

## Curriculum Vitae di Emanuela Merelli

Computer Science Division, School of Science and Technology, Università degli Studi di Camerino  
Via del Bastione, 1, 62032 Camerino  
phone: [REDACTED]  
email: [REDACTED]  
web: <http://www.cs.unicam.it/merelli>

Emanuela Merelli is Full Professor of Computer Science at the University of Camerino since November 2015. She has been Associate Professor (2006-2015) and Assistant Professor (2001-2006) at the University of Camerino. From December 2004 to May 2005 she was Fulbright Scholar at Computer Science Department of the University of Oregon, Eugene, USA; from September 1998 to December 1998, Visiting Researcher at School of Information System of the University of East Anglia in Norwich (UK); from April 1987 to October 1987, young researcher at National Research Institute (CNR), Pisa; from December 1985 to December 1986, Visiting Scientist Fellowship at European Networking Center, IBM, Heidelberg, Germany and August 1984 to September 1985, Honorary Scholar, Ing. C. Olivetti S.p.A., Ivrea, Italy, to develop the Master Thesis. She received Laurea Degree in Computer Science from the University of Pisa and PhD in Artificial Intelligent Systems from the University of Ancona. From 2006 to 2012 he has been chairing the Computer Science unit that integrates teaching and research activities and promoting the internationalisation of teaching and research activities. Since April 2010, she is the Coordinator of the PhD program in Computer Science of the University of Camerino. She is member of EATCS council.

Emanuela Merelli has been active in the area of formal and optimization methods, and agent-oriented modelling, verification and simulation of biological systems, among which cell cycle, pacemaker excitable cells, bone re-modelling and immune system. Currently, she is working in the area of data science for launching a new program on "topological field theory of data" with the aim of helping to pave the way for the synthesis of automata as recognizers of behavioural languages derived from a topological data analysis. She published many papers, some of them with interdisciplinary character, in refereed international journals. She has been continuously involved in the organization of interdisciplinary events among which she conceived "From Biology to Concurrency and Back (FBTC)" and the EATCS Young Research School on understanding complexity and concurrency through Topology of Data.

She has been the Coordinator of the EC-FET Project TOPDRIM, Topology driven Method for Complex Systems, and of a consortium of six international research partners. Principal Investigator of many national and international projects among which a FIRB Research Project Interdisciplinary Laboratory of Bioinformatics Technologies (LITBIO) and Strategic Research Project Oncology over Internet funded by MIUR (Ministero dell'Istruzione, Università e Ricerca). He leads the BioShape and Data Science Interdisciplinary Laboratory at University of Camerino.

Emanuela Merelli is among the European Commission's experts since 2011. She has been involved both as evaluators and reviewer in several EU projects. At EU-FET11 Conference her scientific work on "Methodological Bridges for Multi-Level Systems" has been awarded; at EU-ICT 2015 she organized two networking sessions on Mathematics and ICT; at the EU Consultation Workshop on "Mathematics for Digital Science" and for EU-FET "Market of Ideas" she proposed a new research perspective for going "Beyond Turing". She has been also invited by EU-DG CONNECT to give a talk on "Topological Field Theory of Data" among future and emerging technologies seminars.

### List of recent publications

- M. Rasetti, E. Merelli The Topological Field Theory of Data: mining data beyond complex networks. Cambridge University Press (2016)
- The Topological Field Theory of Data: a program towards a novel strategy for mining data through data language. J. Physics CS-626 (2015)
- E. Merelli N. Paoletti, L. Tesei Adaptability checking in complex systems. Science of Computing Programming, vol. 115-116, (2016)
- E. Merelli, M. Pettini and M. Rasetti Topology driven modelling, the Immune System metaphor. Natural Computing, 14(3), (2015)
- E. Merelli, M. Rucco, P. Sloot, L. Tesei Topological Characterization of Complex Systems: Using Persistent Entropy. Entropy 17(10), (2015)

An extended version of Emanuela Merelli curriculum can be found at <http://computerscience.unicam.it/merelli/CV.pdf>