

# Francesco Di Salvo

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RESEARCH INTERESTS *Robust Machine Learning*: To design robust, explainable, and generalizable algorithms capable of overcoming challenges posed by distribution shifts, out-of-distribution data, label noise, and inherent uncertainties.

EDUCATION **University of Bamberg** Bamberg, Germany  
• Ph.D. in Machine Learning Apr. 2023 - Present  
*Advisor*: Christian Ledig

**Polytechnic University of Turin** Turin, Italy  
• M.Sc. in Data Science and Engineering (109/110) Oct. 2020. - Oct. 2022

**University of Palermo** Palermo, Italy  
• B.Sc. in Computer Engineering (*with Honours*) Sept. 2017 - July. 2020

RESEARCH EXPERIENCE **NATO STO CMRE** ◊ Anti Submarine Warfare division La Spezia, Italy  
• Research Intern, Young Scientist Internship Nov. 2022 - Mar. 2023  
– *Research Manager*: Alessandra Tesei, Giorgio Urso.  
– *Topic*: Anomaly detection on underwater acoustic data.

**Radboud University Medical Center** ◊ AXTI Lab Nijmegen, Netherlands  
• Research Intern, Master's Thesis Mar. 2022 - Aug. 2022  
– *Advisors*: Marco Caballo, Filippo Molinari.  
– *Topic*: Bayesian uncertainty for lesion classification and segmentation.

SELECTED PAPERS Full list on Google Scholar.

1. *Privacy-preserving datasets by capturing feature distributions with Conditional VAEs*  
**Francesco Di Salvo**, David Tafler, Sebastian Doerrich, Christian Ledig  
British Machine Vision Conference 2024 (BMVC).
2. *MedMNIST-C: Comprehensive benchmark and improved classifier robustness by simulating realistic image corruptions*  
**Francesco Di Salvo**, Sebastian Doerrich, Christian Ledig  
Advancing Data Solutions in Medical Imaging AI 2024 (ADSMI@MICCAI, Oral).
3. *Self-supervised ViT are Scalable Generative Models for Domain Generalization*  
Sebastian Doerrich, **Francesco Di Salvo**, Christian Ledig  
Medical Image Computing and Computer Assisted Intervention Society 2024 (MICCAI).
4. *An Embedding is Worth a Thousand Labels*  
**Francesco Di Salvo**, Sebastian Doerrich, Ines Rieger, Christian Ledig  
Under review at the International Journal of Computer Vision (IJCV).

EXPERIENCE	<b>AIKO Space</b>	Turin, Italy
	<ul style="list-style-type: none"> <li>• Deep Learning Engineer Intern</li> <li>– <i>Topic:</i> Monocular Visual Odometry in planetary-like environments.</li> <li>– Improved rotation error by 27% through image preprocessing.</li> </ul>	Oct. 2021 - Jan. 2022
TEACHING	<i>University of Bamberg</i>	
	<b>Thesis supervision</b> – 2× Master’s, 1× Bachelor’s	
	<b>Mathematics in Machine Learning</b>	Summer 2023, 2024
	<b>Robust Machine Learning</b> – Master’s project	Winter 2023, 2024 Summer 2024
	<b>Deep Learning</b>	Winter 2023
ATTENDANCE	<b>Mediterranean Machine Learning Summer School</b>	Milan, Italy
	– Hosted by Google and Google DeepMind.	Sept. 2024
COMMUNITY	<b>Lead The Future</b> , Member	Sept. 2023 - Present
	– Among the few Italian students selected to be mentees for LeadTheFuture, a leading mentorship non-profit organization for students in STEM, with acceptance rate < 20%.	
	<b>Omdena</b> × <b>Symbaiosys</b> , Volunteer Machine Learning Engineer	Apr. 2021 - Jun. 2021
	– Designed predictive models for quantifying the impact of forest restoration projects.	
	– Team leader of the data acquisition pipeline, with more than 20 volunteers.	
	<b>Vivere Ingegneria</b>	Sept. 2018 - July 2020
	– Mentored and trained incoming freshmen for their admission exams.	
	– Conducted monthly tutoring classes with 50+ students in Linear Algebra and Calculus.	
TECHNICAL PROFICIENCY	<i>Programming</i>	
	Python*, MATLAB, C++	
	<i>Software / Framework</i>	
	PyTorch*, TensorFlow, Scipy*, Scikit-Learn*, OpenCV, Wandb*, L <sup>A</sup> T <sub>E</sub> X*	
	(*) implies a sufficient level of expertise.	