, ECCV-W x2, MICCAI-W, EMNLP-W)

Multimodal Deep Learning Researcher **Dec 2024 – Sep 2025**
Arkensight *Full-time*
- Led research on open-vocabulary object detection using DETR-style architectures.Reduced hallucination rates by 60%.
- First technical hire; Achieved state-of-the-art (or near) performance on 20+ object detection benchmarks.
- Developed open-vocabulary detection models, custom encoders and re-identification heads for multi-object tracking.
- Implemented CLIP-based re-identification and fine-grained visual classification, achieving 86% mAP on MSMT17.
- Designed modular dataset pipelines for 100+ datasets (500,000+ images). GCP, AWS.
- Modeled dense one-to-one loss signals for object detection and re-identification within GroundingDINO.

Research Assistant **Mar 2025 – Jul 2025**
Faculty of Electrical Engineering and Computing, University of Zagreb *Part-time*

- Contributed as a researcher to an international **Google research project** on multi-task, multi-class image classification of road safety attributes.
- Developed and evaluated computer vision models, achieving SOTA 64.9% macro F1 score on iRAP-BH.
- Mentored by Professor Sinisa Segvic.

Computer Vision Research Intern **Aug 2024 – Oct 2024**
Visage Technologies *Full-time*

- Evaluated masked image modeling pretraining on ConvNeXt-V2 for image classification and object detection tasks.
- Improved training efficiency by up to 10x on a single GPU while achieving state-of-the-art results on ImageNet100.

Data Science Intern **Jul 2024 – Aug 2024**
mStart, Fortenova Group *Full-time*

- Led an individual project on demand forecasting for a large grocery retail supplier in Croatia.

Junior Deep Learning Engineer, R&D **Nov 2022 – Jul 2024**
Ericsson *Full-time*

- Performed Aspect-Based Sentiment Analysis (ABSA) using BERT on large-scale internal datasets.
- Co-led an object detection project using Sentinel-2 and Sentinel-3 satellite imagery to detect fish cages globally.
- Implemented Faster R-CNN models achieving 87% F1 score and 95% recall.

Data Science Intern, R&D Summer Program **Jul 2022 – Sep 2022**
Ericsson *Full-time*

- Developed regression models for remote sensing analysis of Adriatic Sea conditions using Sentinel-3 satellite imagery.

Honors and awards

FER Scholarship for International Research Mobility, 1 of 5 awarded — thesis research at ETH Zurich	July 2026
Best Performance Award, ACDC Challenge, Medical Image Analysis, UTwente, rank 1/12	Apr 2026
AMAC FER Alumni Scholarship for Academic Excellence 2025/2026, top 1%	Dec 2025
Rector's Award – Methods for Assessing and Improving the Fairness of Deep Classifiers, awarded to 0.2% of students	Nov 2025
1st Place, LUMEN Data Science Competition 2025, rank 1/30	May 2025
2nd Place, HACKL Hackathon – City of Zagreb, rank 2/20	Apr 2025
ERASMUS+ Scholarship 2025/2026	Mar 2025
4th Place, Algotrade Hackathon 2024, rank 4/75	Apr 2024
2nd Place, Ericsson Award for Best Student Work 2021/2022	Nov 2022
STEM Scholarship, Top 1% High School Students	Sep 2021
3rd Place, Croatian National Philosophy Competition, rank 3/30 of finalists	Apr 2021

Summer Schools and Academies

Mediterranean Machine Learning Summer School (M2L), Top 20% of applicants	Sep 2025
Sofascore Data Science Academy, Top 5% of Applicants	Mar 2024 – Jun 2024
EEML: Croatian Machine Learning Workshop, Top 20% of applicants	Nov 2024

Recommendations

Dr. Estefanía Talavera (Research Advisor, University of Twente), Assoc. Prof. Dario Bojanjac (Master's Advisor, FER), Prof. Siniša Šegvić (Bachelor Advisor, FER), Assoc. Prof. Alexia Briassouli (Research Advisor, University of Twente), Bruno Ćorić (CTO, Arkensight), Igor Marasović (Tech Lead, Ericsson)

Projects

In-Context Learning vs LoRA Fine-Tuning for Gemma3 and BERT **Sep 2025 – Nov 2025**

- Compared in-context learning and LoRA fine-tuning for Gemma3 and BERT in low-resource NLP settings.

Zero-Shot Image Retrieval on MSLS London **Sep 2025 – Nov 2025**

- Developed Image retrieval methods, achieved 46.4% Recall@1 using a GPS centroid-based approach.

Skin Lesion Classification for Melanoma Detection **Nov 2024 – May 2025**

- Built melanoma classification models with fairness-aware optimization; 1st place at the 2025 LUMEN Data Science.

Bachelor Thesis : Semantic Segmentation of Satellite Images **Sep 2023 – Jul 2024**

- Semantic segmentation models on the DeepGlobe Land Cover dataset using SwiftNet and MagNet, achieving 73% mIoU.

Cyber Attacks and Defenses on Deep Neural Networks **Sep 2023 – Jun 2024**

- Led a 10-member research project implementing cyber attacks and defenses on CNNs.