

# Ismail Elezi

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I am a Senior Research Scientist of Computer Vision, leading the multi-modality learning team in Huawei Noah's Ark lab in London. I worked before in deep metric learning, self and semi-supervised learning, open-world and long-tail detection, active learning, and generative models (GANs and diffusion models). Currently I am focused on researching new models in multi-modality learning (visual LLMs). I frequently publish in top tier vision (CVPR, ICCV, ECCV) and ML conferences (NeurIPS, ICML, AAAI). ***h-index: 15, citations: 964.***

## WORKING EXPERIENCE

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<b>Deep Learning Senior Researcher: Huawei</b> <i>Build and leading a team in multi-modality learning and VLMs.</i>	April 2023 - London, UK
<b>Deep Learning Research Visitor: Argo AI</b> <i>Worked on semi-supervised LiDAR data for object segmentation.</i>	June 2022 - September 2022 Munich, Germany
<b>Alexander von Humboldt Postdoctoral Researcher: TUM</b> <i>Research, mentored Ph.D. and master students, co-taught several courses.</i>	Oct 2020 - March 2023 Munich, Germany
<b>Deep Learning Research Intern: NVIDIA</b> <i>Resulted in papers accepted to CVPR and ICCV.</i>	Feb. 2020 - Sept. 2020 Santa Clara, US

## EDUCATION

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<b>Ph.D. in Deep Learning</b> <i>Ca' Foscari University of Venice, Venice, Italy</i>	Sep. 2016 – July 2020 Grade: Distinction
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- Completed Ph.D. under the supervision of professors Marcello Pelillo and Thilo Stadelmann. Spent a year at TUM.

## SELECTED PUBLICATIONS

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- Miles, Reddy, **Elezi**, and Deng. Velora: Memory efficient training using rank-1 sub-token projections. *NeurIPS24*
- Reddy\*, **Elezi**\*, and Deng. G3dr: Generative 3d reconstruction in imagenet. *CVPR24*
- Miles, **Elezi**, and Deng. Vkd: Improving knowledge distillation using orthogonal projections. *CVPR24*
- Ma, **Elezi**, Deng, Dong, and Xu. Three heads are better than one: Complementary experts for long-tailed semi-supervised learning. *AAAI24*
- Seidenschwarz, Brasó, Serrano, **Elezi**, and Leal-Taixé. Simple cues lead to a strong multi-object tracker. *CVPR23*
- Elezi**\*, Seidenschwarz\*, Wagner\*, Vascon, Torcinovich, Pelillo, and Leal-Taixé. The group loss++: A deeper look into group loss for deep metric learning. *tPAMI23*
- Kocsis, Sukenik, Brasó, Niessner, Leal-Taixé, and **Elezi**. The unreasonable effectiveness of fully-connected layers for low-data regimes. *NeurIPS22*
- Fomenko, **Elezi**, Ramanan, Osep, and Leal-Taixé. Learning to discover and detect objects. *NeurIPS22*
- Elezi**, Yu, Anandkumar, Leal-Taixé, and Alvarez. Not all labels are equal: Rationalizing the labeling costs for training object detection. *CVPR22*
- Choi, **Elezi**, Lee, Farabet, and Alvarez. Active learning for deep object detection via probabilistic modeling. *ICCV21*
- Seidenschwarz, **Elezi**, and Leal-Taixé. Learning intra-batch connections for deep metric learning. *ICML21*
- Elezi**, Vascon, Torcinovich, Pelillo, and Leal-Taixé. The group loss for deep metric learning. *ECCV20*
- Maximov\*, **Elezi**\*, and Leal-Taixé. CIAGAN: conditional identity anonymization generative adversarial networks. *CVPR20*

\* = equal contribution. For a full list of papers, please check my Google Scholar.

## SKILLS

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**Programming:** Python, PyTorch, Tensorflow, openCV, sklearn, Java, Matlab/Octave, C, C#, C++.  
**Languages:** Albanian (Mother tongue), English (fluent), Italian (intermediate), German (beginner).

## REVIEWING DUTIES

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**Area Chair:** WACV 2021

**Conferences:** CVPR 2020, 2021\*, 2022, 2023, 2024; ICCV 2021\*; ECCV 2022, 2024; NeurIPS 2021; ICML 2022; ICLR 2024; IJCAI 2021; BMVC 2019, 2020; ACCV 2020\*; WACV 2022. \* = outstanding reviewer

**Journals:** IJCV, TMLR, Pattern Recognition, CVIU.

**Workshops:** Applications of Computer Vision and Pattern Recognition to Media Forensics (CVPR affiliated) 2019, 2020, 2021, 2022, 2023, 2024; Deep Vision (CVPR affiliated) 2020; Autonomous Driving (CVPR affiliated) 2021, 2023, 2024.

**Session Chair:** WACV 2021, ICPR 2020.

## SELECTED INTERNS AND THESISISTS SUPERVISED

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Xin Wen (2024) - intern from the University of Hong Kong.

Aysim Toker (2024) - intern from Technical University of Munich.

Tatiana Gaintseva (2024) - intern from Queen Mary University.

Changrui Chen (2024) - intern from University of Warwick.

Bingchen Zhao (2024) - intern from University of Edinburgh.

Prannay Kaul (2024) - intern from University of Oxford – > research scientist at Amazon.

Yongshuo Zong (2024) - intern from University of Edninburgh, paper together in ICML workshop.

Konstantinos Alexandridis (2023) - intern from King’s College – > research scientist at Huawei.

Roy Miles (2023) - intern from Imperial College, paper together at CVPR – > research scientist at Huawei.

Chengcheng Ma (2023) - intern from Chinese Academy of Sciences, paper at AAAI – > research scientist at Kunlun.

Yunqi Miao (2023) - intern at Huawei from University of Warwick – > research scientist at Huawei.

Jenny Seidenschwarz - masters and Ph.D. student at TUM (2020-2023), papers together at ICML, tPAMI, CVPR.

Franziska Gerken - Ph.D. student at TUM (2020-2023), submission together at eLife.

Volodymyr Fomenko - masters at TUM (2021-2022), paper together at NeurIPS – > Technical Staff at OpenAI.

Peter Kocsis - masters at TUM (2021-2022), paper together at NeurIPS – > Ph.D. student at TUM.

Laurin Wagner - masters at TUM (2020-2021), paper together at tPAMI – > ML Research Engineer at myReha.

Peter Sukenik - masters at TUM (2021), paper together at NeurIPS – > Ph.D. student at IST Austriat.

Feliks Hibraj (2020-2021) - intern at TUM – > software engineer at Snap Inc.

## TEACHING EXPERIENCE

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Deep Learning with Pytorch at Datacamp (2019): instructor. Developed during my Ph.D., over 28K students attended the course, before it got retired in December 2023.

Introduction to Deep Learning at TUM (2022): co-instructor. Gave half of the lectures, and was in charge of the exam. Around 1000 students attended the course.

Advanced Computer Vision at TUM (2021 and 2022): co-instructor. Gave several lectures, lead the office hours, and was in charge of the exam. 30 students attended the course.

Computer Vision III: Detection, Segmentation, and Tracking at TUM (2022): co-instructor. Gave several lectures, lead the office hours, and was in charge of the exam. Around 150 students attended the course.

Introduction to Machine Learning at Analytics: instructor. Designed and gave a course for the company’s internal training. 10 employees attended the course.

## REFERENCES

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Jiankang Deng, manager at Huawei, [jiankangdeng@huawei.com](mailto:jiankangdeng@huawei.com)

Laura Leal-Taixe, postdoc supervisor at TUM, now Senior Manager at Nvidia [llealtaixe@nvidia.com](mailto:llealtaixe@nvidia.com)

Jose M. Alvarez, manager at Nvidia, now Director at Nvidia [josea@nvidia.com](mailto:josea@nvidia.com)

Marcello Pelillo, Ph.D. supervisor at Ca’ Foscari, [marcello.pelillo@unive.it](mailto:marcello.pelillo@unive.it)

Thilo Stadelmann, Ph.D. co-supervisor at ZHAW, [thilo.stadelmann@zhaw.ch](mailto:thilo.stadelmann@zhaw.ch)