



Proceedings of the 39th International Symposium on Automation and Robotics in Construction

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Foreword

The International Association for Automation and Robotics in Construction (IAARC) and the 39th ISARC organizing committee are pleased to present the Proceedings of the 39th International Symposium on Automation and Robotics in Construction held, in a hybrid mode, on July 13-15, 2022, at Universidad de los Andes, Bogotá, Colombia. The 39th ISARC was proudly hosted by the Department of Civil and Environmental Engineering at Universidad de los Andes. The 2022 ISARC has been the first-ever ISARC in Latin America and it was organized in collaboration with Pontificia Universidad Católica de Chile and Tecnológico de Monterrey. It also received the support of the Purdue Polytechnic Institute and Georgia Institute of Technology. A total of 89 papers from 291 authors/co-authors representing 111 universities, labs, and companies in 26 countries were selected after a rigorous peer-review process that was possible thanks to the great support from the Area Chairs.

In the last 4-5 years, the growing need and interest in construction robotics have become highly evident worldwide. Start-ups, spin-offs, and investors have introduced more than 200 robot systems into the market. This is backed up by an enormous number of activities and projects carried out in the academic area pushing the boundaries of what is technologically possible.

Competency in digital construction, automation and robotics has become a key element for all stakeholders in the construction sector, and many universities worldwide have launched dedicated interdisciplinary programs. Governments and major funding programs such as Horizon Europe massively request and fund the development of robotic solutions for construction, such as drones, mobile robots, 3D-printing solutions, cable-driven robots, and exoskeletons. Regulators and standardization organizations started to develop the first certification and standardization schemes for construction robots, and large software companies attempt to simulate and program robotic construction processes efficiently based on digital building and construction data.

ISARC continues to be the premier global conference in the domain of automation and robotics in construction. To prepare ISARC for the future, further attempts were made this year to restructure IAARC's framework, and the topic of "Applications in Developing Countries" was added as a new submission domain. The technical areas summarize the paper topic areas of interest, representing all the research themes relevant to ISARC/IAARC. This is an important mechanism for the technical committee to consolidate the knowledge accumulated from each year's conference while allowing for the smooth incorporation of new research topics and trends in the community

We hope you find the papers interesting and inspirational. Enjoy the readings!

Thomas Linner
Borja García de Soto
Rongbo Hu
Ioannis Brilakis

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