Proceedings of the 37th Italian Conference on Computational Logic (CILC 2022)

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The Italian conference on Computational Logic[1] (Convegno Italiano di Logica Computazionale, CILC) is the annual conference organised by the Italian group of researchers and users of logic programming[2] (Gruppo ricercatori e Utenti Logic Programming, GULP). Since the first event of the series, which was held in Genoa in 1986, the annual conference organised by GULP has been representing a major opportunity for researchers and practitioners working in the field of Computational Logic to meet and exchange ideas. The conference has broadened its horizons over the years, and today embraces topics that extend its reach beyond Computational Logic, such as declarative programming, knowledge representation, automated theorem proving, and virtually all applications of Computational Logic in the broader field of Artificial Intelligence.

The series of conferences organised by GULP has always been relevant to the GULP community, and Italian researchers and practitioners consider it as an indispensable tradition of the community. The 37th edition of the conference marks the attempt to return to normality after the COVID-19 pandemic and the consequent global health crisis. The conference was organised as a regular pre-pandemic event from June 29th, 2022 to July 1st, 2022 in Bologna, and it was attended in person by 45 participants. Other 15 participants joined the conference remotely by using a dedicated virtual meeting space, which was used to stream and record the presentations of accepted papers.

The community delivered a solid response to the urge for normality that characterised the days of the event. The 37th edition of the conference featured 29 presentations of high-quality papers, 22 of which were original works. Accepted contributions ranged from foundational and theoretical results to practical experiences, case studies, and applications, and they covered a wide range of relevant topics broadly related to Computational Logic. Accepted contributions included papers on agents and multi-agent systems, (constraint) logic programming, argumentation, and practical applications of logic programming. It is worth noting that accepted papers went through a strict evaluation process. Each original submission was evaluated by at least three anonymous reviewers from the Program Committee to ensure that the quality of papers

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[1]http://cilc2022.apice.unibo.it
[2]http://www.programmazionelogica.it

met the high-quality standards of the conference. Each non-original submission was reviewed by at least one anonymous reviewer from the Program Committee to check for coherence with the aims and scope of the conference. Note that, following the tradition of the conference, non-original submissions are not included in this proceedings.

The keynote speech was delivered by Manuel Hermenegildo, from the University Politecnica de Madrid, an international expert on Computational Logic. The keynote speech, titled "Prolog at 50", was a way for celebrating Prolog's 50th anniversary. After all these years, Prolog and Logic Programming are still relevant to higher-level programming and symbolic, explainable AI, with various implementations that keep on evolving, and new ones appearing. In this talk he provided an overview of the evolution of Prolog over these years since the original Marseille and Edinburgh versions, the current status of the language and its implementations, and some reflections on challenges and opportunities for the future. He also addressed some related issues such as the best ways of teaching Prolog and Logic Programming in general, applying Logic Programming technology to other languages, or the relation to other (logic and non-logic) programming languages.

The conference was enriched with a Technological Contest with the twofold purpose of *(i)* increasing the visibility of novel logic-based technologies with the logic programming community, and *(ii)* drawing a picture of the current state of the art of logic based technologies. There, 10 software contributions were presented.

Finally, a Special Session in honour of the former GULP President Gianfranco Rossi was successfully organised (mostly by Agostino Dovier), which brought back some good people and sweet memories from GULP past.

In conclusion, we would like to warmly thank all the people who contributed to CILC 2022. First, we would like to thank all the authors of the submitted papers, the invited speaker, the members of the Program Committee, and the anonymous reviewers. We are also grateful to the President of GULP, Stefania Costantini, and to all the members of the GULP Board, for their support and their fruitful suggestions. Finally, special thanks are due to all the attendees that joined the conference either in person or remotely for turning CILC 2022 into an occasion for lively discussions on relevant research topics and research challenges.

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