

Prof. Alessio Micheli
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Personal information

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Summary

Prof. Dr. Alessio Micheli received the Ph.D. degree in Computer Science from the University of Pisa, Italy, in 2003.

Currently, he is Full Professor at the Department of Computer Science of the University of Pisa, where he is the head and scientific coordinator of the Computational Intelligence & Machine Learning Group (CIML), part of the CLAIRE-AI.org Research Network.

He is the national coordinator of the "Italian Working group on Machine Learning and Data Mining" (with around 50 participating groups) of the Italian Association for Artificial Intelligence and he is director of the University of Pisa node of the CINI AIIS (Artificial Intelligence and Intelligent Systems) national laboratory.

He has been co-founder and co-chair of the IEEE CIS Task Force on Reservoir Computing and he is an elected member of the Executive committee of the European Neural Network Society – ENNS.

His research interests include Machine Learning, Neural Networks and Deep Learning, with an emphasis on novel approaches for learning in structured domains (sequence, tree and graph data), including recurrent and recursive neural networks, reservoir computing, probabilistic and kernel-based models for non-vectorial data and, in particular, a pioneering contribution in the field of constructive convolutional deep neural networks for graphs (Micheli, *IEEE Transactions on Neural Networks*, 2009), with recent contributions in top-tier conferences such as *ICML*, *ICLR* and *AAAI*. The results include also the theoretical analysis of unsupervised and supervised models for structured domains and the extension of very efficient Deep Learning approaches to structured data. The applications area includes Health and Bio/ChemInformatics (innovative QSPR/QSAR approaches by learning directly from molecular structures since the end of 90's), Robotics and Intelligent Sensor Networks.

He has been involved in several national, European (EU FP5, FP6, FP7, H2020, NextGeneration), and industrial projects in the fields of artificial intelligence, computational intelligence, robotics and bio-cheminformatics and healthcare.

In these research areas, he has authored (at 2023) over 200 articles in international refereed journals and conferences and book chapters. The main publications included the following journals: *IEEE TNN* and *TNNLS*, *JMLR*, *Neural Networks*, *Neural Computation*, *Neurocomputing*, *PloseOne*, *JAISE*, *EAAI*, *NCA*, *AIIM*, *JMG*, *JCIM/JCICS*.

He has been visitor at the Wollongong University, Australia; the Neural Computing Research Group (NCRG), Aston University, UK; the Institute for Genomics and Bioinformatics, University of California, Irvine, CA, USA; the Neuroinformatics group, Bielefeld University, Bielefeld, Germany.

He joined the program committees of several conferences and workshops in Machine Learning and Artificial Intelligence, he served as a member of the senior program committee (SPC) of *IJCAI-ECAI 22* and he currently serves as an Associate Editor of *IEEE Trans. on Neural Networks and Learning Systems* and in the Editorial Board of *Neural Networks - Elsevier*.

He has been guest editor for special issues on *IEEE TNNLS*:

- “New Frontiers in Extremely Efficient Reservoir Computing” (2020-21)
- “Deep Neural Networks for Graphs: Theory, Models, Algorithms and Applications” (2020-23)

He has been teaching courses related to Artificial Intelligence and Machine Learning for the BSc and MSc degree courses of studies in Computer Science, University of Pisa since 2003, with also the supervision of several PhD and master degree students.

Publications (with citations and H-index):

- [Google Scholar page](https://scholar.google.it/citations?user=rnaNixYAAAAJ): <https://scholar.google.it/citations?user=rnaNixYAAAAJ>
- [Scopus page](https://www.scopus.com/authid/detail.uri?authorId=7005491410): <https://www.scopus.com/authid/detail.uri?authorId=7005491410>

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