*Fundamenta Informaticae 181 (2021) v–vi*
*DOI 10.3233/FI-2021-2048*
*IOS Press*



# Special Issue on the 34th Italian Conference on Computational Logic: CILC 2019

## Preface

The Italian Conference on Computational Logic –CILC– is the annual conference organized by GULP (Group of researchers and Users of Logic Programming). Since the first event of the series, which took place in Genoa in 1986, the annual GULP conference represents the main opportunity for Italian users, researchers and developers working in the field of computational logic to meet and exchange ideas. Over the years the conference broadened its horizons from the specific field of logic programming to include declarative programming and applications in neighboring areas such as artificial intelligence and deductive databases. This special issue contains revised and extended versions of papers presented at the 34th Italian Conference on Computational Logic –CILC 2019– which was hosted by the University of Trieste, Italy, from June 19 to June 21, 2019.

The authors of selected papers were invited to submit an improved, extended version to this special issue of Fundamenta Informaticae. Those papers went through a careful review by qualified international referees. The three papers in the special issue witness the multifaceted nature of CILC, covering important topics in formal verification, automated theorem proving, and knowledge representation.

- Jane Hillston, Andrea Marin, Carla Piazza, and Sabina Rossi. *Persistent Stochastic Non-Interference*. This paper introduces the notion of Persistent Stochastic Non-Interference (PSNI) as a quantitative extension of the Non-Interference property for systems specified in PEPA. Two characterizations of PSNI are presented: one based on a bisimulation-like equivalence relation and another one based on unwinding conditions. Their combination leads to efficient methods for the verification and construction of secure systems.

- Domenico Cantone, Andrea De Domenico, Pietro Maugeri, and Eugenio G. Omodeo. *Complexity assessments for decidable fragments of Set Theory. I: A taxonomy for the Boolean case*. This paper identifies small fragments of set theory which have polynomial-time satisfiability decision tests and may be useful in automated proof verification. The authors provide a complete taxonomy of both polynomial and NP-complete fragments involving the Boolean operators $\cap$, $\cup$, and $\setminus$, the relations $\subseteq$, $\not\subseteq$, $=$, and $\neq$, and the predicates "*is an empty set*", "*is not an empty set*", "*the two sets are disjoint*", and "*the two sets are not disjoint*".

- Stefania Costantini and Andrea Formisano. *Adding Metalogic Features to Knowledge Representation Languages*. This work presents a methodology for introducing customizable metalogic features in logic-based knowledge representation and reasoning languages. The authors propose general principles for extending the semantics of "host" formalisms and accommodate the proposed methodology to the specific cases of Answer Set Programming (ASP) and Datalog$^{\pm}$.

We would like to thank the Editorial Office of Fundamenta Informaticae, and in particular the Editor-in-Chief Damian Niwiński. Finally, we thank the authors of the papers and the reviewers for their invaluable work.

March 2021

Editors of the Special Issue

Alberto Casagrande,
Dipartimento di Matematica e Geoscienze,
Università degli Studi di Trieste,
Trieste, Italy.
*acasagrande@units.it*

Eugenio G. Omodeo,
Dipartimento di Matematica e Geoscienze,
Università degli Studi di Trieste,
Trieste, Italy.
*eomodeo@units.it*

Maurizio Proietti,
Istituto di Analisi dei Sistemi ed Informatica "A. Ruberti",
Consiglio Nazionale delle Ricerche,
Roma, Italy.
*maurizio.proietti@iasi.cnr.it*