

# Laura Meneghetti

## EDUCATION

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- **SISSA** Trieste, Italy  
*PostDoctoral Researcher* October 2022 - now  
*PostDoc in Mathematical Analysis, Modeling and Applications, MathLab group. Working on continuation of my PhD project and collaborations with companies on deep learning themes. Since 2023 I am a researcher in the iNEST project.*
- **SISSA/Electrolux Professional** Trieste, Italy  
*PhD in Mathematical Analysis, Modeling and Applications* October 2018 - September 2022  
*PhD in collaboration between SISSA (MathLab group) and Electrolux Professional (Research Hub, AD&T Team) in the frame of the project "Artificial Intelligence Solutions for Performance Enhancement of Professional Food Service Appliances"*
- **Università degli studi di Padova, UniPD** Padova, Italy  
*Master of Science in Mathematics, GDA: 110/110 cum laude* October 2016 - October 2018  
*Thesis title: "Towards a continuous dynamic model of the Hopfield theory on neuronal interaction and memory storage"*
- **Università degli studi di Padova, UniPD** Padova, Italy  
*Bachelor of Science in Mathematics, GDA: 103/110* October 2012 - July 2016

## SKILLS SUMMARY

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- **Languages:** Italian (mother tongue), English (B2), German (A2)
- **Programming Languages:** Python, MATLAB, AMPL, Mathematica
- **Frameworks:** Scikit, Pytorch, TensorFlow(brief experience), Keras(brief experience), Numpy, OpenCV, Matplotlib
- **Tools:** GIT, Bitbucket, Jira, Slack, Trello
- **Platforms:** Linux, Windows, MacOS
- **Soft Skills:** Leadership, Event Management, Writing, Public Speaking, Time Management, Team work

## EXPERIENCE

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- **SIMAI2023** Matera, Italy  
*Invited Speaker "A Reduced Order Approach for Artificial Neural Networks applied to Object Recognition"* 28 August -1 September 2023
- **ModML MaLGa Summer School** Genova, Italy  
*Participant* 19 - 23 June 2023
- **M2P 2023** Taormina, Italy  
*Lecturer "A Reduced Order Approach for Artificial Neural Networks applied to Object Recognition"* 30 May -1 June 2023
- **ICIP2022 - IEEE International Conference on Image Processing** Bordeaux, France  
*Poster presenter "A Proper Orthogonal Decomposition approach for parameters reduction of Single Shot Detector networks"* 16-19 October 2022
- **PRIMO Workshop 2022** Trieste, Italy  
*Lecturer "Reduced Convolutional Neural Networks for image recognition and object detection"* 6-8 September 2022
- **Summer School on Reduced Order Methods in Computational Fluid Dynamics** Trieste, Italy  
*Lecturer "A reduced Approach for Artificial Neural Networks"* 11-15 July 2022
- **Conference: 100 UMI-800 UniPD** Padova, Italy  
*Speaker UMI meeting PhD students "Reduced Convolutional Neural Networks for image recognition and object detection"* 23-27 May 2022
- **Workshop: RAMSES (SISSA)** Trieste, Italy  
*Poster presenter "Reduced Convolutional Neural Networks for image recognition in professional appliances"* 14-17 December 2021
- **Conference: SIMAI 2020+2021, Unipr** Parma, Italy  
*Speaker Industrial session* 30 August - 3 September 2021
- **SAMM2020: Learning Models from Data** Virtual  
*Poster presenter* 27-31 July 2020
- **Summer School on Reduced Order Methods in Computational Fluid Dynamics** Trieste, Italy  
*Participant, PhD student* 8-12 July 2019
- **International Summer School on Artificial Intelligence- AI-DLDA** Udine, Italy  
*Participant, PhD student* 4-6 June 2019
- **Workshop: Scientific computation using machine-learning algorithms** Nottingham, UK  
*Participant, PhD student* 25-26 April 2019
- **Master in Robotics, University of Trieste** Trieste, Italy  
*Instructor: 2h lesson on Artificial Intelligence and Neural Networks* 15 March 2019  
*Topic :Introduction to the basis of artificial intelligence and artificial neural networks*
- **TEX2018 M-GATE School: Under the Surface of Memory Phenomena (SISSA)** Trieste, Italy  
*Participant, Master student* 25 June - 3 July 2018
- **Workshop: Recent advances in Hamiltonian dynamics and symplectic topology** Padova, Italy  
*Participant, Master student* 12-16 February 2018

## PROJECTS

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- **Image Recognition for storage machines:** Industrial collaboration with INDACO Project.
- **Image Recognition and Object Detection for professional appliances:** PhD project with Electrolux Professional: development of a reduced method for Artificial Neural Networks (in particular Convolutional Neural Networks) and Object Detectors (SSD) to solve memory storage problems in embedded systems in professional appliances.

## PUBLICATIONS

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- **Deep Neural Network Compression via Tensor Decomposition:** Zanin, S., Meneghetti, L., Demo, N., and Rozza, G., in preparation, 2024
- **A Proper Orthogonal Decomposition approach for parameters reduction of Single Shot Detector networks:** Meneghetti, L., Demo, N., and Rozza, G., 2022 IEEE International Conference on Image Processing (ICIP), Bordeaux, France, 2022, pp. 2206-2210, doi: 10.1109/ICIP46576.2022.9897513
- **A Continuous Convolutional Trainable Filter for Modelling Unstructured Data:** D. Coscia, L. Meneghetti, N. Demo, G. Stabile, and G. Rozza., Computational Mechanics, Springer, 2023, doi: 10.1007/s00466-023-02291-1
- **A Deep Learning Approach to Improve ROMs:** L. Meneghetti, N. Shah, M. Girfoglio, N. Demo, M. Tezzele, A. Lario, G. Stabile, and G. Rozza. In: “Advanced Reduced Order Methods and Applications in Computational Fluid Dynamics”. Society for Industrial & Applied Mathematics (SIAM), 2022.
- **A Dimensionality Reduction Approach for Convolutional Neural Networks:** Meneghetti, L., Demo, N., and Rozza, G., Applied Intelligence, Springer, 2023, pp. 1–16, doi: 10.1007/s10489-023-04730-1

## HONORS AND AWARDS

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- PHD4INNOVATING special mention for the PHD4PMI challenge ESOF2020 edition, team IMT-SISSA4PORTS, ESOF2020, September 2020