28th International Symposium on Temporal Representation and Reasoning

TIME 2021, September 27–29, 2021, Klagenfurt, Austria (Virtual Conference)

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Preface

The 28th International Symposium on Temporal Representation and Reasoning (TIME 2021) was planned to take place in Klagenfurt, Austria, but had to move to an online conference due to the insecurities and restrictions caused by the pandemic. Since its first edition in 1994, TIME Symposium is quite unique in the panorama of the scientific conferences as its main goal is to bring together researchers from distinct research areas involving the management and representation of temporal data as well as the reasoning about temporal aspects of information. Moreover, TIME Symposium aims to bridge theoretical and applied research, as well as to serve as an interdisciplinary forum for exchange among researchers from the areas of artificial intelligence, database management, logic and verification, and beyond.

Besides the three traditional tracks on

- Time in Artificial Intelligence
- Temporal Databases
- Temporal Logic and Reasoning

this year featured two additional special tracks on

- Temporal representation and reasoning for COVID-19
- Temporal explainability: connecting symbolic and sub-symbolic temporalities

Indeed, such a strange and long period of COVID-19 pandemic pushed for strong research efforts in some previously unexplored direction, namely the temporal issues in any context having to manage Covid-19 pandemic (healthcare, medicine, social contexts, school, and so on). On the other side, the need of explaining the results coming from sub-symbolic AI approaches is becoming more and more challenging and widespread. Thus, it is important to push for research dealing with some kind of temporal logics/system/rules/visualization for interpreting/explaining the results of machine learning algorithms considering temporally relevant problems.

The 2021 TIME edition, received a total of 28 paper submissions representing a wide range of research topics in the areas of artificial intelligence, databases, and theoretical computer science, some of them explicitly focusing on the topics of the two special tracks. Submissions came from Europe, North America, Africa, and Asia. We would like to thank all the authors of the submitted papers, as they have helped to build a successful TIME 2021 symposium.

As a result of the review process coordinated by the PC chairs, 13 papers were selected for full presentation at the symposium. The range of the considered topics is very wide – without trying to mention each specific topic, they run from temporal logics to temporal plans, to data models and query languages for new kinds of temporal data.

Most papers received 3 or more reviews, and each paper received at least two detailed reviews. All papers were discussed intensively by the program committee.

Besides having such a high number of high-quality reviews, the PC members and the program chairs have been involved in a deep additional discussion on many papers, to reach a final sound decision about rejection and acceptance.

We are pleased to include invited talks by leading scholars in our scientific communities: Torben Bach Pedersen (Aalborg University, Denmark), Johan Suykens (KU Leuven, Belgium), Roberto Posenato (University of Verona, Italy) and Luke Hunsberger (Vassar College, USA).

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Finally, the program is completed by a panel coordinated by Alfredo Cuzzocrea, where experts in the field will share share their views and discuss research achievements and open challenges of Temporal Big Data Management.

We hope that the set of selected papers, their presentations, the invited talks, and the panel will help to stimulate and improve several research efforts in the area of temporal representation and reasoning.

The COVID-19 pandemic has created uncertainty and difficulties for people throughout the world. As we acknowledge the consequent concerns about health and safety, after having closely monitored the evolution of the pandemic, we decided to organize TIME 2021 completely on-line, as the evolution, still fast changing, unstable and different in different countries, did not allow a successful organization of an in-presence event.

We would like to thank here all the members of the Program Committee and the additional reviewers, who spent their time and volunteered their expertise to set up the final program. We want also to thank Marco Franceschetti, for his efforts in organizing a successful symposium.

Finally, we would like to acknowledge the generous support of the following institutions: Department of Informatics-Systems of the Alpen-Adria Universität Klagenfurt, Austria, and Department of Computer Science of the University of Verona, Italy. The open access publication of these proceedings was supported by the Alpen-Adria-Universität Klagenfurt, Austria.

Even though an in-presence symposium would be the ideal way of sharing ideas, discussing and strengthening possible collaborations to advance our community, we are sure that the on-line event increased the outreach to make the current and next TIME editions even more attracting and with a long-lasting research impact.

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