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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
# Table of Contents

## K - Keynote talks

<table>
<thead>
<tr>
<th>Title</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>A framework for a comprehensive mobile data acquisition setting for the assessment of Urban Heat Island phenomenon</td>
<td>1</td>
</tr>
<tr>
<td>Using BIM and LCA to evaluate material circularity: Contributions to building design improvement</td>
<td>9</td>
</tr>
<tr>
<td>Building Information Model Pre-Processing for Automated Geometric Quality Control</td>
<td>17</td>
</tr>
</tbody>
</table>

## P - Plenary talks

<table>
<thead>
<tr>
<th>Title</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Insights into automation of construction process using parallel-kinematic manipulators</td>
<td>25</td>
</tr>
<tr>
<td>Predictive Maintenance Optimization Framework for Pavement Management</td>
<td>33</td>
</tr>
<tr>
<td>Weakly supervised pseudo label generation for construction vehicle segmentation</td>
<td>41</td>
</tr>
<tr>
<td>Teaching Construction Robotics for Higher Education Students: “Imagine and Make”</td>
<td>47</td>
</tr>
<tr>
<td>Integrating VR and Simulation for Enhanced Planning of Asphalt Compaction</td>
<td>55</td>
</tr>
<tr>
<td>Direction of Arrival of Equipment Sound in the Construction Industry</td>
<td>63</td>
</tr>
</tbody>
</table>
A - Sensing systems & data infrastructures

Towards BIM-based robot localization: a real-world case study
Huan Yin, Jia Min Liew, Wai Leong Lee, Marcelo H Ang Jr and Justin Ker-Wei Yeoh

Current State and Future Opportunities of Data Mining for Construction 4.0
Keyi Wu and Borja García de Soto

The Use of Boston Dynamics SPOT in Support of LiDAR Scanning on Active Construction Sites
Eric Wetzel, Junshan Liu, Tom Leathem and Anoop Sattineni

Autonomous operation of a robot dog for point cloud data acquisition of scaffolds
Duho Chung, Sunwoong Paik, Juhyeon Kim and Hyungkwan Kim

Cluster-based Deterioration Prediction of Composite Pavements with Incorporation of Flooding
Ishan Neema, Fatemeh Banani Ardecani and Omidreza Shoghli

Predicting construction productivity with machine learning approaches
Laura Florez-Perez, Zhiyuan Song and Jean C. Cortissoz

Automated Checking of Scaffold Safety Regulations using Multi-Class 3D Segmentation
Jeehoon Kim, Juhyeon Kim, Nahye Koo and Hyungkwan Kim

A Systematic Classification and Evaluation of Automated Progress Monitoring Technologies in Construction
Varun Kumar Reja, Megha S Pradeep and Koshy Varghese

Reducing spatial error in mobile laser scanning by real-time uncertainty visualization and human-machine interaction
Maciej Trzeciak, Chris Burgoyne and Ioannis Brilakis

Toward Automation in Crack Detection and Measurements: Benchmarking of CNN-based Algorithms
Donghoon Ji, Yelda Turkan and Paolo Calvi

B - Sensing systems & data infrastructures

Innovative Model for Forecasting Trailer Usage for Prefabricated Exterior Wall Panels
Andrew Rener, Aslihan Karatas and Matthew Cole

Automated Wall Detection in 2D CAD Drawings to Create Digital 3D Models
Chialing Wei, Mohit Gupta and Thomas Czerniawski

IFC-based Information Extraction and Analysis of HVAC Objects to Support Building Energy Modeling
Hang Li and Jiansong Zhang

Systematic Literature Review of Building Information Modelling and Green Building Certification Systems
Oludolapo Olanrewaju, Wallace Enegbuma and Michael Donn

Information Extraction from Text Documents for the Semantic Enrichment of Building Information Models of Bridges
Phillip Schönfelder, Tariq Al-Wesabi, Andreas Bach and Markus König

BIM-Integration of Light Construction Equipment
Maximilian Schöberl, Sebastian Offinger, Theo Goldfuß, Stephan Kessler and Johannes Fottner
<table>
<thead>
<tr>
<th>Title</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Visualisation and graph-based storage of customised changes in early design phases...</td>
<td>191</td>
</tr>
<tr>
<td>Daniel Napps, Ata Zahedi, Markus König and Frank Petzold</td>
<td></td>
</tr>
<tr>
<td>Conceptual Modeling of Lifecycle Digital Twin Architecture for Bridges: A Data Structure Approach</td>
<td>199</td>
</tr>
<tr>
<td>Inga Maria Giorgadze, Faridaddin Vahdatikhaki and Hans Voordijk</td>
<td></td>
</tr>
<tr>
<td>Towards the development of a digital twin for subsoil monitoring and stability against overturning of a mobile drilling rig</td>
<td>207</td>
</tr>
<tr>
<td>Francisco Williams Riquer, Duy Anh Dao and Jürgen Grabe</td>
<td></td>
</tr>
<tr>
<td>Closing the Gap Between Concrete Maturity Monitoring and Nonlinear Time-dependent FEM Analysis through a Digital Twin. Case Study: Post-tensioned Concrete Slab of an Office Building, Barcelona, Spain</td>
<td>215</td>
</tr>
<tr>
<td>Héctor Posada, Rolando Chacón, Lucian-Constantin Ungureanu, David García</td>
<td></td>
</tr>
<tr>
<td>ColombiaClass: proposal for a BIM Classification System for public buildings in Colombia</td>
<td>223</td>
</tr>
<tr>
<td>María Del Pilar Revuelta Mendoza, Nelly Paola Garcia Lopez and Luis Arturo Salazar Fica</td>
<td></td>
</tr>
<tr>
<td>Towards Automated Pipelines for Processing Load Test Data on a HS Railway Bridge in Spain using a Digital Twin</td>
<td>231</td>
</tr>
<tr>
<td>Carlos Ramonell and Rolando Chacón</td>
<td></td>
</tr>
<tr>
<td>Potentials of 5D BIM with Blockchain-enabled Smart Contracts for Expediting Cash Flow in Construction Projects</td>
<td>238</td>
</tr>
<tr>
<td>Jong Han Yoon and Pardis Pishdad-Bozorgi</td>
<td></td>
</tr>
<tr>
<td>Integrating Digital Twins in Construction Education Through Hands-on Experiential Learning</td>
<td>246</td>
</tr>
<tr>
<td>Steven Kangisser, Javier Irrazary, Kelly Watt, Richard Borger and Amadeus Burger</td>
<td></td>
</tr>
<tr>
<td>Benefits of Open Infra BIM – Finland Experience</td>
<td>253</td>
</tr>
<tr>
<td>Rauno Heikkilä, Tanja Kolli and Teppo Rauhala</td>
<td></td>
</tr>
</tbody>
</table>

**C - Human factors & human-system collaboration**

<table>
<thead>
<tr>
<th>Title</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>The Neural Basis of Risk Attitude in Decision-Making Under Risk: fNIRS investigation of the Simulated Electrical Construction Task</td>
<td>261</td>
</tr>
<tr>
<td>Shiva Pooladvand, Deha Ay and Sogand Hasanzadeh</td>
<td></td>
</tr>
<tr>
<td>Toward Personalized Safety Training: Automating the Classification of Construction Workers’ Cognitive Failures</td>
<td>268</td>
</tr>
<tr>
<td>Kyeongsuk Lee, Yugandhar Shinde, Sogand Hasanzadeh and Behzad Esmaili</td>
<td></td>
</tr>
<tr>
<td>iVisit-Collaborate: Online Multiuser Virtual Site Visits Using 360-Degree Panoramas and Virtual Humans</td>
<td>276</td>
</tr>
<tr>
<td>Ricardo Eiris and Masoud Gheisari</td>
<td></td>
</tr>
<tr>
<td>Vulnerability Assessment of Construction Equipment: An Example for an Autonomous Site Monitoring System</td>
<td>283</td>
</tr>
<tr>
<td>Muammer Semih Sonkor, Xinghui Xu, Samuel A. Prieto and Borja Garcia de Soto</td>
<td></td>
</tr>
<tr>
<td>Fire Evacuation and Management Model Based on Building Information Modeling and Virtual Reality</td>
<td>291</td>
</tr>
<tr>
<td>Ren-Jie Gao, Kun-Chi Wang, Xiang-Hao Lai and Wei-Hsiang Hung</td>
<td></td>
</tr>
<tr>
<td>Evaluation of Construction Site Layout Using Virtual Reality Linked with 3D CAD and Body Tracking</td>
<td>297</td>
</tr>
<tr>
<td>Hidetoshi Tsuda and Kosei Ishida</td>
<td></td>
</tr>
</tbody>
</table>
Automated Recognition of Hand Gestures for Crane Rigging using Data Gloves in Virtual Reality
Aparna Harichandran and Jochen Teizer

A Knowledge Graph for Automated Construction Workers' Safety Violation Identification
Yifan Zhu and Xiaowei Luo

Wearable Technology for Highway Maintenance and Operation Safety: A Survey of Workers’ Perception and Preferences
Sepehr Sabeti, Omidreza Shoghli, Nichole Morris and Hamed Tabkhi

Integrated Sensor-Based Interface for Human-Robot Collaboration in Construction
Xin Wang, Dharmaraj Veeramani and Zhenhua Zhu

D - Robotic machines, devices, and end-effectors

Requirements analysis of additive manufacturing for concrete printing – A systematic review
Patricia Peralta Abadia and Kay Smarsly

Safety Risk Assessment of Drones on Construction Sites using 4D Simulation
Zixian Zhu, Idris Jeelani and Masoud Gheisari

Progress Estimation of an Excavation Pit
Axel Vierling, Tobias Groll, Dennis Meckel, Kristina Heim, Daniel Walter, Lukas Scheidhauer, Karsten Körkemeyer and Karsten Berns

Ali Golabchi, Linda Miller, Hossein Rouhani and Mahdi Tavakoli

Stag hunt game-based approach for cooperative UAVs
Lanh Van Nguyen, Ignacio Torres Herrera, Trung Hoang Le, Duong Manh Phung, Ricardo Patricio Agullera and Quang Phuc Ha

Reinforcement learning with construction robots: A review of research areas, challenges and opportunities
Xinghui Xu and Borja García de Soto

Constrained Control Scheme for the Manipulation of Heavy Pre-fabricated Elements with Lightweight Robotic Arm
Michele Ambrosino, Fabian Boucher, Pierre Mengeot and Emanuele Garone

Importance of a 5G Network for Construction Sites: Limitation of WLAN in 3D Sensing Applications
Hyung Joo Lee, Ajith Krishnan, Sigrid Brell-Cokcan, Janina Knußmann, Maximilian Brochhaus, Robert H. Schmitt, Johannes J. Emontsbotz and Johannes Sieger

Path Generation for Foam Additive Manufacturing of Large Parts with a Cable-Driven Parallel Robot
Elodie Paquet, Marceau Metillon, Kevin Subrin, Benoit Furet and Stéphane Caro

Automated material selection based on detected construction progress
Tyler Stephens, Austin McClymonds, Robert Leicht and Alan Wagner

Solution Kits for automated and robotic façade upgrading
Kepa Iurralde, Thomas Bock, Philip Zimmermann, Renzo G. Bazan Santos, Samantit Das, Wenlan Shen, Mahruk Malik, Steven Maio, Agi Hidri and Juncheng Shen
Concept of a Robot Assisted On-Site Deconstruction Approach for Reusing Concrete Walls
Hyung Joo Lee, Christoph Heuer and Sigrid Brell-Cokcan

Subjective Evaluation of Passive Back-Support Wearable Robot for Simulated Rebar Work
Nihar Gonsalves, Mohamad Khalid, Abiola Akinniyi, Omobolaji Ogunseiju and Abiola Akanmu

Industry Perspectives of the Potential of Wearable Robot for Pipe Installation Work
Nihar Gonsalves, Mohamad Khalid, Abiola Akinniyi and Abiola Akanmu

Development of Framework for Highway Lawn Condition Monitoring using UAV Images
Yeseul Kim, Seongyong Kim, Yosuke Yajima, Javier Irizary and Yong K. Cho

E - Construction management techniques

YAKE-Guided LDA approach for automatic classification of construction safety reports
Hrishikesh Gadekar and Nikhil Bugalia

Automated Construction Contract Summarization Using Natural Language Processing and Deep Learning
Xiaorui Xue, Yiru Hou and Jiansong Zhang

Construction Progress Monitoring and Reporting using Digital Images and Computer Vision Techniques – A Review
Dena Shamsollahi, Osama Moselhi and Khashayar Khorasani

BIM, Twin and Between: a Conceptual Engineering Approach to Formalize Digital Twins in Construction
Fabiano Correa

Inspection Data Exchange and Visualization for Building Maintenance using AR-enabled BIM
Jisoo Park, Soowon Chang, Hyungi Lee and Yong Cho

F - Services and business applications / Industry papers

Comparison of TLS and Photogrammetric 3D Data Acquisition Techniques:
Considerations for Developing Countries
Eyob Mengiste, Samuel A. Prieto and Borja Garcia de Soto

Mud Dauber: Prototype of the Mobile Gantry Architecture
Peter Startz, Josiah McClurg, Caleb Miller, Moriah Schlenker and Shane Wozniak

A model driven method for crack detection in robotic inspection
Erika Pellegrino and Tania Stathaki

A Case Study: Conception of digitalizing prefabrication processes in the construction industry
Zhen Cai, Mohamed Ben Tarfaoui, Stephan Kessler and Johannes Fottner

On the Bar Installation Order for the Automated Fabrication of Rebar Cages
Mahdi Momeni, Johan Relefors, Lars Pettersson, Alessandro Vittorio Papadopoulos and Thomas Nolte

A Taxonomy for Connected Autonomous Plant
Cormac Browne, Ross Walker, Tim Embley, Muneeb Akhtar, Amer Essa, Anette Pass, Simon Smith and Alex Wright
### Digital Commissioning Processes for the Oil and Gas Sector
Daniel Luiz de Mattos Nascimento, Alessandra Brancher Roeder, Diego Calvetti, Alexander Chavez Lopez, Fernando Rodrigues Gonzalez and Flavio Araujo

### Overview of the State-of-Practice of BIM in the AEC Industry in the United States
Hala Nassereddine, Makram Bou Hatoum and Awad Hanna

### Machine Learning for Construction Process Control: Challenges and Opportunities
Bharath Sankaran

### 5G Wireless Communication for Autonomous Excavation
Rauno Heikkilä, Matti Immonen, Heikki Keränen, Olli Liinamaa, Esa Piri and Tanja Kolli

### G - Technology management and innovation

<table>
<thead>
<tr>
<th>Title</th>
<th>Authors</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>The Use of Drones in the Construction Industry: Applications and Implementation</td>
<td>Makram Bou Hatoum and Hala Nassereddine</td>
<td>542</td>
</tr>
<tr>
<td>Intelligent BIM-based spatial conflict simulators: A comparison with commercial 4D tools</td>
<td>Leonardo Messi, Borja García de Soto, Alessandro Carbonari and Berardo Naticchia</td>
<td>550</td>
</tr>
<tr>
<td>BIM-assisted, automated processes for commissioning in building services engineering</td>
<td>Ralf Becker, Christoph Blut, Christoph Emunds, Jérôme Frisch, Dirk Heidermann, Tristan Kinnen, Alexander Lenz, Michael Möller, Nicolas Pauen, Tobias Retig, Dominik Schlütter, Matthias Wenthe, Jörg Blankenbach, Günter Bleimann-Gather, Johannes Fütterer, Jörg Jungedeitering and Christoph van Treeck</td>
<td>558</td>
</tr>
<tr>
<td>Blockchain-supported design tool on building element scale</td>
<td>Goran Sibenik, Marijana Sreckovic, Thomas Preindl, Martin Kjäer, and Wolfgang Kastner</td>
<td>566</td>
</tr>
<tr>
<td>Digital Transformation in Asset Management – A Case of BIM Adoption in New Zealand Local government</td>
<td>John Jiang, Theuns Henning and Yang Zou</td>
<td>574</td>
</tr>
<tr>
<td>Project-based curriculum for teaching construction robotics</td>
<td>Cynthia Brosque and Martin Fischer</td>
<td>582</td>
</tr>
<tr>
<td>A case-based reasoning technique for evaluating performance improvement in automated construction projects</td>
<td>Krishnamoorthi Sundararaman and Benny Raphael</td>
<td>590</td>
</tr>
<tr>
<td>The Optimized Process for Effective Decision Makings to Minimize Fall From Height (FFH) Accidents on Construction Site</td>
<td>Qinghao Zeng and Jong Han Yoon</td>
<td>597</td>
</tr>
<tr>
<td>Construction Robotics Excellence Model: A framework to overcome existing barriers for the implementation of robotics in the construction industry</td>
<td>Jan-Iwo Jäkel, Shervin Rahnama and Katharina Klemt-Albert</td>
<td>605</td>
</tr>
<tr>
<td>State of Advances in Reality Capture for Construction Progress Monitoring and Documentation</td>
<td>Jordan Grogan, Anoop Sattineni and Jeff Kim</td>
<td>614</td>
</tr>
</tbody>
</table>
H - Applications in developing countries

An Approach for Estimation of Swing Angle and Digging Depth During Excavation Operation.................................................................................................................. 622
Amirmasoud Molaei, Marcus Geimer and Antti Kolu

Automated Valve Detection in Piping and Instrumentation (P&ID) Diagrams................ 630
Mohit Gupta, Chialing Wei and Thomas Czerniawski

Suitability and Effectiveness of Visualization Platform-based Construction Safety Training modules........................................................................................................ 638
Kishor Bhagwat and Venkata Santosh Kumar Delhi

Semiarid Terrain Alteration for Converting Dryland into Arable Land – Construction and Earthmoving Perspectives................................................................. 646
Moshe Alamaro, Joseph Louis and Jochen Teizer

Action Sequencing in Construction Accident Reports using Probabilistic Language Model..................................................................................................................... 653
Quan Do, Tuyen Le and Chau Le