

Enabling the development and implementation of Digital Twin

20th International Conference on
Construction Applications of Virtual Reality

30th Sep -2 Oct 2020

Teesside University, UK

Detailed Programme

Day-1: 30th September 2020

Time	Session	Presenter
10:45 - 11:00 AM	Checking your connection	
11:00 – 11:15 AM	The CONVR journey, 20 th version and looking forward to the future	Prof. Nashwan Dawood
11:15 – 12:15 PM	Keynote 1: Digitizing a Smart Built Environment: “The future is today	Professor David Edwards, Birmingham City University
12:15 – 13:15	Break	
<i>Session 1</i>		
Session Name: BIM, AR/VR/AI		Moderator: Jochen Teizer
13:15 – 14:15	Converting open standard CAD formats into decentralised common data environments	Stephen Oliver
	Superimposing Building Information Models in augmented reality	Vishak Dudhee
	Non-monotonic reasoning for automated progress analysis of construction operations	Rasmus Nielsen
	Web-based construction collaboration tools: text mining of user perceptions	Mahmuda Chowdhury
14:15 – 14:30	Break	
14:30 – 15:30	Keynote 2: Automated 3D Modeling and Visual Storytelling: Crossing Disciplinary Boundaries	Dr Fernanda Leite, University of Texas at Austin
<i>Session 2</i>		
Session Name: Digital Twin		Moderator: David Edwards
15:30 – 16:30	Digital Twin Uses Classification System for Urban Planning & Infrastructure Program Management	Ramy Al-Sehrawy
	Digital Twin driven musculoskeletal injury prevention system	Omobolanle Ogunseiju
	Holographic learning environment for bridging the technical skill gap of the future smart construction engineering students	Omobolanle Ogunseiju
	Immersive video capture technology for construction management education	Alireza Shojaei

Day-2: 1st October 2020

Time	Session	Presenter
09:00 - 10:00 AM	Keynote 3: Digital Twinning for the Built Environment	Dr Ioannis Brilakis University of Cambridge
10:00 – 10:15 AM	Break	
Session 1		
Session Name: Building Information Modelling		Moderator: Subashini Suresh
10:15 – 11:15	A proposal of a site object library for construction workers' safety training using BIM-based immersive virtual reality	Vito Getuli
	Automatic generation of 3D building models for BIM by polygon partitioning and rectification	Kenichi Sugihara
	Automated BIM-based formwork quantity take-off	Yasar Cepni
Session 2		
Session Name: AR & VR, Serious Games & Wearables		Moderator: Saleh Seyedzadeh
11:15 – 12:15	Developing a mixed-reality based application for bridge inspection and maintenance	Duy Cuong Nguyen
	Vision based construction site monitoring: a review from construction management point of view	Aritra Pal
	AR-based and User-Centered Approach to the On-site Design Decision Support for Building Remodel Projects	Sanghoon Lee
	Improving construction risk assessment via integrating Building Information Modeling (BIM) with virtual reality (VR)	Rolim A. L.
12:15 – 13:00	Break	
13:00 – 14:00	Keynote 4: The Value of a Digital Twin in the Property Sector	Rob Charlton Chief Executive of Space Group
14:00 – 14:15	Break	
Session 3		
Session Name: Building Information Modelling		Moderator: Atif Hafeez
14:15 – 15:00	Developing an intensional definition satisfying the philosophy of definitions to appraise the theory of BIM	Githyon Prabhu
	Facilitating information exchange for 3D retrofit models of existing assets using semantic web technologies	Farhad Sadeghineko
	Illuminating the ideological developments of BIM terminology and definitions	Githyon Prabhu

15:00 – 15:15	Break	
<i>Session 4</i>		
Session Name: Monitoring & Inspection		Moderator: Atif Hafeez
15:15 – 16:15	Indrone: visualizing drone flight patterns for indoor building inspection tasks	Ricardo Eiris
	Visual dust emission monitoring for construction activities	Ruoxin Xiong
	Active personalized training of construction safety using run time data collection in virtual reality4	Jochen Teizer
	Automatic Generation of 3D Terrain Models for Debrics Flow Simulation	Kenichi Sugihara

Day-3: 2nd October 2020

Time	Session	Presenter
09:00 - 10:00 AM	Keynote 5: Facilitating the standardisation of lifecycle carbon assessment for rail infrastructure through a BIM-based assessment framework	Professor Nashwan Dawood Teesside University
10:00 – 10:15 AM	Break	
<i>Session 1</i>		
Session Name: AR & VR, Serious Games & Wearables		Moderator: Farzad Rahimian
10:15 – 11:15	Using virtual reality to evaluate the impact of dispersion of elements on kinetic façade	Mojgan Rezakhani
	Collaborative scheduling with 4D extended to virtual reality	Mikael Viklund Tallgren
	Automated progress monitoring via schedule updating by using convolutional neural networks and a specialized labeled dataset for construction components	Reza Hedayat Nejad
	The application of virtual reality in construction education: A South Africa case study	Nishani Harinarain
11:15– 11:30	Break	
11:30 – 12:30	Keynote 6: BIM for Smart Engineering	Professor Haijiang Li, Chair at Cardiff University
12:30 – 13:15	Break	
<i>Session 2</i>		
Session Name: Image Processing		Moderator: Anderson Akponeware
13:15 – 14:15	Visualization of Barriers for Vulnerable Pedestrians based on 3D Modeling with SfM	Koki Taniguchi

	Image-based Verification and Mapping of Physical Barrier for Wheelchair	Rio Takahashi
	The House Configurator: Configuring BIM Variables Using Game Interfaces	Lilia Potseluyko Amobi
	Virtual Reality in Construction Health and Safety Education: Students Experience through Video Elicitation - A Pilot Study	Mark Swallow
Session 3		
Session Name: AI		Moderator: Farzad Rahimian
14:15 – 15:15	An image feature classification system for piers based on semantic segmentation with deep learning	Natthapol Saovana
	Awareness of Big Data concept in the Dominican Republic Construction Industry: An empirical study	Paola Reyes Veras
	Employing BIM-based geostatistical analysis to design a monitoring arrangement	Elham Mahmoudi
	Conceptualizing 3D Model Development and Validation via the Integration of Speech Cognitive Processing	Andrew Pidgeon
15:15– 15:45	Workshop: Game Engine Technologies: current and future development	Richard Baker, Teesside University
15:45 – 16:45	Keynote 7 and Closing Note	Dr Farzad Rahimian, Teesside University