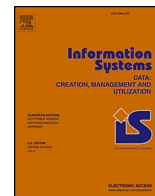




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## Editorial

### Temporal representation and reasoning in data-intensive systems



We are pleased to present the papers accepted to the special issue on “Temporal Representation and Reasoning in data-intensive systems”. The idea for this special issue stemmed from the organisation of the 2022 edition of the “Temporal Representation and Reasoning” (TIME) symposium. We welcomed submissions concerning the three key areas of the TIME symposium, i.e., Time in Artificial Intelligence, Temporal Databases, and Temporal Logic and Reasoning, provided that they addressed issues of data at scale.

We received five submissions which underwent a rigorous evaluation process and accepted two of them. The first article, "Reinforcement Learning with Time Intervals for Temporal Knowledge Graph Reasoning", by Liu et al., focuses on time-aware, multi-hop reasoning in temporal knowledge graphs. Liu et al. propose a method for representing temporal intervals using median and embedding changes of two time-stamps. The proposed method is evaluated on four public temporal knowledge graphs for the link prediction task, and the experimental results indicate, among others, that the approach can find more interpretable paths than competing techniques, and improves reasoning in sparse spaces.

The second article, "Paraconsistent Reasoning for Inconsistency Measurement in Declarative Process Specifications", by Corea et al., addresses the problem of measuring inconsistency in declarative process specifications, with an emphasis on Linear Temporal Logic (LTL). Corea et al. put forward a novel paraconsistent semantics for LTL as a framework for time-sensitive inconsistency measurement. Furthermore, they developed and implemented open-source approaches for (element-based) inconsistency measurement in LTL, and evaluated their results with datasets from the Business Process Intelligence challenge.

We would like to thank the editors-in-chief for giving us the opportunity to prepare this special issue, the authors for their submissions, and the reviewers for their help in evaluating them. We hope that you will find it interesting and enjoyable to read.

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