Vol-2394 urn:nbn:de:0074-2394-2

Copyright © 2019 for the individual papers by the papers' authors. Copying permitted for private and academic purposes. This volume is published and copyrighted by its editors.

EC ICE 2019

Workshop on Intelligent Computing in Engineering

26th International Workshop on Intelligent Computing in Engineering Leuven, Belgium, June 30 to July 3, 2019.

Edited by

Philipp Geyer *
Karen Allacker *
Mattias Schevenels *
Frank De Troyer *
Pieter Pauwels **

ceur-ws.org/Vol-2394/ 1/4

^{*} KU Leuven, Faculty of Engineering Science, Belgium

^{**} Ghent University, Faculty of Engineering and Architecture, Belgium

Table of Contents

Preface

Session 0: Best Paper 2018

 Semantic Segmentation of 3D Reconstructions of Building Facilities Thomas Czerniawski, Fernanda Leite

Session 1: Life-cycle Design Support I

- A Product-Centric Approach for Assessing the Energy Performance of Solution for Building Renovations
 - Christoph Bindal-Gutsche, Timo Hartmann
- Semantic Query Languages for Knowledge-Based Web Services in a Construction Context
 - Jeroen Maurits Werbrouck, Madhumitha Senthilvel, Jakob Beetz, Pierre Bourreau, Léon van Berlo
- A Quantitative Comparison of Adaptive Reuse Strategies of Residential Towers in Northern Climates
 - Sheida Shahi, Carl Haas, Philip Beesley
- Information Extraction to Support Automation of 3D Models Navigation during Collaborative Design Sessions
 - Lucian-Constantin Ungureanu, Timo Hartmann
- Minimized Communication Protocol Based on a Multi-LOD Meta-Model for Adaptive Detailing of BIM Models
 - Ata Zahedi, Jimmy Abualdenien, Frank Petzold, André Borrmann

Session 2: Life-cycle Design Support II

- Influence of Building Parameters on Thermal Mass Modification with Phase Change Materials (PCMs): Numerical Study based on Design of Experiments Gilles Baudoin, Geoffrey van Moeseke
- Statistical Decision Assistance for Determining Energy-Efficient Options In Building Design Under Uncertainty
 Manav Mahan Singh, Philipp Geyer
- Future Energy Demands of European Buildings in the Framework Of Climate Change: A Scoping Study Virgilio Ciancio, Ferdinando Salata, Iacopo Golasi, Gabriele Curci, Serena Falasca, Pieter De Wilde
- Sensitivity Analysis of Door Gap Size and Solar Effect on Multi-zone Indoor Airflow CFD Simulation Using BIM Jack Cheng, Helen Kwok, Alison Li, Jimmy Tong, Alexis Lau

Session 3: Life-cycle design support III

- Change Management Concepts for Structural Design in Early Planning Phases Martina Schnellenbach-Held, Daniel Steiner
- A Multi Agent Systems Framework for Integrating Environmental Parameters in the Design of Shell Structures

Evangelos Pantazis, Gerber David

ceur-ws.org/Vol-2394/ 2/4

- Parametric Virtual Design-Based Multi-Objective Optimization for Sustainable **Building Design**
 - Cunyi Cheng, Jelena Ninic, Walid Tizani
- Realistic Structural Stabilization based on Spatial Zoning Sionnie Boonstra, Dennis Claessens, Hèrm Hofmever, Bauke de Vries

Session 4: BIM and Engineering Ontologies I

- Integrating Railway Subdomain-Specific Data Standards into a Common IFCbased Data Model
 - Sebastian Esser, André Borrmann
- A Semantic Model of Intelligent Transportation Systems Mahsa Mirboland, Kay Smarsly
- State of the Art in Damage Information Modeling for Bridges Mathias Artus, Christian Koch
- Parametric Design and Isogeometric Analysis of Tunnel Linings within the **Building Information Modelling Framework** Jelena Ninic, Hoang-Giang Bui, Guenther Meschke

Session 5: BIM and Engineering Ontologies II

- Educational Facility Design with Graph Grammar Systems Ewa Grabska, Barbara Strug, Grażyna Ślusarczyk
- Conformance Checking of IFC Models via Semantic BIM Reasoner Muhammad Fahad. Nicolas Bus
- Distributed Manufacturer Services to Provide Product Data on the Web André Hoffmann, Anna Wagner, Tim Huyeng, Meiling Shi, Julian Wengzinek, Wendelin Sprenger, Christoph Maurer, Uwe Rüppel

Session 6: Monitoring and control algorithms in engineering I

- An Automated Approach for Point Cloud Alignment based on Density Histograms Jan Martens, Jörg Blankenbach
- A Framework of Multi-user Voice-driven BIM-based Navigation System for Fire **Emergency Response** Hui Zhou, Mun On Wong, Huaquan Ying, Sanghoon Lee
- Model-based Interpretation of Floor Vibrations for Indoor Occupant Tracking Slah Drira, Yves Reuland, Ian Smith
- Knowledge-Based Target Selection in a Building Navigation System Woiciech Palacz
- Adaptive Feature-Conserving Compression for Large Scale Point Clouds Felix Eickeler, André Borrmann

Session 7: Monitoring and control algorithms in engineering II

- Metamodeling Wireless Communication in Cyber-Physical Systems Kay Smarsly, Theresa Fitz, Dmitrii Legatiuk
- System-Based Resilience Assessment of Networked Transportation Systems in Metropolitan Areas: Case of Greater Los Angeles Eyuphan Koc, Barbaros Cetiner, Ellen Jisu Lee, Lucio Soibelman, Ertugrul Taciroglu, Anya Nutakki

3/4 ceur-ws.org/Vol-2394/

- Knowledge-based Registration for Reliable Correlated Change Detection on High-pier Curved Continuous Rigid Frame Bridge Zhe Sun, Ying Shi, Wen Xiong, Pingbo Tang
- Fault-Tolerant Variable Speed Limit Control for Freeway Work Zone Shuming Du, Saiedeh Razavi

Session 8: Advanced computing in engineering

- Towards Registration of Construction Drawings to Building Information Models using Knowledge-based Extended Geometric Hashing Maciej Trzeciak, André Borrmann
- Input Feature Optimization for ANN Models Predicting Daylight in Buildings Clara-Larissa Lorenz, Spaeth, Bleil De Souza, Packianather
- Combining Airborne Images and Open Data to Retrieve Knowledge of Construction Sites
 Katrin Jahr, Dorota Iwaszczuk, André Borrmann

Session 9: Computer supported construction management

- Convolutional Long Short-Term Memory Model for Recognizing Postures from Wearable Sensor Junqi Zhao, Esther Obonyo
- Skills Assessment for Robotics in Construction Education Fopefoluwa Bademosi, Ralph Tayeh, Raja R. A. Issa
- 4D Simulation Considering Adjusted Schedules for Safety Planning in Hydroelectric Projects
 Michel Guevremont. Amin Hammad

2019-06-30: submitted by Philipp Geyer, metadata incl. bibliographic data published under Creative Commons CC0

2019-06-30: published on CEUR-WS.org |valid HTML5|

ceur-ws.org/Vol-2394/ 4/4