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# Conceptual Modeling

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# Preface

ER 2021 is the premiere international conference on conceptual modeling, its foundations and applications. Conceptual models are essential for the development of software and the appropriate structuring of data. They promote reuse, integration, and integrity. Furthermore, conceptual models are also suitable for supporting the use of software. They help to open the black box, as to which software often presents itself, and thus contribute to transparency and user empowerment.

This year, ER celebrates its 40th instance as a conference. The first ER conference was held in 1979 in Los Angeles, then held every two years until 1985, when the conference became an annual event. Thus, we celebrate 42 years and 40 events dedicated to the science, methods, and practice of conceptual modeling. During its 40 instances, the conference has been held in 18 countries on five continents. We are proud to be a part of and continue to enable such an international scientific community.

The overall theme of ER 2021 is conceptual modeling in an age of uncertainty. Conceptual modeling has never been more important in this age of uncertainty. As individuals, organizations, and nations face new and unexpected challenges, software and data must be developed that can cope with and help address this new uncertainty in an ever-faster changing world. Conceptual modeling can be used to describe, understand and cope with increasing levels of uncertainty in our world.

ER 2021 was held in the beautiful and vibrant city of St. John's, Canada, as well as virtually from around the world. This is the third time that ER has been hosted in a Canadian city, with the first time being hosted in the Maritime provinces of Canada.

Despite the continued COVID-19 situation, the conference timelines were upheld as expected, with standard submissions, reviews, and notification periods. The review process was successful, with most reviews received on time, despite the added pressures of virtual science and education. This is the second time ER was organized with a virtual option, with ER 2020 being the first virtual event, and all previous ER conferences being held in person. We express our gratitude to the organizers of ER 2020 for paving the way for the virtual ER conference experience. Particularly, we have the challenge of finding a schedule that would accommodate the many time zones in which the participants would be located at during the conference. Our hybrid solution was adopted from the ER 2020 program.

In terms of paper submissions, we received 95 abstracts, 85 final submissions, and desk rejected 6 submissions. Each paper was reviewed by three Program Committee (PC) members, and the paper discussions were moderated by senior PC members. We were able to accept 14 high-quality full papers. We also accepted 18 short papers, all of which were submitted as camera-ready files and appeared in the conference as well as the proceedings. Looking at the full papers only, this renders an acceptance rate of 16.5%, lower than in previous conference instances.

This year brings some unprecedented situations. It is the first year where submitting authors are aware of the virtual or hybrid nature of the conference, and where we

continued to deal with greatly restricted travel. Although COVID-19 cases in St. John's are low, the international nature of the conference makes it challenging for many to travel to. With virtual conferences becoming the norm, many attendees sadly lack many in-person networking opportunities, or the chance to visit a beautiful new location. As such, the submission rate for ER 2021 was lower than in past years, but the acceptance rate was also lower, keeping the quality of the papers high. We also see a slightly more than normal number of accepted short papers, with the submission of many great ideas and evaluations which were not quite ready to be accepted in their full form. In order to maintain and increase paper quality, this year, a small number of selected papers were conditionally accepted as full papers, allowing the PC Chairs to check that the authors satisfied certain conditions set out by the paper reviewers and moderators. This allowed us to ensure both that the papers were of high final quality and that the conference included many interesting presentations of ongoing work in conceptual modeling. The accepted papers cover a broad spectrum of innovative topics, including business process modeling, goals and requirements, modeling IOT, social aspects of conceptual modeling, enterprise modeling, ontologies, and data modeling. This wide range of topics underlines the importance and attractiveness of research on conceptual modeling. We hope that the papers will be of interest to you and wish you an inspiring read.

Finally, we would like to thank the authors, whose contributions made the conference possible, the many reviewers for their outstanding commitment in preparing more than 200 expert opinions, and last, but not least, the senior PC members without whose support we would not have been able to handle the evaluation of the expert opinions.

The resilience of the international scientific community remains as impressive as ever. The scientific endeavor continues apace, despite the significant challenges posed by the pandemic.

September 2021

Aditya Ghose
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