

CURRICULUM VITAE ET
STUDIORUM

Stefania Costantini

CURRENT POSITION

Full Professor of Computer Science (“Informatica”)

In position since 1/11/2005. Affiliation: Department of Information Engineering, Computer Science, and Mathematics (DISIM) University of L'Aquila

GENERAL INFORMATION AND
BIOGRAPHICAL NOTES

Born on 5/10/1959, Married, two children, born in 1993 and 1996.

1983: Graduated cum laude in Computer Science from the University of Pisa.

1983 – 1987: Researcher at the Software Engineering Laboratory, Italtel SIT, Milan.

1987 – 1990: External collaborator at the Department of Computer Science, University of Milan, supported by scholarships from IBM Italy and Hewlett-Packard Italy.

July 1990 – March 1999: Researcher at the Department of Computer Science, University of Milan (tenured since 3/7/1993).

April 1999 – March 2001: Researcher at the Department of Pure and Applied Mathematics, University of L'Aquila.

March 2001 – November 2005: Associate Professor at the Department of Pure and Applied Mathematics, later at the Department of Computer Science, University of L'Aquila.

Since November 2005: Full Professor at the Department of Computer Science, University of L'Aquila, now part of the Department of Information Engineering, Computer Science, and Mathematics.

Digital competences

SELF-ASSESSMENT

Information Processing	Communication	Content creation	Safety	Problem solving
Proficient user	Proficient user	Independent user	Independent user	Proficient user

[Digital competences - Self-assessment grid](#)

LANGUAGE SKILLS

Mother tongue Italian

Other languages

	UNDERSTANDING		SPEAKING		WRITING
	Listening	Reading	Spoken interaction	Spoken production	
English	C2	C2	C2	C2	C2

Proficiency in English is demonstrated through scientific publications, numerous conference presentations, seminars, and teaching activities at the Master's Degree level conducted in English.

Current Organizational Responsibilities

- Since 2021: Member of the Board of the new National Doctorate in Artificial Intelligence (Social Area).
- Since 2015: Member of the Board of the Ph.D. Program in Information Engineering and Computer Science since its inception.
- Member of the Governing Board of the Interdepartmental Research Center on Transportation and Sustainable Mobility (CITraMS), involving all 7 university departments and various national and international experts since its founding.

Previous Organizational Responsibilities

- 2018-2021: Member of the Evaluation Committee of the University of L'Aquila.
- 2016-2018: Chair of the Quality Committee for Bachelor and Master's Degree Programs, University of L'Aquila.
- 2016-2018: Member of the University Quality Assurance Committee, University of L'Aquila.
- 2013-2015: Chair of Bachelor and Master's Degree Programs in Computer Science, University of L'Aquila.
- 2013-2015: Member and, since 2014, Chair of the Joint Committee of DISIM.
- 2011-2014: Coordinator of the Ph.D. Program in Computer Science and Applications.
- 2001-2004: Coordinator of the CampusOne Project for the Computer Science Degree Program, University of L'Aquila.
- Previous roles:
 - Deputy Director of the Department of Computer Science, University of L'Aquila.

Service Activities for the Scientific Community

Scientific Associations

Until December 2024) President of GULP (Group of Researchers and Users of Logic Programming), the Italian association for computational logic, and notably the oldest Italian association active in Artificial Intelligence-related topics. I am a board member of AIxIA (Italian Association for Artificial Intelligence). I am a member of the Executive Committee of ALP (Association for Logic Programming), an association of global relevance. I am a member of ACM (Association for Computing Machinery).

Journal Reviewing	I have served as a reviewer for numerous high-impact journals, including “Theory and Practice of Logic Programming” (where I serve on the Editorial Board), “Autonomous Agents and Multi-Agent Systems”, “Data & Knowledge Engineering”, “Artificial Intelligence Review”, “Knowledge-Based Systems”, “Journal of Ambient Intelligence & Humanized Computing”, “Computer Methods and Programs in Biomedicine”, and “Frontiers in Robotics and AI”, among others central to my research areas. Many of these reviewing activities are documented on my Orcid profile and Elsevier’s “Review Hub”.
Program Committee of Conferences	I served as Co-Chair of ICLP 2023 and RuleML+RR 2017 and as Editor of related special issues in the class A journal Theory and Practice of Logic Programming, Co-Chair of ASP07 and Editor of a related special issue in the class A Journal of Logic and Computation, and Chair of GULP92. I have been and currently am a Program Committee (PC) member for over 200 international conferences, including highly-rated conferences such as IJCAI (International Joint Conference on Artificial Intelligence, ECAI (European Conference on Artificial Intelligence), AAAI Conferences on Artificial Intelligence, ICLP (International Conference on Logic Programming), KR (Knowledge Representation and Reasoning), AAMAS (Agents and Multi-Agent Systems), LPNMR (International Workshop on Logic Programming and Non-Monotonic Reasoning), RuleML (Symposium on Rule Technologies, Research, Tools, and Applications), PRIMA, AI*IA, and CLIMA (Computational Logic in Multi-Agent Systems). General Chair of PAAMS 2020, the leading international conference on Advances in Practical Applications of Agents, Multi-Agent Systems, and Trustworthiness.
Project Reviewing	I have served and currently serve as a reviewer for EU, MUR (Italian Ministry of Universities and Research), ESF, Italian and foreign Universities and Institutions, and, in 2024, for the Italian Chamber of Deputies.

RESEARCH PROJECTS: COORDINATION AND PARTICIPATION

International Projects

- Coordination (2018-2022): Vice-Coordinator of the COST Action CA17124 “DIGital FORensics: evidence Analysis via intelligent Systems and Practices”, Coordinator for L’Aquila node.
- Coordination (2005-2007): Coordinator of L’Aquila unit for the project CUSPIS (GJU/05/2412/CTR/CUSPIS), “A Cultural Heritage Space Identification System”, conducted within the 6th Framework Program under the theme “Galileo and the European Cultural Assets: a European infrastructure serving another European infrastructure”.
- Coordination (2002-2006): Coordinator of L’Aquila unit for IST-2001-37004 Working Group WASP on Answer Set Programming.
- Participation (2011-2013): SINTELNET “European Network for Social Intelligence”.
- Participation (2010-2012): COST Action IC0801 “Agreement Technologies”.
- Participation (1983-1985): Esprit Project P283 FOR-ME-TOO.

National Projects

- Principal Investigator (PI) for PNRR Project (Cascading Bands FAIR Project) CUP E13C24000430006 “Enhanced Network of Intelligent Agents for Building Livable Environments - ENABLE”.
- PI for PRIN 2022 CUP E53D23007850001 Project “TrustPACTX - Design of the Hybrid Society Humans-Autonomous Systems: Architecture, Trustworthiness, Trust, EthiCs, and EXplainability (the case of Patient Care)”.
- PI of L'Aquila unit for PRIN PNRR CUP E53D23016270001 “ADVISOR - ADaptiVe legible robotS for trustwORthy health coaching”.
- Coordination (2015-2017): University coordinator for the MISE Project on Intelligent Agents in collaboration with SPEE L'Aquila.
- Coordination (2014-2015): University coordinator for the MISE Project on Intelligent Agents in collaboration with CIRA (Italian Aerospace Research Center).
- Participation (2000-2001): PRIN Project “Aggregate- and number-reasoning for computing: from decision algorithms to constraint programming with multisets, sets, and maps”.
- Participation (1999-2000): MURST ex-40% Project “Intelligent Agents for Information Extraction”.

AWARDS

- 2023 and 2024 - Included in the Stanford University “2% World Top Scientists” list
- 2022 – Best Ordinary and Best Senior PC Member at AAMAS 2022, International Conference on Autonomous Agents and Multiagent Systems, the largest and most influential conference in the field.
- 2022 –Honorary Member of the Scientific Committee for the Year of Prolog and the Colmerauer Prize

INTERNATIONAL INVITATIONS

- University of Texas at El Paso, USA (1999), 2 weeks;
- Imperial College London, UK (2004 and 2005, 2 weeks each visit, 4 weeks total);
- Univ. Politecnica de Madrid, Spain (2010), 2 weeks;
- Corunna University, Spain (2010), 2 weeks;
- Fundacion Univ. de las Americas, Puebla, Mexico (2012), 3 weeks;
- Invited speaker at LA-NMR Workshop on Logic, Languages, Algorithms and New Methods of Reasoning (Mexico City, 2012);
- Invited Speaker at ASPOCP 2016 (Answer Set Programming and Other Computing Paradigms), New York, USA, October 16, 2016.

COLLABORATIONS

With Joint Publications and Projects

University of Perugia (Prof. Andrea Formisano); University of Messina (Prof. Pasquale De Meo); University College London UCL, UK (Prof. Alessandro Provetti, Birkbeck Institute for Data Analytics, UCL); Imperial College London, UK (Prof. Francesca Toni, Prof. Fariba Sadri); Linkoping University, Sweden (Prof. Pierangelo Dell'Acqua); Universidade Nova de Lisboa, Portugal (Prof. Luis Moniz Pereira); University of Corunna, Spain (Prof. Pedro Cabalar); Universidad Politecnica de Madrid, Spain (Prof. David Pearce).

RESEARCH ACTIVITIES

	Topics (keywords): Artificial Intelligence, Computational Logic, Neuro-Symbolic Integration, Logic Programming, Agents and Multi-Agent Systems, Knowledge Representation Methods, Automated Reasoning Methods, Meta-programming and Meta-reasoning, Ethics in Artificial Intelligence.
Ethical Principles for Intelligent Machines	This research addresses interdisciplinary principles and methods for ethically regulating the interaction between intelligent machines and humans. It includes formal techniques for implementing these ethical principles and verifying their compliance. Preliminary results use computational logic (meta-logic and modal/temporal logic) for runtime verification. Collaborative work with Giovanni De Gasperis, Abeer Dyoub, Valentina Pitoni, and Francesca Lisi (University of Bari) includes transparent machine learning methods (Inductive Logic Programming) for refining ethical rules within specific contexts. Additionally, new runtime self-checking techniques for AI agents based on temporal logics have been introduced.
Graph Analysis	Collaborating with Pasquale De Meo, Antonio Liotta, Alessandro Provetti, Giovanni Stilo, and Lucia Cavallaro, probabilistic models were developed to assess network resilience against node removal, whether intentional or accidental (e.g., isolating nodes to prevent epidemics or network failures). The approach uniquely includes probabilistic node elimination and identifies minimal node groups causing maximum damage. Efficient heuristic algorithms addressing this NP-hard problem were implemented.
Agents in Computational Logic	Agents in Computational Logic The agent-oriented logic programming language DALI, developed with Arianna Tocchio, is internationally recognized. Its logical semantics handle internal and external events effectively. DALI has been practically implemented, and its implementation is publicly available on Github. It has been experimented in applications such as user monitoring, negotiation, intelligent museum guides, security systems, and energy-efficient smart buildings, incorporating innovative runtime self-checking techniques. Extensions include cognitive robotics (robot control), Complex Event Programming, memory management, and goal reasoning (territory exploration after catastrophic events). Collaborative developments include temporal/modal logics for agent memory management and integration with paradigms like ASP and Multi-Context Systems (MCS). Many applications in the healthcare field have been recently devised.
Logic Programming, Negation, and Non-Monotonic Reasoning	Contributions to Answer Set Programming (ASP) include conditions for answer set existence and resource-based reasoning (RASP). RASP integrates resources and preferences into ASP, facilitating quantitative resource reasoning. Recent advancements (with Andrea Formisano) include Resource-Based Answer Set Semantics (RAS) and Epistemic Logic Programming (ELP), providing bounds for world views and novel query-answering methods. Collaborative work (with Formisano, Cabalar, De Gasperis, and others) has extended Multi-Context Systems (MCS) to integrate heterogeneous knowledge sources, applied notably in eHealth (wearable sensors, healthcare robotics). Extensions such as DACMACS, ACEs, and K-ACE architectures support modular agent-based frameworks, microservices architectures, and digital forensics evidence analysis.
Metalogic Programming	Research in metalogic programming focused on enriching logic languages with meta-level constructs, reflection, and reification. The metalogic language Reflective Prolog, defined with Gaetano Aurelio Lanzarone, has clearly established semantics and practical applications in areas including AI and Law, and analogical/case-based reasoning. Recent extensions (with Andrea Formisano) integrate ontological reasoning through advanced metareasoning techniques.

SUPERVISION OF PHD STUDENTS, POST-DOCTORAL FELLOWS AND JUNIOR RESEARCHERS

1990 – today, 2 Junior Researchers, 3 Postdocs, 10 PhD students. Member of Committees for PhD Awarding in Italy, Belgium, Portugal, Sweden. I have served as an external reviewer for several doctoral theses internationally.

TEACHING ACTIVITIES

Theses I have supervised over 100 Bachelor's/Master's theses.

Courses	Since 1990, I have consistently taught at least the 120 hours required annually for official teaching duties. Until academic year 2020-21, I taught the course <i>Databases</i> in the Bachelor's program in Computer Science at the University of L'Aquila. Currently, in the Master's program in Computer Science at the University of L'Aquila, I teach <i>Agent Architectures, Languages and Systems, Ontologies for Data Representation: Methods and Applications</i> , and, since 2021-22, the new course <i>Automated Reasoning</i> . I also teach thematic courses within the National Ph.D. Program in Artificial Intelligence, on Answer Set Programming and Epistemic Logic Programming.
Supplementary Courses	During 2010-2011, I delivered several editions of Database courses (Methodological and Technological modules, 12 hours each) at the Higher School of Public Administration. I regularly taught courses for prospective primary and high-school teachers, concerning the teaching of Databases and Intelligent Systems.
Seminars	I have delivered numerous invited talks, seminars, and tutorials in Italy and abroad. I have presented various orientation seminars for high school students, as well as seminars for the general public upon invitation by cultural associations, e.g., Pi Greco Day 2019-23-24-25.

PUBLICATIONS AND IMPACT

My full list of over 200 Scopus publications in English includes over 40 international journal articles, 1 international book chapter, and over 150 conference papers. My h-index is 18 according to Scopus (with more than 1360 citations), and 24 according to Google Scholar (with more than 2500 citations). I widely exceed the MIUR requirements for participation in committees awarding the National Scientific Qualification (ASN). The list of my officially published works can be found on Scopus or at the URL <https://dblp.org/pid/c/StefaniaCostantini.html>.

Note: I authorize the processing of my personal data according to the European Regulation (EU) No. 2016/679 of April 27, 2016, and Legislative Decree No. 196 of June 30, 2003.

L'Aquila, April 1, 2025