

Laura Giordano

BIO AND EDUCATION

Laura Giordano received a Ph.D. in Computer Science from the University of Torino in 1993. From November 1990 to October 1998 she was Researcher at the Dipartimento di Informatica of the University of Torino. Since October 1998 she is Associate Professor at the University of Piemonte Orientale, now at DISIT (Dipartimento di Scienze e Innovazione Tecnologica). In 2010, 2011, 2014 and 2015 she has been member of the board of the PhD Program in Computer Science of the University of Turin. From 2001 to 2012 she was member of the board of the Italian Association for Logic Programming.

UNIVERSITY CAREER

1998-2016	Associate Professor, Università del Piemonte Orientale
1990-1998	Researcher, Università di Torino

MAIN FIELDS OF INTEREST

1. Non-Monotonic Reasoning
2. Description Logics
3. Answer Set Programming (ASP)
4. Belief Revision and Reasoning About Actions
5. Multiagent systems: interaction protocols and access control
6. Proof methods for non classical logics

CURRENT ISSUES OF RESEARCH

1. Description Logics and Non Monotonic Reasoning

This activity has been part of the projects: INDAM - GNCS 2015 "Description Logics and Non Monotonic Reasoning" e INDAM - GNCS 2016 "Defeasible Reasoning in Description Logics" and of the project PRIN 2008 : "Nonmonotonic Description Logics: Complexity and implementations (LoDeN)". Preferential description logics have been developed, defining a notion of typicality, to model prototypical properties of concepts in an OWL ontology and to capture inheritance with exceptions. Proof methods have been developed through tableaux as well as through the Rational Closure construction, exploiting encoding of the preferential DLs into standard DLs.

2. Model checking in ASP

A temporal extension of ASP has been defined for reasoning in action theories with complex actions and infinite computations. Bounded Model Checking techniques have been developed in ASP for the verification of temporal properties of actions domains.

3. Business processes compliance verification

This activity was part of the project of the Regione Piemonte "ICT4LAW: ICT Converging on Law: Next Generation Services for Citizens, Enterprises, Public Administration and Policymakers" (2009-2013). The problem of compliance of business processes to norms has been addressed using ASP with constraints to model data aware processes and data abstraction in process verification. Different kinds of obligations have been considered, useful in the verification of compliance to normative requirements.

4. Clinical Guidelines verification

Model checking techniques have been used in the verification of clinical guidelines and, in particular, of clinical guidelines in GLARE. Recently, an approach based on Answer Set Programming has been proposed for the verification of clinical guidelines when basic medical knowledge also includes terminological knowledge, represented by medical ontologies.

CURRENT FUNDED PROJECTS

BANDO	TITOLO DEL PROGETTO
INDAM - GNCS 2016	Defeasible Reasoning in Description Logics

TOP FIVE PAPERS

1. L. Giordano, V. Gliozzi, N. Olivetti, and G. L. Pozzato. Semantic characterization of rational closure: From propositional logic to description logics. *Artif. Intell.*, 226:1–33, 2015. Elsevier, Amsterdam.
2. Laura Giordano, Alberto Martelli, Matteo Spiotta, and Daniele Theseider Dupré. Business process verification with constraint temporal answer set programming. *Theory and Practice of Logic Programming, TPLP*, 13(4-5):641–655, 2013. Cambridge University Press.
3. Laura Giordano, Valentina Gliozzi, Nicola Olivetti, and Gian Luca Pozzato. A NonMonotonic Description Logic for Reasoning About Typicality. *Artificial Intelligence*, 195:165 – 202, 2013. Elsevier Science, Amsterdam.
4. L. Giordano, A. Martelli, and C. Schwind. Specifying and verifying interaction protocols in a temporal action logic. *Journal of Applied Logic*, 5(2):214–234, 2007. Elsevier Science, Amsterdam.
5. L. Giordano, V. Gliozzi, and N. Olivetti. Weak AGM postulates and Strong Ramsey test: a logical formalization. *Artificial Intelligence*, 168:1–37, 2005. Elsevier Science, Amsterdam.