CV of Franco Zambonelli – September 28, 2022

Personal Information

Name and Surname: Franco Zambonelli – Date of Birth: 12th of January, 1966 – Nationality: Italian

Orcid ID: orcid.org/0000-0002-6837-8806#sthash.Q2ZzdQN1.dpuf

Website: http://personale.unimore.it/rubrica/dettaglio/zambonelli

Current Position

- Full Professor of Computer Science, University of Modena and Reggio Emilia, since Oct. 2010.

Education and Past Positions

- March 1992: "Laurea" (5-years University Degree) in Electronic Engineering, University of Bologna (Italy).
- Oct. 1992 - Sept. 1993: 1 Year Research Fellowship at HP Labs Pisa (Italy).
- Oct. 1993 - Dec. 1996: PhD studies in "Electronics and Computer Engineering", University of Bologna (Italy).
- Jan. 1996 - June 1996: PhD Fellowship, Brown University (RI), Department of Computer Science.
- Feb. 1997: PhD awarded, thesis on "Object-oriented Programming for Parallel and Distributed Systems".
- May 1997 - March 2001: Assistant Professor at the University of Modena and Reggio Emilia (Italy).
- April 2001- Sept. 2010: Associate Professor at the University of Modena and Reggio Emilia (Italy).

Teaching Activities and Institutional Activities

- I currently teach the courses of "Distributed Artificial Intelligence" and "Software Engineering", within the Engineering MSc degrees of my University.
- In the past, I have also taught several courses including, e.g.: "Computer Networks", "Web Technologies", "Computer Architectures", "Operating Systems".
- Deputy Rector for ICT, the University of Modena and Reggio Emilia, 2014-2019.
- Coordinator of the PhD Program on Engineering and Innovation, University of Modena and Reggio Emilia, since 2019.

Research Interests

- During my PhD, I initially focussed on the study and experimentation of adaptive algorithms for resource allocation and management in parallel and distributed systems (1992-1997), where I contributed with innovative nature-inspired distributed algorithms.
- Following, I have shifted towards distributed artificial intelligence, and specifically agent-based distributed computing (1998-2010), where I contributed defining some key models and technologies for agent coordination and methodologies for agent-oriented software engineering.
- I have pioneered the research area of self-adaptive and self-organizing software systems (2004-2015), and developed the influential concept of field-based coordination.
- More recently (2010-now), the focus of my researches has shifted towards advanced models and middleware for pervasive computing and Internet of things.

In addition, my research is also increasingly focussing on the socio-technical aspects of pervasive computing and AI systems and on their impact in society.

Publication Records

Overall, I have published so far:
- 1 research monograph in English, 1 didactic monograph in Italian, and 1 popular science book in Italian;

- 130 refereed peer-reviewed papers in international journals, and a dozen invited papers in international journals;
- 230 papers in international conferences and workshops with peer-reviewed published proceedings;
- Co-edited 2 research books, and 14 workshops/conference proceedings books.

The full list of my publications can be found at my personal UNIMORE Web page and on GScholar.

Impact of the Research

- *H-index* = 65 (Google Scholar) – more than 15000 citations overall.
- I am listed among the 25 *Top Italian Computer Scientists* for number of citations.
- I am ranked among the top 400 most prolific authors in computer science, as from DBLP.

Research Team and Research Lab

Currently, I coordinate the "Agents and Pervasive Computing" team composed (other than by myself) by 3 tenured researchers (1 of which female), 2 contract researchers (1 of which female), and 2 PhD students. Research activity takes place in a dedicated lab of my department, to experience with various pervasive computing technologies.

Tutorials, Invited Courses, and Invited Talks

Over the years, I have presented more than 10 tutorials at major IEEE/ACM Conferences, on the themes of coordination, agent-oriented software engineering, and self-organization in pervasive computing. I have been invited 8 times at international summer school for giving advanced research courses. I have been invited in the role of keynote speaker at more than 40 international conferences/workshops.

Supervised Students

- Prof. Giacomo Cabri (1999-2002), now Full Professor at the University of Modena and Reggio Emilia in Modena, co-supervised with Prof. Letizia Leonardi.
- Prof. Marco Mamei (2001-2004), now Full Professor at the University of Modena and Reggio Emilia.
- Prof. Luca Cernuzzi (2002-2006), now Full Professor at the Catholic University of Asuncion, Paraguay.
- Dr. Nicola Bicocchi (2006-2009), now Assistant Professor at the University of Modena and Reggio Emilia.
- Dr. Alberto Rosi (2007-2010), now Senior Engineer at FERRARI spa.
- Dr. Gabriella Castelli (2007-2010), now Senior Engineer at lastminute.com.
- Dr. Cynthia Villalba Cardoso (2009-2012), now Assistant Professor at the Universidad National de Paraguay.
- Dr. Laura Ferrari (2010-2013), now Engineering at ENERGEE3 spa, co-supervised with Prof. Marco Mamei.
- Dr. Damiano Fontana (2011-2015), now Senior Researcher at EPOCA RICERCA srl.
- Dr. Andrea Sassi (2013-2016), now Software Engineer at BARILLA spa.
- Roberto Vezzani (2017-), currently working on Adaptive Coordination Technologies.
- Alberto Francia (2020-), currently working on Blockchain Technologies for Agent-based Computing.
- Matteo Martinelli (2020-), currently working on Multiagent systems for IoT.

In addition, I have supervised over 60 Master Students since the beginning of my career and have participated as external examiner to a large number (>25) of PhD committees all over Europe.

Project Evaluation Activity and EU Consultancies.

I regularly act as an evaluator and as a reviewer for EU calls (FP6, FP7, H2020, ERC), and I have also often participated as a consultant to EU initiatives aimed at shaping future research initiatives.

Research Experience Abroad

- In 1995, I won a fellowship to perform a 6-months period of studies by the Brown University of Providence (Rhode Island), and have been there in Winter-Spring 1996, to perform research studies in Parallel and Distributed Systems Group under the supervision of Prof. Robert Netzer. In Spring 1997, I get back to Brown University for two more months as a visiting researcher, to complete and advanced the research studies.

- From October 1999 to March 2000 I have been visiting researcher at the University of Southampton (UK), to do researches on the theme of Agent-oriented Software Engineering in the Agents and Multimedia Group, in cooperation with Prof. Nick Jennings.

Research Grants

- 5th Framework Programme EU, Network of Excellence: "Agentlink II: a network of Excellence in Agent-based Computing", Years 2000-2003. Member of the management committee, and Chair of the "Methodologies and Software Engineering for Agent Systems" Working Group.
- Industrial Grant from Nokia Research Center Boston: "Coordination Models for Mobile Devices". Years 2001-2002. Scientific Manager of the Project. Funding: 25.000 Euro.
- Strategic Project MIUR-CNR: "Infrastructures for ad-hoc Networks in Hostile Environments (IS-MANET)". Years 2003-2005. Responsible of Local Research Unit. Funding: 93.000 Euro.
- Project Piano Telematico Regione Emilia Romagna: "Ambient Intelligence Lab for a Friendly City". Years 2005-2006. Responsible of WP5 "Middleware" and of Local Research Unit. Funding: 38.000 Euro.
- Industrial Grant from OT Group spa: "Advanced Models and Tools for Workflow Management". Years 2005-2007. Scientific Manager of the Project. Funding: 129.000 Euro.
- 6th Framework Programme EU, Integrated Project: "CASCADAS: Componentware for Autonomic and Situated Communication and Dynamically Adaptable Services". Years 2006-2008. Scientific Manager of the Project and Responsible of Local Research Unit. Funding: 268.000 Euro.
- MIUR National Research Program 2007, Project "Wiseland: Advanced Wireless Technologies for Landslide Monitoring and Risk Prevention". Years 2009-2010. Responsible of Local Research Unit and of the "Sensor Networks" WP. Funding: 41.000 Euro.
- Industrial Grant from Telecom Italia, "Autonomic Component Systems for Pervasive Service Ecosystems". Year 2009. Scientific Manager. Funding: 20.000 Euro.
- 7th FP EU, Coordination Action "PANORAMA: Pervasive Adaptation". Responsible of WP4 "Training" and of Local Research Unit. Years 2008-2010. Funding: 54.000 Euro.
- 7th FP EU, STREP Project "Safe Ways to School". Years 2009-2012. Funding: 161.500 euro.
- Industrial Project with Volkswagen Research "Mobility Patterns for Vehicle Swarms", Years 2012-2013. Principal Investigator. Funding: 36.000 Euro.
- 7th FP EU, STREP Project "Self-aware Pervasive Service Ecosystems". Years 2010-2013. Total Funding: 2.300.000 euro. Local Funding: 527.000 euro. Coordinator and Scientific Manager of the whole project.
- 7th FP EU, IP Project "Autonomous Service Component Ensembles". Local Coordinator. Years 2010-2015. Funding: 488.000 euro.
- 7th FP EU, COST Action "Towards Autonomic Road Transport Support Systems", Years 2012-2015, Member of the Management Committee.
- Regione Emilia Romagna, SPINNER project on the theme "Cooperative Mobility Services", Years 2013-2015. Funding 45.000 Euro.
- Industrial Grant from Telecom Italia, "Crowd Steering in Urban Spaces". Years 2015-2016. Scientific Manager. Funding: 60.000 Euro.
- MIUR National Cluster Project "La Città Educante", Years 2014-2017. Local Coordinator. Funding: 43.000 euro.
- H2020 Project "Connecare: Connected Care for Chronic Patients", Local Coordinator, Years 2016-2019, Funding 297.000 euro.
- PRIN 2017 National Project "Fluidware: Adaptive Flow Programming for the IoT", National Coordinator, Years 2019-2023. Funding 198.000 Euro.

Industrial Activity

I regularly providing consultancy to public administrations and private industries, within the limits allowed by my full-time professor position.

Selected Invited Presentations

- European Agent Systems Summer School (EASSS), Saarbrucken (D), August 2000, invited course on "Communication, Collaboration and Coordination".

- European Agent Systems Summer School (EASSS), Bologna (I), July 2002, invited course on "Agent-Oriented Software Engineering",
- Dagsthul Seminar on "Grand Challenges for Modeling and Simulation", Dagsthul Castle, Saar (D), August 2002, invited plenary talk on "Simulation and Agent-Oriented Software Engineering".
- 14th IEEE Workshops on Enabling Technologies, Infrastructures for Collaborative Enterprises (WETICE), Modena (I), June 2004, invited plenary talk on: "Spatial Computing and Self-Organization".
- 1st Workshops on Engineering with Complexity and Emergence at the 2nd European Conference on Complex Systems (ECCS), Paris (F), November 2005, invited talk on "Tackling the Engineering Emergence Oxymoron".
- 2nd International Conference on Self-organization and Autonomic Systems (SOAS 2005), Glasgow (UK), December 2005, invited talk on "Engineering Self-organization and Emergence: Issues and Directions".
- 5th IEEE Conference on Pervasive Computing and Communication, Pisa (I), March 2006, invited panelist on the plenary panel " "Autonomic: a Booster for Pervasive?".
- 15th EUROMICRO Conference on Parallel, Distributed and Network Processing, Napoli (I), February 2007, invited talk on "Self-organizing Services for Browsing the World: Challenges and Directions".
- EU FET Workshop on Pervasive Adaptation, Brussels (B), February 2007, invited talk on "Browsing the World in the Sensors' Continuum".
- 1st International ICST Conference on Middleware Technologies for Mobile Computing, Innsbruck (A), February 2008, invited plenary talk on "Self-organizing Middleware Solutions for the Pervasive Computing Continuum".
- 2008 ICT Conference (organized by the European Commission), Prague (CZ), November 2008, Invited talk at one of the FET Sessions to talk on the Theme "Self-awareness in Autonomic Systems".
- 2009 International DECOI School on "Design of Collective Intelligence", Leiden (NL), February 2009, invited talk on "Engineering Self-organization and Self-awareness".
- 2nd Federated Workshops on Multiagent Logic, Language, and Organizations (MALLOW), Torino (I), September 2009, invited plenary talk on "Agents and Self-organization in Pervasive Computing".
- 1st International AWARENESS Summer School, Amsterdam (NL), September 2011, invited plenary lecture on "Self-aware Pervasive Service Ecosystems".
- 1st International PERCOM Workshop on Mobility in Pervasive Computing Systems, Lugano (CH), March 2012, invited talk on "Coordinating Mobility in Smart Cities".
- 7th International Symposium on Software Engineering for Self-Managing Systems (SEAMS 2012), Zurich (CH), June 2012, invited plenary talk on "Reconciling Self-organization and Self-adaptation".
- Annual French Conference on Artificial Intelligence (PFIA), Lille (F), July 2013, invited plenary talk on "Engineering Self-organizing Systems for future Smart Cities".
- Academia Europaea, 25th Anniversary Conference, Wroclaw (PL), September 2013, Invited talk on "Engineering Urban Superorganisms.
- 2nd International SASO workshop on Foundations of Collective Intelligence, London (UK), September 2014, Invited talk on "Self-organizing Collective Behaviours in Smart Cities".
- International Conference on Principles of Multiagent Systems, Bertinoro (I), October 2015, Invited talk on "Engineering Mobility in Smart Cities".
- International Mobilware Conference, Torino (I), December 2016, invited talk on "Software Engineering for the Internet of Things".
- 19th International Conference on Coordination Models and Languages, Madrid (S), June 2018, invited talk on "Coordination in the IoT Era".
- 10th International Symposium on Information Quality in Pervasive Computing, Kyoto (J), March 2019, invited talk on "Argumentation in Smart IoT Systems".
- 12th International Conference on Distributed Computing Systems, Napoli (I), October 2019, invited talk on "Distributed Speaking Objects"
- 17th International Conference on Computer Science and Intelligent Systems (FEDCSIS), Sofia (B), September 2022, Keynote talk on "Individual and Collective Self-development"
- Platform Intelligence Artificielle (PFIA), Keynote talk on "From Smart to Autonomous: Opportunities and Challenges", St. Etienne, June 2022

Editorial Activity

- *co-Editor in Chief*: ACM Transactions on Autonomous and Adaptive Systems (February 2011-October 2017). Co-founder of the journal in 2006. Now member of the Editorial Board.

- *Editorial Boards*: The Computer Journal (BCS), since 2008; IEEE Technology and Society (IEEE), since 2018. Journal of Pervasive and Mobile Computing (Elsevier), since 2005; Multiagent and Grid Systems (IOS Press), since 2008; Journal of Agent-oriented Software Engineering (Inderscience), since 2007; Journal of Pervasive Computing and Communications (Emerald), since 2008; Journal of Pervasive and Mobile Computing (Elsevier), since 2005

Selected Organization of International Conferences

- International Workshop on Engineering Self-organizing Applications (ESOA). **Co-Founder** of the workshop series. Program co-Chair in 2003 and 2005.
- International Workshop on Engineering Societies in the Agents' World (ESAW). Co-Founder of the workshop series. Program co-Chair in 2000 and 2002, and permanent member of the Steering Committee.
- IEEE Workshops on Enabling Technologies: Infrastructures for Collaborative Enterprises (WETICE). Steering Committee from 2001 to 2007. Program Chair in 2002.
- European Workshop on Multiagent Systems (EUMAS). Program Chair in 2003.
- IEEE Conference on Intelligent Agent Technologies (IAT). Vice Program Chair in 2004
- International Workshop on Agent-oriented Software Engineering. Program Co-Chair in 2005 and 2006.
- ACM International Joint Conference on Autonomous Agents and Multiagent Systems (AAMAS). Local Organizing Co-Chair in 2002. Tutorial Chair in 2003. Workshops Chair in 2004. Member of the Senior Program Committee in 2006, 2007, and 2014.
- IEEE International Conference on Pervasive Computing and Communication (PERCOM). Technical Program Chair in 2023, Program Vice-Chair in 2006. Workshop Co-chair in 2011, Panel Chair in 2016 and 2022.
- IEEE Conference on Self-Adaptive and Self-organizing Systems (SASO). **Co-Founder**, Member of the Steering Committee and SC Chair in 2009-2010; Application Track Chair in 2007; General Co-Chair in 2008.
- International Conference on Coordination Models and Languages. Program co-Chair in 2012.
- IEEE Symposium on Ubiquitous Intelligence and Computing, General co-Chair in 2013.
- Practical Applications of Autonomous Agents and Multiagent Systems. General co-Chair in 2014.
- Dagsthul Seminar "Qualitative and Quantitative Analysis of Collective Adaptive Systems, 2014, Co-organizer.
- 2nd Workshop on Massive Multiagent Systems, 2019, co-chair.
- 1st ICDCS Workshop on Distributed Collective Intelligence (DISCOLI), 2022.
- 20th IEEE Conference on Dependable Autonomic and Secure Computing, (DASC) 2022, Vice Program Chair
- 21st IEEE Conference on Pervasive Computing and Communications, March 2023, Program Chair.

Honours and Awards

- *IEEE Fellow* – "contributions to software engineering for self-adaptive and self-organizing systems". (2014).
- *ACM Distinguished Scientist*. (2012)
- *Member of the Academia Europaea*. (2012)
- *AAIA Fellow* (2021)
- *IFAAMAS Influential Paper Award* (2019) for the paper "Developing Multiagent Systems: the Gaia Methodology, published in ACM TOSEM in 2003. *The paper was also signalled as ISI Hot Topic Paper in Computer Science May 2004*, and has received more than 1700 citations.
- *Best Paper Awards*: 3rd IEEE Symposium on Applications and the Internet (2001); 3rd Symposium From Agent theory to Agent Implementations (2004); 2nd IEEE Symposium on Swarm Intelligence (2005); IEEE WETICE Conference (2014), IEEE WETICE Conference (2021).