

# **Studies in Computational Intelligence**

Volume 549

*Series editor*

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### *About this Series*

The series “Studies in Computational Intelligence” (SCI) publishes new developments and advances in the various areas of computational intelligence—quickly and with a high quality. The intent is to cover the theory, applications, and design methods of computational intelligence, as embedded in the fields of engineering, computer science, physics and life sciences, as well as the methodologies behind them. The series contains monographs, lecture notes and edited volumes in computational intelligence spanning the areas of neural networks, connectionist systems, genetic algorithms, evolutionary computation, artificial intelligence, cellular automata, self-organizing systems, soft computing, fuzzy systems, and hybrid intelligent systems. Of particular value to both the contributors and the readership are the short publication timeframe and the world-wide distribution, which enable both wide and rapid dissemination of research output.

Pierluigi Contucci · Ronaldo Menezes  
Andrea Omicini · Julia Poncela-Casasnovas  
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# Complex Networks V

Proceedings of the 5th Workshop  
on Complex Networks CompleNet 2014

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# Preface

The International Workshop on Complex Networks – CompleNet ([www.complenet.org](http://www.complenet.org)) was initially proposed in 2008 with the first workshop taking place in 2009. The initiative was the result of efforts from researchers from the *BioComplex Laboratory in the Department of Computer Sciences at Florida Institute of Technology, USA*, and the from the *Dipartimento di Ingegneria Informatica e delle Telecomunicazioni, Università di Catania, Italia*.

CompleNet aims at bringing together researchers and practitioners working on areas related to complex networks. In the past two decades we have been witnessing an exponential increase on the number of publications in this field. From biological systems to computer science, from social systems and language to science of science, complex networks are becoming pervasive in many fields of science. It is this interdisciplinary nature of complex networks that CompleNet aims at addressing. CompleNet 2014 was the fifth event in the series and was hosted by the Università di Bologna, Italy, on March 12–14, 2014.

This book includes the some of the peer-reviewed works presented at CompleNet 2014. We received 86 submissions from 32 countries. Each submission was reviewed by at least 3 members of the Program Committee. Acceptance was judged based on the relevance to the symposium themes, clarity of presentation, originality and accuracy of results and proposed solutions. After the review process, 12 papers and 18 short papers were selected to be included in this book.

The 30 contributions in this book address many topics related to complex networks and have been organized in five major groups: (1) Social Networks, Social Media and the Arts, (2) Diffusion, transportation and search on networks, (3) Network theory, structure, growth and community detection, (4) Biological and health-related networks, and (5) Language networks and science of science

We would like to thank the Program Committee members for their time and expertise spent for the refereeing process. We deeply appreciate the efforts of our Keynote Speakers: Raffaella Burioni (Università di Parma, Italy), Tamás Vicsek (Eötvös University, Hungary), Alessandro Vespignani (Northeastern University, Boston, US); their presentations are among the reasons CompleNet 2014 was such a success. We are grateful to our Invited Speakers who enriched CompleNet 2014 with their

presentations and insights in the field of Complex Networks: Juyong Park (KAIST, South Korea), Mirkodegli Esposti (Università di Bologna, Italy), Stephen Uzzo (New York Institute of Technology), Giorgio Fagiolo (Sant'Anna School of Advanced Studies, Pisa, Italy), Adriano Barra (Università La Sapienza di Roma, Italy), Bruno Gonçalves (Aix-Marseille Université, Marseille, France).

Special thanks also go to the Local Organizer and Poster Chair, Enrico Denti (Università di Bologna, Italy), the Steering Committee, Giuseppe Mangioni (Università di Catania, Italy) and José Mendes (University of Aveiro, Portugal).

Bologna, Italy  
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