

29 July Monday	AI	Specialist LLMs	Room
9:45 a.m.	275	Incorporating Domain Knowledge Repository into Large Language Models for Question-Answering of Construction Laws and Regulations in China Zhou, Shenghua; wang, hongyu; Cheng, Xiaohan; li, dezhi*; chen, zhengyi; Wei, Ran; Ng, S. Thomas	
10:00 a.m.	409	Generative Pre-trained Transformers (GPT)-based Automated Building Regulatory Information Transformation. Yang, Fan*; Zhang, Jiansong; Duong, Long	Grand Station 3
10:15 a.m.	178	Cause Discovery from Defects Complaint Texts Using Retrieval Augmented Generation by Chaining a Large Language Model with a Knowledge Graph Jeon, Kahyun*; Lee, Ghang; Kim, Yonghan; Lim, Jiyoung	
10:30 a.m.	265	GPT4-Vision Multimodal Model-Powered Query-Answering Chatbot for Bridge PDF Drawings Soy, Meta*; Zhang, Jiansong	
	AI	AI in Building Energy Management	
11:00 a.m.	583	Automated Thermal Anomaly Detection through Deep Learning-based Semantic Segmentation of Building Envelope Images Mirzabeigi, Shayan*; Razkenari, Mohamad; Crovella, Paul	
11:15 a.m.	445	Are Transformers Effective for Time Series Anomaly Detection? — A Case Study in Building Energy Management Gu, Yueyan; Wang, Xuan; Jazizadeh, Farrokh*	Grand Station 3
11:30 a.m.	447	CityTFT: A Temporal Fusion Transformer based Twin Model for Urban Building Energy Modeling Dai, Ting-Yu*; Niyogi, Dev; Nagy, Zoltan	
11:45 a.m.	478	A Markov decision process-based method to generate strategies for automated updating of building energy models Wang, Zhichen*; Bergés, Mario; Akinci, Burcu	
	AI	Data-driven Infrastructure Operations	
2:00 p.m.	273	Identification and Geolocation of Pavement Marking Issues Based on Artificial Intelligence and Mobile Phone Kuang, Biao; Chen, Jianli*; Hu, Yuqing	
2:15 p.m.	169	Spatial-temporal Estimation of Settlement in Foundation Work Based on Deep Learning Yang, Chen*; Wang, Chen; Fan, Jian-sheng	
2:30 p.m.	198	Deep Learning-based Surface Defect Detection: Three-class Segmentation Ji, Donghoon; Turkan, Yelda*; Calvi, Paolo	Grand Station 3
2:45 p.m.	558	Scenarios Adaptive Building Defect Inspection by Active and Incremental Learning Wen, Yining; Chen, Kaiwen*; Bao, Jingwei	
3:00 p.m.	150	Few-Shot Learning for Key Information Extraction from Bridge Inspection Reports Xiong, Wen; Wang, Yuchen; Zhu, Yanjie*; Cai, C.S.	
3:15 p.m.	186	Analysis of Roadside Features on Rural Road-Departure Crashes and its Severity: A Computer Vision Approach Subedi, Abhishek K*; Rashidi, Abbas; Markovic, Nikola	
	AI	Application of Language Models	
3:45 p.m.	395	Leveraging Large Language Models to Assist Bridge Element Visual Inspections Yuan, Chenxi*; Topcu, Onur Kaan; Lee, Felix H.	
4:00 p.m.	349	Large Language Model-based data-driven framework for digital transformation in construction industry Ma, Ruiyang*; Shen, Geoffrey Qiping; Lou, Peiliang; Wang, Ming	
4:15 p.m.	239	Prompt-based Virtual Assistant Framework for Construction Working Method Specifications He, Chuanni; Liu, Min*; He, Weilin	Grand Station 3
4:30 p.m.	132	Standard-Driven Chinese Knowledge Extraction in Highway Domain using Machine Learning and NLP Approach Loh, Ching Wah; Zhang, Xiao-Bing; Lin, Jia-Rui; Hu, Zhen-Zhong*	
4:45 p.m.	600	ai.e.AEC-Bench: A Multidisciplinary Multilevel Chinese Evaluation Benchmark for Large Language Models in AEC Liang, Chen*; Yan, Shen; Guo, Qianyu; Sun, Jiawei; Cheng, Fei; Liu, Zhengjie; Xiao, Weifang; Wang, Meng; Wang, Haofen; Zhao, Xianzhong	
30 July Tuesday	AI	ML in Construction Management	
9:45 a.m.	79	Using Data Mining Algorithms to Identify Critical Patterns Among Various Performance Indicators of Bundled Projects Delivered under The Construction Manager/General Contractor (CM/GC) Project Delivery Method Assaf, Ghiwa; Assaad, Rayan*	
10:00 a.m.	592	Predicting Project Contingency in the Construction Industry Using Machine Learning Algorithms Charbel, Ghadi; Assaad, Rayan*; Lyssikatos, John; Karaa, Fadi	Grand Station 3
10:15 a.m.	203	Dynamic work package sizing and scheduling under uncertainties using hierarchical reinforcement learning zhang, nianmin*; Li, Xiao	
10:30 a.m.	33	Integrating Sensor-Empowered Federated Learning and Smart Contracts for Automatic Flood Risk Management Chen, Gongfan*; Alsharif, Abdullah; Jaselskis, Edward	
	AI	Environmental Quality Predictive Modeling	
11:00 a.m.	114	Deep Learning and Meteorological Data for Indoor Environmental Quality Prediction Lee, Min Jae*; Zhang, Ruichuan	
11:15 a.m.	492	Toward Generalized CO2 Prediction in Educational Buildings Meimand, Mostafa; Jazizadeh, Farrokh*	Grand Station 3
11:30 a.m.	57	Predictive Learning for Air Pollution at Construction Sites Using Multimodal Data Zhang, Ruichuan*; Chen, Bin; Krall, Jenna	
11:45 a.m.	599	Monitoring Traffic-Related Air Pollution (TRAP) through calibrated low-cost sensors Liu, Ying-Ru*; Hsiao, Ta-Chih; Chang, Po-Kai; Chen, Albert	
	AI	Computer Vision-based Operations	
2:00 p.m.	504	Integrating Image Enhancement, Classification, and Segmentation for Supporting Automated Underwater Infrastructure Inspection and Maintenance Talamkhani, Saeed; Liu, Kaijian*	
2:15 p.m.	218	Integrating deep learning and real-time GNSS localization for GIS-based traffic sign management Sun, Yifeng; Zhao, Haomiao; Lam, Chi Chiu; Wong, Mun On*; Liang, Haoyang; Kou, Kun Pang	
2:30 p.m.	213	Vision-based Module Positioning and Alignment Approach in Modular Integrated Construction Jiang, Ruiqi; Li, Xiao*	Grand Station 3
2:45 p.m.	195	Establishing a computer vision-based object detection database for modular construction quality monitoring yanggongjie, xiao*; Chi, Hung-Lin	
3:00 p.m.	441	Text-enhanced Label-efficient Automated Bridge Defects Semantic Segmentation from Inspection Images Wang, Shengyi*; El-Gohary, Nora	
3:15 p.m.	501	Automated Image Segmentation for Detecting Defects in Brick-Wall Surfaces Huang, Yuxiang*; El-Gohary, Nora	
	AI	Application of Generative Models	
3:45 p.m.	314	A Review of Synthetic Data Generation Methods for Machine Learning Models in Construction Golazad, SeyedeZahra*; Mohammadi, Abbas; Rashidi, Abbas	
4:00 p.m.	412	Evaluating Generative Adversarial Network (GAN) Models for Generating Images of Defective Façades Kiper, Beyza*; Dey, Nilay; Azad, Aditya; Ergan, Semiha	
4:15 p.m.	510	Generative Model-based Data Augmentation Approach for Supporting Maintenance Decision-Making Chen, Qiyang*; El-Gohary, Nora	Grand Station 3
4:30 p.m.	69	Constrained Diffusion Model for Interoperable Floor Plan Generation Zhang, Haolan*; Zhang, Ruichuan	
4:45 p.m.	380	An Approach for Domain-Informed Generative Architectural Design Park, Keundeok*; Ergan, Semiha	
31 July Wednesday	AI	Intelligent Transportation	
9:45 a.m.	73	An Empirical Analysis of Secure Federated Learning for Autonomous Vehicle Applications Mia, Md Jueal*; Amini, M. Hadi	
10:00 a.m.	318	Optimizing Urban Charging Infrastructure for Electric Vehicles: A Data-Driven Approach to Boost Adoption and Reduce Costs Hu, Hongyu*; Zhao, Dong	Grand Station 3
10:15 a.m.	112	Fine-Grained FHWA-13 Vehicle Classification: A Two-Stage Vision-Based Approach Integrating Semantic and Geometric Features with Verification Scheme Lu, Linjun; Dai, Fei*	
10:30 a.m.	509	Performance Evaluation of Real-Time Object Detection for Electric Scooters Chen, Dong*; Hosseini Aliabad, Seyed Arman; Smith, Arik; Nikkhab, Amir Farzin; Heydarian, Arsalan; Shoghli, Omid; Campbell, Brad	
	AI	Visual Scene Inference	
11:00 a.m.	197	Open Vocabulary Multimodal Model (OVMM)-based Zero-Shot Method for Obtaining Broader Semantic Information from Construction Site Images Li, Haotian*; Tang, Llewellyn	
11:15 a.m.	179	Prediction of Visual Quality of Streetscape Images Using Computer Vision lee, meesung*; hwang, sungjoo	Grand Station 3
11:30 a.m.	123	An Active Learning Pipeline Powered by Image Synthetization and Retrieval Techniques: A Novel Training Approach for Construction-Centric DNNs Tohidifar, Ali*; Kim, Daeho	
11:45 a.m.			

29 July Monday		BIM	Digital Twin Concepts	Room
9:45 a.m.	559	Towards Digital Twins: Technology and Challenges in Bridge Information Modeling (BIM) Hatami, Afshin*; Rosti, Firouz; Mabrich, Alex		
10:00 a.m.	506	Exploring Digital Twin Applications: A Comprehensive Review and Future Directions through Maturity Models in the AECO Industry Elkabalawy, Moaaz A*; Zeynolabedini, Shima; Han, SangHyeok O; Ma, Jong Won		Grand Station 4
10:15 a.m.	249	Towards Trustworthy Road Digital Twins: A State-of-the-art Review Lu, Linjun*; PAN, YUANDONG; Brilakis, Ioannis		
10:30 a.m.	605	Infrastructure Digital Twins: A Definition Vick, Steven; Serano, Matthew; Mulholland, Sean M*		
		BIM	Digital Twins in Action	
11:00 a.m.	82	Developing Digital Twins for Real-Time Bridge Structural Health Monitoring by Integrating Scan-to-BIM Remote Sensing Technologies, Photogrammetry-based 3D Scanning, Finite Element Modeling, and IoT Sensing Hu, Xi; Assaad, Rayan*; Ravishankar, Sanjay; Prakash, Saadhika; Lin, Jayden		
11:15 a.m.	535	Digital Twin Technologies in Predictive Maintenance: Enabling Transferability via Sim-to-Real and Real-to-Sim Transfer Ma, Sizhe*; Flanigan, Katherine; Bergés, Mario		Grand Station 4
11:30 a.m.	85	Advancing Sound Level Localization through Innovative Integration and Fusion of Remote Sensing and Reality Captured LiDAR-based Digital Twins, Auditory Devices, and IoT Technologies Poudel, Oscar; Assaad, Rayan*		
11:45 a.m.	386	Digital Twins in Construction: Leveraging Point Cloud Data and BIM for Monitoring Project Schedule Alavi, Hamidreza*; WANG, MUDAN; Wang, Guangming; Kookalani, Soheila; Mathew, Alwyn; Brilakis, Ioannis		
		BIM AI	Point Cloud Instance Segmentation	
2:00 p.m.	136	3D Instance Segmentation of Indoor Scenes Based on Point Cloud Neural Networks Wang, Hongxu*; JiePeng, Liu; Chen, Tianze; Liu, Pengkun; Li, Dongsheng; Zhou, Junwen		
2:15 p.m.	137	A Deep Learning-Driven Framework for Efficient and Robust 3D Instance Segmentation Chen, Tianze*; Wu, 91196010; Wang, Hongxu; JiePeng, Liu; Liu, Pengkun; Li, Dongsheng; Qi, Hongtuo		
2:30 p.m.	256	Complex Instance Segmentation in Point Clouds with Images and 3D Models Hu, Zhiqi*; PAN, YUANDONG; Brilakis, Ioannis; Borrmann, Andre		Grand Station 4
2:45 p.m.	172	Automated SCAN-to-BIM with Point Cloud Instance Segmentation and Large Language Model Knowledge Enhancement Liu, Pengkun; JiePeng, Liu; Wang, Hongxu; Chen, Tianze; Li, Dongsheng*		
3:00 p.m.	208	Deep-learning Model for Multi-scale Construction Object Detection from 3D Sparse LiDAR Zhang, Mingyu; WANG, Lei; HAN, Shuai*		
3:15 p.m.	96	Leveraging Spatial Orientation of Extruded Profiles for Point Cloud Instance Segmentation and Instance Enrichment in Structural Systems Noichl, Florian*; Braun, Alex; Borrmann, André		
		BIM AI	Inference in Point Clouds	
3:45 p.m.	270	An Integrated Solution for Automatic 3D Object-based Information Retrieval WEN, YA*; WANG, MUDAN; Ariyachandra, Mahendrini; Wang, Guangming; Brilakis, Ioannis; Xiao, Lizhao		
4:00 p.m.	404	Object-level Temporal Change Detection on Construction Sites with 3D Deep Learning Models Rugg, Jeffrey; Chen, Jingdao*; Gugssa, Mikias W; Wang, Jun		
4:15 p.m.	317	Experimental Evaluation of Building Façade Extraction Algorithm Using 3D Synthetic Point Clouds Han, Sisi*; Bai, Yong; Jiang, Yuhan		Grand Station 4
4:30 p.m.	297	Few-shot Bridge Component Recognition Using Point Cloud Data Based On Large-scale CV Model CUI, Na*; JiePeng, Liu; Zeng, Yan		
4:45 p.m.	398	Bike Lane Width Estimation on LiDAR Point Cloud Using Dimensionality Reduction and Weakly Supervised Learning Wei, Chialing*; Gupta, Mohit; Eiris, Ricardo; Czerniawski, Thomas		
30 July Tuesday		BIM	BIM Specialty Tools	
9:45 a.m.	170	Testing the learning capabilities of Reinforcement Learning towards automated clash resolution Harode, Ashit*; Thabet, Walid		
10:00 a.m.	324	Analyzing Attributes and Objectives of MEP Buildability Issue Descriptions: A Comparison of VR and non-VR Girgin, Simge*; Fruchter, Renate; Fischer, Martin		Grand Station 4
10:15 a.m.	121	Graph-based change propagation across BIM design software applications Wang, Zijian*; Ying, Huaquan; Nyberg, Kim; Sacks, Rafael		
10:30 a.m.	415	Virtual Design and Construction Time Study Schema Development Borjigin, Orgil; Wu, Lingzi; Dossick, Carrie S*		
		BIM	Reality Capturing	
11:00 a.m.	321	Preservation of Heritage Buildings through Digitization - Reality Capture of the Old Faithful Inn; An Overview of the Process, Potentials and Challenges. Olorunnishola, Ayoola; Zhang, Chengyi*; Kumar, Danish; Liu, Peng; Denzer, Anthony		
11:15 a.m.	290	A Systems Framework for Examining Laser Scanning Adoption in Geometric Quality Assessment of Offsite Construction XU, Jiayi*; LIU, XINQI; Pan, Wei		Grand Station 4
11:30 a.m.	230	A 3D modeling approach based on UAV-captured low-light images LIANG, Zhaolun*; Li, Haojia; WU, Hao; WONG, Kok Yiu; LIN, Fangzhou; LIANG, Zhenyu; CHENG, Jack Chin Pang		
11:45 a.m.	603	Volume Estimation of Landslide Debris on Roadways Using UAVs and Structure from Motion Opanasopit, Chonnapat*; Louis, Joesph		
		BIM	Digital Twins in Action	
2:00 p.m.	215	Framework for Automated Assembly Quality Assessment of DfMA Modules using Augmented Reality-enabled Digital Twin (ARDT) LI, ZHIGANG*; Liang, Yuanchang; Chua, David K H		
2:15 p.m.	278	Automated generation of geometric digital twin of roof for building retrofitting WANG, MUDAN*; WEN, YA; PAN, YUANDONG; Wang, Guangming; Alavi, Hamidreza; Kookalani, Soheila; Brilakis, Ioannis		
2:30 p.m.	284	TailorAlert: Large Language Model-Based Personalized Alert Generation System for Road Infrastructure Management with Digital Twins Luo, Peihang*; Parn, Erika; Kookalani, Soheila; Brilakis, Ioannis		Grand Station 4
2:45 p.m.	567	A Framework of Managing Non-emergency Civic Services based on Digital Twinning and Crowdsourcing Zhang, Jinyue*		
3:00 p.m.	149	Process-oriented quality defect reasoning and tracing engine in construction digital twin for quality control Zeng, Ningshuang*; Liu, Yan; Huang, Jie; König, Markus; Li, Qiming		
3:15 p.m.	298	Digital twinning everything all-at-once in facility management: A rapid configurable, deployable and scalable platform HUANG, Guanying*; NG, Shiu Tong Thomas; li, dezhi; XU, Jun		
		BIM	Model Content Generation	
3:45 p.m.	14	Domain-specific fine-tuning of LLM for material matching of BIM elements and Material Passports Forth, Kasimir*; Berggold, Patrick; Borrmann, André		
4:00 p.m.	413	Large Language Model-based Reasoning for Hierarchical Structure of Scan-to-BIM Objects under IFC Standard Xiao, Jinwu; Hu, Jiashu; Kang, Hyuna; Hong, Tahoon; Kang, Kyubyung*		
4:15 p.m.	283	Dense 3D Neural Map Reconstruction Only Using a Low-cost LiDAR Wang, Guangming*; Mathew, Alwyn; WANG, MUDAN; WEN, YA; Alavi, Hamidreza; Chen, Weiwei; Brilakis, Ioannis		Grand Station 4
4:30 p.m.	461	An Open Vocabulary Framework for Efficient 2D-3D Visual Data Annotation in Indoor and Outdoor Built Environments Rahman, Md Ashiqur; Xu, Jiuyi; liu, ziming; Chen, Meida; Zhu, Runhe*; Liu, Yizhi; Shi, Yangming; Feng, Andrew		
4:45 p.m.	334	Intelligent layout of annotations in fabrication drawings of precast concrete components based on hybrid bounding box and reinforcement learning chao, zhang*; Chengran, Xu; JiePeng, Liu; Hongtuo, Qi		
31 July Wednesday		BIM	Specialty BIM	
9:45 a.m.	165	Cloud BIM Interdisciplinary Concurrent Design Collaboration: Refining Experimental Tools by Assessing Interaction Dynamics in Two Experiments Chen, Siyu*; Lau, Anthony; Valkonen, Tuomas; Yeung, Timson; Nyberg, Kim; Sacks, Rafael		
10:00 a.m.	516	Sustainability Integration of Building Information Modeling in Construction Management Sharafeddin, Asma A*		Grand Station 4
10:15 a.m.	276	Building Information Modeling Level of Development Checker Fan, Su-Ling; LU, SHAO-MING*; Wu, Chun-Tin; Ahn, Sang Hyung; Lin, Szu-Yun		
10:30 a.m.	237	Improving the Efficiency of Road Construction Projects through Building Information Modeling (BIM) for Infrastructure Hegazy, Hosam*; Li, Hang; Zhang, Jiansong		
		BIM	BIM in Practice	
11:00 a.m.	397	Navigating the adoption of model-based computer technology in estimating: Insights from a case study with preconstruction practitioners Liu, Qipeng*; Liu, Rui		
11:15 a.m.	388	Re-imagining Building Information Management Use Case Definitions for the U.S. National BIM Standard Ghorbani, Zahra*; Kreider, Ralph; Fortune, Johnny; Messner, John		Grand Station 4
11:30 a.m.	400	BIM Adoption Barriers in Developing Countries Ozcan-Deniz, Gulbin*; Ozorhon, Beliz; Kaya, Osman Can		
11:45 a.m.	245	Contractor Perspectives of Digital Project Deliverables: An Exploratory Study Celoza, Amelia*		

29 July Monday	S&H	Generative Artificial Intelligence for Safety	Room
9:45 a.m.	71	Generative AI-based Query Answering System for Construction Safety Regulation Wang, Ning*	
10:00 a.m.	279	Development of a Framework for Generative AI-based Safety Management via Prompt Engineering Park, SeungJu; Jung, KIHyun; Kim, Namgyun; Jeon, JungHo*	Grand Station 5
10:15 a.m.	517	Large Language Models for Construction Post Accident Analysis Katooziani, Ali*; Jeelani, Idris	
10:30 a.m.	59	Can Large Vision-Language Models Understand Construction Safety? A Novel Benchmark Using Construction Safety Posters Chen, Xuezheng*; Zhang, Shengzhe; Zou, Zhengbo	
	S&H	Smart Safety	
11:00 a.m.	145	Construction Behavior Safety Risk Identification Based on Knowledge Graph and Large Language Model Li, Yongshuang; Xu, Feng*; Zhang, Zhipeng; Mei, Xinyu	
11:15 a.m.	19	Improving Heat Strain Prediction in Construction Workers: A Transfer Learning Approach to Overcome Variability Challenges Ojha, Amit; Zhao, Xiayu; Zhang, Yuming; Liu, Yizhi; Jebelli, Houtan*	Grand Station 5
11:30 a.m.	408	Synthesizing Reality: Leveraging the Generative AI-Powered Platform Midjourney for Construction Worker Detection Zhao, Hongyang; Liang, Tianyu; Davari, Sina*; Kim, Daeho	
11:45 a.m.	119	TCLP-Judge: A Deep Learning Model for Real-Time Evaluation of Tower Crane Layout Planning Considering Construction Safety and Efficiency Li, Rongyan*; Hu, Zhiqi; Kookalani, Soheila; Chi, Hung-Lin	
	S&H	Highway & Worker Safety	
2:00 p.m.	423	Assessing Injury Risk Factors Among Construction Workers in Highway Work Zones Lyu, Peiyi; Ramezanpour, Erfan; Ajasa, Solomon; Song, Siyuan*	
2:15 p.m.	513	Assessing Physical Fatigue in Highway Maintenance Workers through Electromyography: The Impact of Lifting Weights and Heights on Bags Handling Guo, Xingzhou*; Hu, Xinran; Chen, Yunfeng; Zhang, Jiansong	
2:30 p.m.	424	Augmenting Highway Workers' Hearing of Backup Alarm Sounds in Noisy Workplace Using Speech Enhancement Generative Adversarial Network (SEGAN) Nguyen, Thinh T*; Elelu, Kehinde A; Le, Robert; Le, Chau	Grand Station 5
2:45 p.m.	593	Pattern-Matching-Based Information Extraction from Transportation Crash Reports for Crash Scene Reconstruction Lai, Jingyi*; Zhang, Jiansong	
3:00 p.m.	299	Application of Time Series Analysis in Forecasting Highway-Railroad Crossing Accidents Frequency in Indiana, USA liu, shufan*; Guan, Shanyue	
3:15 p.m.	425	Customized Implementation of Advanced Safety Sensors for Small Motor Carriers through Vehicle Inspection and Crash Data Analytics Jahanbiglari, Ava*; Shi, Ying; Xiong, Ruoxin; Tang, Pingbo	
	S&H	Work Zone Safety	
3:45 p.m.	126	Safety Analysis of Construction Work Zones Activities using Convolutional Neural Network and BiLSTM Hassandokht Mashhadi, Ali*; Rashidi, Abbas; Marković, Nikola; Mohammadi, Pouria	
4:00 p.m.	383	Enhancing Construction Site Safety: Dual-Model Trajectory Prediction through Computer Vision Wu, Hao*; Chen, Long; Hancock, Craig; Zou, Yang	
4:15 p.m.	209	Enhancing Construction Site Safety with AI: A Multimodal Approach to Understanding Workers' Behavior Guo, Xiaogang; Wang, Ning*	Grand Station 5
4:30 p.m.	240	Smart Safety Training System with Enhanced Human-Technology Interactions for Work Zone Safety Improvement Gugssa, Mikias W; Wang, Jun*; Ma, Junfeng; Howard, Isaac; Wang, Yu; Cotton, Joshua	
4:45 p.m.	435	Exploring Peer Influence on Risk Perception and Safety Performance in Collaborative Construction Workplaces Pooladvand, Shiva; Hasanzadeh, Sogand*	
	S&H	Human-centered Safety	
9:45 a.m.	550	Evaluating Vibrotactile Warning Strategies for Struck-by Hazard Mitigation in Construction Work Zones Yang, Xiang*; Roofigari-Esfahan, Nazila	
10:00 a.m.	325	Exploration of the relationship between visual search and hazard recognition performance using eye-tracking technology Liu, Peng; Zhang, Chengyi*	Grand Station 5
10:15 a.m.	328	Detecting without Training: An Open-vocabulary Object Detection Method for Identifying Hazardous Objects on the Construction Site liu, ziming; Xu, Jiuyi; Suen, Christine Wun Ki; Chen, Meida; Zou, Zhengbo; Feng, Andrew; Shi, Yangming*	
10:30 a.m.	574	Integrating Infrared Sensors and Computer Vision for Heat Stress Detection in Construction Environment Gholizadeh Lonbar, Ahmad; Chen, Kaiwen*; Song, Siyuan	
	S&H	Wearable Technologies for Safety	
11:00 a.m.	56	A Multimodal Machine Learning Approach to Fatigue Assessment in Construction Workers Using Wearable Technology Gautam, Yogesh; Liu, Yizhi; Jebelli, Houtan*	
11:15 a.m.	32	Advancing Realtime Physiological Health Monitoring in Construction: A Feasibility Study of Fatigue Estimation of Construction Workers on Smart Devices Gautam, Yogesh; Ojha, Amit; Liu, Yizhi; Jebelli, Houtan*	Grand Station 5
11:30 a.m.	536	Feasibility of Applying a Wearable Electrodermal Activity Sensor for Individual Fall Risk Assessment Sohn, John Jiu*; Lee, Hoonyong; Lee, Gaang; Jacobs, Jesse; Lee, SangHyun	
11:45 a.m.	40	Evaluation of physical workload on shoulders using surface electromyography sensors in janitor backpack vacuuming tasks Lee, Wonil*; Lin, Jia-Hua; Howard, Ninica; Bao, Stephen	
	S&H	Worker State Inference	
2:00 p.m.	406	A Critical Review of Methods for Physical Fatigue Assessment for Construction Workers Rahman, Md Hadisur; Alam, Nishat; Dai, Fei; Ryu, JuHyeong*	
2:15 p.m.	537	Statistical Modeling of Psychophysiological and Personality Factors to Predict Construction Workers' Near Miss Recognition Performance Muley, Shashank*; Willoughby, Suede; Wang, Chao	
2:30 p.m.	187	Workers' unsafe behavior prediction based on cumulative prospect theory and the first-person perspective image Zhang, Zhitian; Guo, Hongling*	Grand Station 5
2:45 p.m.	86	Developing Real-Time Acoustic Technologies for Enhancing Safety and Efficiency on Construction Job Sites using Deep Learning Algorithms: Moving Towards Automated Construction Site Monitoring Poudel, Oscar; Assaad, Rayan*	
3:00 p.m.	48	An Audio-Based Emotion Monitoring System for Enhancing Construction Worker Safety and Mental Health Wang, Mengjun*; Zhang, Xiande; Li, Shuai; Cai, Jiannan; Hu, Yuqing	
3:15 p.m.	244	Current State of the Art in Real-Time EEG-Based Recognition of Mental Status in Construction Yang, Xiaoying*; Bulbul, Tanyel; Qin, Yimin	
	S&H	Ergonomics	
3:45 p.m.	23	Enhancing Ergonomics and Posture with Wearable Robots for Construction Tasks: Evaluating the Impact of Virtual Reality-Based Exoskeleton Training Platforms Zhang, Yuming; Ren, Tianyu; Jebelli, Houtan*	
4:00 p.m.	35	Evaluating the Impact of Back-Support Exoskeletons on Construction Workers' Fall Risk Shayesteh, Shayan; Ojha, Amit; Gautam, Yogesh; Jebelli, Houtan*; Akanmu, Abosede A	
4:15 p.m.	337	Enhancing Worker Safety and Ergonomics in Steel Erection Using Intermeshed Steel Connection: A Conceptual Framework Oyeyipo, Tolulope; Okonkwo, Chinedu; Awolusi, Ibukun G*; Schultz, Arturo; Laefer, Debra; Al-Sabah, Salam	Grand Station 5
4:30 p.m.	533	Text-to-Motion Generation for Construction Worker's Posture Coaching Applying Stochastic Ergonomic Risk Minimization Wen, Leyang*; Yong, Gunwoo; Baek, Francis; Lee, SangHyun	
4:45 p.m.	214	How do Digital Technologies Facilitate Ergonomic Risk Management in the Construction Industry? A Review TAO, Yu*; Hu, Hao; Mei, Xinyu; Zhang, Zhipeng; Xu, Feng	
	S&H	Hazard/Risk Identification	
9:45 a.m.	188	Automated Safety Risk Rating and Risk Control Plan Execution in Deep Foundation Pit Construction Chen, Shiqi*; Zeng, Ningshuang; Li, Funing; König, Markus; Li, Qiming	
10:00 a.m.	560	Vision-based Ergonomic Problem and Solution Identification with Pose-Aware Image Captioning Yong, Gunwoo*; Liu, Meiyin; Lee, SangHyun	Grand Station 5
10:15 a.m.	34	A Novel Edge Computing Framework for Construction Nail Detection under Conditions of Constrained Computing Resources Chen, Gongfan*; Alsharif, Abdullah; Pedraza, Michael; Albert, Alex; Jaselskis, Edward	
10:30 a.m.	429	Exploring the Impact of Weather Conditions on Construction Workers' Safety: A Focus on Fall Accidents Ajasa, Solomon; Lyu, Peiyi; Marchiori, Raissa; Song, Siyuan*	
	BIM	Point Cloud Processing and Application	
11:00 a.m.	414	Enhancing Drone-Based LiDAR Scanning with Deep Learning for Error Correction Xiao, Jinwu; liu, shufan; Kang, Kyubyoung*	
11:15 a.m.	566	Scan-vs-BIM based Automated Progress Monitoring for a Complex Indoor Facility Park, Sangyoon; Leite, Fernanda; Ma, Jong Won*	Grand Station 5
11:30 a.m.			
11:45 a.m.			

29 July Monday	R&S	Sustainable Built Environment	Room
9:45 a.m.	8	Gamified Virtual Reality for Building Material Reuse Planning Earle, Gabriel*; Katsimpalis, Emmanouil; Byers, Brandon; Haas, Carl; Adey, Bryan; De Wolf, Catherine	
10:00 a.m.	572	Using Biophilic Illusions to Promote Nature Connectedness and Occupant Wellbeing in the Built Environment Altaf, Basma*; Billington, Sarah	Brighton Room 1
10:15 a.m.	547	Feasibility and Implications: Integrating Zero-Emission Vehicles into Power Grid in California Talakoob, Amir; Hooshmand, Hooman; Mohammadpour, Atefeh *	
10:30 a.m.	582	Prototype-wise Sensitivity Analysis of Urban Building Energy Simulation Surrogate Modeling Accuracy Pan, Xiyu; Mohammadi, Neda; Taylor, John E.*; Xu, Yujie; Hong, Tianzhen	
	R&S	Urban Design & Planning	
11:00 a.m.	234	Unifying Multi-Sector Stakeholder Value Systems in Resilience Planning through Reinforcement Learning and Network Analysis Ren, Hang; Zhang, Lu*; Whetsell, Travis; Ganapati, N. Emel	
11:15 a.m.	228	Aligning early building design with urban planning requirements and sustainability indicators Maibaum, Jonas*; Napps, Daniel; König, Markus	Brighton Room 1
11:30 a.m.	167	Developing a data ecosystem of city-level digital twin for urban management use cases Yan, Jiayi*; Lu, Qiuchen; Li, Nan; Pitt, Michael; Lin, Xuhui	
11:45 a.m.	173	Automated mass building dilapidation assessment by triangulating panoptic learnt defects with urban footprint Huang, Zihan*; Chen, Junjie; Lu, Weisheng	
	R&S	Infrastructure Systems	
2:00 p.m.	418	Link Prediction and Navigability of Multiplex Energy Networks Kazim, Muhammad; pirim, harun*; Le, Chau; Le, Trung; Yadav, Om	
2:15 p.m.	212	Leveraging Graph Attention Network Model for Adaptive Spatial Planning of Social Infrastructure Guo, Ziyi; Wang, Yan*; Hao, Haiyan	
2:30 p.m.	540	Adaptive Sensing Reconfiguration for Cost-Effective Multi-Damage Monitoring of Civil Infrastructure Liu, Kaijian*; Xue, Ronghuan; Agha, Mohsen	Brighton Room 1
2:45 p.m.	97	Leveraging Emerging Flood Modeling Methods and Infrastructure Designs for Land-Use Analysis: A Case Study in the Southeast Texas Region Murphy, Sean*; Cheng, Chih-Shen; Passalacqua, Paola; Leite, Fernanda	
3:00 p.m.	500	Multi-source and multimodal data fusion for lifeline infrastructure resilience assessment and early warning Jin, Yunqiao; Duan, Tianle; Zhang, Hua; Li, Qingchun; Zhu, Jin*	
3:15 p.m.	586	Probabilistic Modeling of Infrastructure Reliability Frank, Timothy*; Ankney, Alexander; Miller, Jacob; Watson, Bevan; Kim, Kayla; Henigin, Garrett; Mulholland, Sean M	
	R&S	Energy Management - Buildings, Occupants, and Infrastructure	
3:45 p.m.	95	Techno-economic analysis of building energy retrofits: integrating occupant behavior impacts Shu, Lei*; Dong, Zhao	
4:00 p.m.	577	Unveiling New Insights into Building Energy-saving Behavior: A Synthesis of the Theory of Planned Behavior and Stimulus-Organism-Response Framework Gu, Zeyang; Wang, Qi*; Liu, Bingsheng; Li, Ling; Huo, Tengfei	Brighton Room 1
4:15 p.m.	158	Optimizing Building Energy Use Reduction: Integrating HVAC systems and Building Envelope through Sensitivity Analysis Xu, Chang*; Shu, Lei; Zhao, Dong	
4:30 p.m.	390	Advancing Power System Resilience: A Hybrid Empirical and Network Theory-Based Approach Using Historical Failure Data Moriyani, Muhammad Ali*; Le, Dr. Chau; Le, Dr. Trung; Yadav, Dr. Om Prakash; pirim, harun	
4:45 p.m.	63	Towards Unveiling the Interplay of Occupant Health, Comfort and Building Energy Consumption Brun, Antonin*; Awada, Mohamad; Becerik-Gerber, Burçin	
30 July Tuesday	R&S	Disaster and Climate Resilience	
9:45 a.m.	163	Development of A Gamified Training Platform for Improved Disaster Preparedness and Response in Developing Countries Thomas, Laura; Wang, Lufan*	
10:00 a.m.	590	Short-term Disaster Impacts on Transportation Infrastructures: A Review of Emerging Technologies and Approaches Dong, Beixuan; Wu, Lingzi; Li, Xinming*	Brighton Room 1
10:15 a.m.	411	Using Low-Cost Consumer Grade Drones and Automated Image Analysis to Evaluate Disaster Recovery Progress Perrucci, Daniel V*; Buitrago, German	
10:30 a.m.	41	Automating Scenario Generation for Infrastructure Resilience in the Built Environment Luo, Linchao*; Cheng, Chih-Shen; Leite, Fernanda	
	R&S	Accessibility	
11:00 a.m.	266	Estimating Spatial Accessibility of Public Chargers for Electric Vehicles Through Integrating Spatial Correlation and Dynamic Demand Factors Xie, Yuzheng*; Ji, Wenyang	
11:15 a.m.	360	Exploring Annotation Automation for Urban Landscape Accessibility Assessment Based on Simulated Neurophysiological Data Zhou, Xiaoshan*; Menassa, Carol C; Kamat, Vineet	Brighton Room 1
11:30 a.m.	53	A Shared Autonomy based Wheelchair Navigation Stack considering User Preference and Control Xu, Yifan*; Wang, Qianwei; Kamat, Vineet; Menassa, Carol C	
11:45 a.m.	142	Toward data-driven urban walkability: developing an empirical understanding of walking behavior and urban form Shoji, Kanaha*; Sonta, Andrew	
	R&S	Civil Infrastructure	
2:00 p.m.	229	Intelligent Bridge Preservation Planning Leveraging Multi-Source Knowledge He, Weilin; He, Chuanni*; Liu, Min	
2:15 p.m.	331	Evaluating Participant Gains in Federated Learning: A Case Study of Culvert Condition Prediction in Utah Mohammadi, Pouria*; Asgari, Sadegh; Rashidi, Abbas	
2:30 p.m.	336	Temporal and Spatial Dynamics of Pipeline Incident Frequencies and Causes: Implications for Risk Management Asaye, Lemlem Abebaw*; Le, Dr. Chau; Le, Dr. Trung; Yadav, Dr. Om Prakash; Le, Robert	Brighton Room 1
2:45 p.m.	454	Examining the Characteristics of Public Response to Unforeseen Cascading Fuel Shortage: A Human Mobility-based Study Rahman, Md Ashiqur; Zhu, Runhe*	
3:00 p.m.	561	Real-time chiller optimization in industrial plants based on data-driven load forecast with domain knowledge Lu, Siliang*; Liu, Pengkun	
3:15 p.m.	65	Enhancing the Safety, Sustainability, and Efficiency of Airport Operations through Data-Driven Trajectory-Based Simulation and Optimization Wang, Yanyu; Xiong, Ruoxin; Tang, Pingbo*; Wang, Yanyu	
	R&S	Green Construction	
3:45 p.m.	77	Preference Dynamics for Green Infrastructure: Exploring Preference Construction using a Bayesian Approach Hu, Mo*; Shealy, Tripp	
4:00 p.m.	102	A framework for Material Passports-based Building Information Modeling in recycling, reuse, and waste assessment Lopez Alvarez de Neyra, Paula*; Celozo, Amelia	Brighton Room 1
4:15 p.m.	403	Implementing the Use of Evolutionary Algorithm to Develop Ultimate Decision-Making Process for Green Roof Building Materials Hoshafi, Taylor N*; Wang, Xi; Short, Kathleen; Fiori, Christine	
4:30 p.m.	192	Self-Sovereign Identity of Things (SSIoT): Digital Identities for Circular Construction Supply Chains Byers, Brandon S*; Eeva, Veikko; Hall, Daniel; De Wolf, Catherine	
4:45 p.m.	62	Addressing Uncertainty in Embodied Carbon Assessment through Stochastic Analysis to Support Decision-making in Construction Projects Pozzer, Alberto E*; Rausch, Christopher; Leite, Fernanda	
31 July Wednesday	R&S	Water Resources	
9:45 a.m.	18	Computer vision-based estimation of inundation depth for urban flood monitoring Kim, Dohyun*; Lee, Sanghoon	
10:00 a.m.	202	Long term Stream flow forecasting with Machine learning algorithms: A case Study of Goulburn River, Victoria, Australia Oad, Shamotra*	Brighton Room 1
10:15 a.m.	393	Promoting Equitable Access to Transboundary Hydrology Data: A Framework for Secure Sharing and Collaborative Machine Learning to Enhance River Discharge Prediction Muhebwaa, Aggrey*; Osman, Khalid	
10:30 a.m.	193	Bridge Scour Morphology Identification based on 3D Sonar Point Cloud Data Xiong, Wen*; Huang, Zelin; Zhu, Yanjie; Cai, C.S.	
11:00 a.m.			
11:15 a.m.			
11:30 a.m.			
11:45 a.m.			

29 July Monday	HCI	Human-Building Interaction	Room
9:45 a.m.	87	Enhancing Human-Building Interaction by Integrating Wearable Physiological Sensors, Augmented Reality, and Smart IoT-enabled Sensing Devices to Improve User Indoor Environment Experience Mohammadi, Mohsen; Assaf, Ghiwa; Assaad, Rayan*; Albeaino, Gilles	Brighton Room 3
10:00 a.m.	491	LLM-Based Building Energy Management Assistants He, Tianzhi; Jazizadeh, Farrokh*	
10:15 a.m.	26	A Framework for Investigating Smart Building and Occupant Behavior through Eye-Tracking Technology Han, Jinmog; Mo, Yunjeong*	
10:30 a.m.	594	Towards Real-Time Occupant Behavior Monitoring System: A Preliminary Study on Integrating BIM, IoT Sensors, and BAS Chung, Jihoon*; Shelden, Dennis; Karlicek, Bob	
	HCI	Human Robot Collaboration	
11:00 a.m.	64	ChatGPT Based Multimodal Virtual Reality Interface to Support Collaborative Human-Robot Construction Work Park, Somn*; Menassa, Carol C; Kamat, Vineet	Brighton Room 3
11:15 a.m.	131	Gaze-enhanced and LLM-enabled System for Intuitive Human-Robot Collaboration Liang, Xiaoyun; Cruz Rivera, Juan C; Cai, Jiannan*; Li, Shuai	
11:30 a.m.	108	Advanced Semantic Understanding in Human-Robot Collaboration Using Fast-SAM You, Hengxu; Xu, Fang; Du, Eric*	
11:45 a.m.	106	Grounding Large Language Models in Robot Control: Facilitating Human-Robot Collaboration in Construction Zhao, Xiayu; Jebelli, Houtan*	
	HCI	Human Robot Collaboration	
2:00 p.m.	36	Revolutionizing Human-Robot Collaboration in Construction: An Empirical Inquiry into the Role of Advanced Multi-finger Haptic Feedback within Immersive Environments Shayesteh, Shayan; Jebelli, Houtan*	Brighton Room 3
2:15 p.m.	162	Haptic Augmentation System for Soft Object Manipulation in Construction Robot Teleoperation Uthai, Thanakon; Zhou, Tianyu; Ye, Yang; You, Hengxu; Du, Eric*	
2:30 p.m.	89	A mutual-cognitive human-robot collaboration framework to improve ergonomics in industrialized construction Fu, Yonglin*; Lu, Weisheng	
2:45 p.m.	113	Aligning Safe Construction Robot Actions with Human Preferences Tian, Mao*; Zou, Zhengbo	
3:00 p.m.	231	Scenario-based Human-robot collaboration (HRC) framework for construction safety risk management lin, peng*; Zeng, Ningshuang; Li, Qiming; Nübel, Konrad	
3:15 p.m.	541	Balancing Workload Assignment: A Parametric Approach to Standardizing Human-Robot Tasks in Industrialized Construction Alwisy, Aladdin; M. Tehrani, Behnam*	
	HCI	Human Machine Interfaces	
3:45 p.m.	358	Towards a Conceptual Model to Measure the Influence of AR-HMDs on Workers' Perception in Construction Environments Withers, Jeremy W.*; Bulbul, Tanyel	Brighton Room 3
4:00 p.m.	573	Voice-assisted AI-Chatbot for Construction: Speech-to-Text Deep Learning Transformer trained with Synthetic Datasets Jung, Yoonhwa*; Golparvar-Fard, Mani	
4:15 p.m.	88	Developing an Intelligent Wearable Haptic IoT-enabled Sensing Device Integrated with Biosensors and Augmented Reality to Improve Human-Building Interaction in Smart Cities Mohammadi, Mohsen; Assaf, Ghiwa; Assaad, Rayan*; Chang, Aichih (Jasmine); Albeaino, Gilles	
4:30 p.m.	463	Wearable Technologies in Construction: Balancing Benefits, Privacy, and Security Concerns for Systematic Integration Zhou, Wei; Esmaeili, Behzad; Hasanzadeh, Sogand*	
4:45 p.m.	598	Cognitive Impact of Augmented Reality in Teleoperation Environments AN, MINGI*; Park, Moonseo; Ahn, Changbum	
	HCI	Human Technology Interaction	
9:45 a.m.	101	Deciphering AI Decision-Making: A Generalizable Framework of Human-AI Misalignment Du, Eric*; Ye, Yang; You, Hengxu; Wu, Jiahao; Sun, Bowen	Brighton Room 3
10:00 a.m.	417	Identification of challenges and benefits of different human-technology interaction modalities for human-centered development of technology for the construction industry Halder, Srijeet*; Afsari, Kereshmeh	
10:15 a.m.	147	Impact of Four-legged Robot Proxemics on Risk Perception and Situational Awareness Among Construction Individuals Albeaino, Gilles*; Jeelani, Idris; Gheisari, Masoud; Issa, Raja R. A.	
10:30 a.m.	300	Preventing Wastes of Bridge Inspection Time and Resources through LLM Augmented Bridge Inspection Observation Behavior Analysis Liu, Pengkun; Tang, Pingbo*	
	HCI	Inferring Human Dynamics	
11:00 a.m.	45	Advancing Occupancy Prediction Using Machine Learning Techniques: Insights from the American Time Use Survey Vosoughkhosravi, Sorena*; Jafari, Amirhosein	Brighton Room 3
11:15 a.m.	346	Synthetic data simulation to assess the effects of modelling assumptions in thermal comfort data analysis and inference Favero, Matteo*; Sonta, Andrew	
11:30 a.m.	472	Deep learning model for discomfort glare detection based on occupants' facial analysis Gupta, Mohit*; Jain, Sneha; Wienold, Jan; Billington, Sarah; Andersen, Marilyne	
11:45 a.m.	180	Feasibility Study of Assessing Pedestrian Discomfort Using Behavioral Data Kim, Siyeon*; Hwang, Sungjoo	
	AI	Data-driven Methods for Built Environment	
2:00 p.m.	168	Investigating Role of Personal Factors in Shaping Responses to Active Shooter Incidents using Machine Learning Liu, Ruying*; Becerik-Gerber, Burcin; Lucas, Gale	Brighton Room 3
2:15 p.m.	312	Read the Room: Inferring Social Context Through Dyadic Interaction Recognition in Cyber-physical-social Infrastructure Systems Lin, Cheyu*; Flanigan, Katherine	
2:30 p.m.	444	GNN-based Predictive Modeling of Human Preferences in the Built Environment Doctorarastoo, Maral*; Flanigan, Katherine A.; Bergés, Mario; McComb, Christopher	
2:45 p.m.	138	Improving vocal communication on construction sites using a Fourier-CNN hybrid denoising approach peng, zhenyu*; Chi, Hung-Lin	
3:00 p.m.	221	Employing graph neural networks for construction drawing content recognition Carrara, Andrea*; Nousias, Stavros; Borrmann, André	
3:15 p.m.	122	AI-based formulas discovery for civil engineering Chen, Peiyao*; Wang, Chen; Ding, Ran; Fan, Jiansheng	
	BIM	Blockchain in Construction	
3:45 p.m.	433	Enhancing data security and screening equity in construction recruitment via Blockchain-based automatic digital resume generation with BIM and AI techniques Dong, Yaxian; Hu, Yuqing*; Zhan, Zijun; Doe, Daniel Mawunyo; Han, Zhu	
4:00 p.m.	579	Utilizing Large Language Models for Data Extraction from Construction Contracts: a Pathway to Generating Blockchain-Based Smart Contracts Moayyed, Erfan*; Anumba, Chimay	Brighton Room 3
4:15 p.m.	75	Improving Data and Process Management for Digital Twins: A Smart Contract-Driven Solution Integrating CDE and Blockchain for the Construction Industry Ye, Xuling*; Liu, Liu; König, Markus	
4:30 p.m.	345	A Work Package-based Carbon-Reduction-Incentive Payment System Using Blockchain WANG, Juan*; Li, Xiao	
4:45 p.m.	587	Enhancing User-Participatory Processes in Road Pavement Defect Management through Blockchain Integration Uhm, Miyoung; Jang, Suhyung; Kim, Yoojung; Lee, Ghang*	
	BIM	Computing in Construction Management	
9:45 a.m.	595	Ontology for automated road construction progress monitoring Patel, Tirth*; Guo, Brian; van der Walt, Jacobus Daniel; Zou, Yang	Brighton Room 3
10:00 a.m.	78	The Development of an Intelligence Search Web Application for the Construction Industry Chau, Anh D*; Uddin, S M Jamil; Accardo, Luke	
10:15 a.m.	591	Impact of Algorithmic Sophistication on Collusive Pricing in Construction Bidding Heo, Chan*; Park, Moonseo; Ahn, Changbum	
10:30 a.m.	391	A Novel Multiplex Network-based Approach to Assessing Bidding Competitiveness in Low Bid Procurement Moriyani, Muhammad Ali*; Le, Dr. Chau; pirim, harun; Le, Robert	
	Vis	Simulation in Construction	
11:00 a.m.	83	Assessing the Environmental, Social, and Economic Values of Green Infrastructure Plans using Agent-Based Modeling and Monte Carlo Simulation Jezzini, Yasser; Assaad, Rayan*; Boufadel, Michel	Brighton Room 3
11:15 a.m.	84	Multi-Objective Optimization of the Environmental, Social, and Economic Benefits of Green Infrastructure: Enhancing Decision-Making using Pareto-Optimal Solutions Jezzini, Yasser; Assaad, Rayan*; Mileva, Meglena	
11:30 a.m.	269	Comparison of two simulation platforms based on learning and application experiences of a civil engineering trainee: SDESA vs. SIMPHONY Olano, Sebastian; Naumets, Serhii SN; Lu, Ming*; Gonzales, Vicente A.	
11:45 a.m.	343	A Policy-Driven Schedule Evaluation Methodology for Resource-Constrained Hard Rock Tunnel Projects Yang, Shuhan; Kim, Jung In*	

29 July Monday	AUT	Robotic Operations	Room
9:45 a.m.	60	Hierarchical Construction Task Decomposition and Robot Imitation Learning in an Immersive Virtual Reality Environment Yu, Hongrui*; Zhu, Xingqiao; Menassa, Carol C; Kamat, Vineet	Ellwood
10:00 a.m.	107	Adaptive Intelligence for Robot Navigation Efficiency with a Deep-Reinforcement-Learning-Based Cyber-Physical System Zhao, Xiayu; Ren, Tianyu; Jebelli, Houtan*	
10:15 a.m.	161	Automatic Construction Exoskeleton Gait Data Generation using Variational Autoencoders and Optimized Features for Human-Centric Exoskeleton Power Control Soleymani, Maryam*; Bonyani, Mahdi; Wang, Chao	
10:30 a.m.	205	Machine Learning based Optimization for Modular Robotic System in Construction: A review liu, jiafei*; Ping, Yuan; Wang, Yujing; Zhao, Xiayu	
	AUT	Robot Perception	
11:00 a.m.	27	Robotic Navigation and Obstacle Avoidance System for Advancing Attic Insulation Ren, Tianyu; Jebelli, Houtan*	Ellwood
11:15 a.m.	28	Developing an Advanced Perception System for Robotic Attic Insulation Using Large Vision-Language Models and LiDAR Ren, Tianyu; Jebelli, Houtan*	
11:30 a.m.	486	Robotic Masonry Arch Construction Considering Object Recognition And Human-Robot Interaction Koliyae, Vahid*; Lin, XiangXu; Liu, Rui; Kim, Jong Hoon	
11:45 a.m.	243	Adaptive Robot Perception in Construction Environments using 4D BIM Amani, Mani; Akhavian, Reza*	
	AUT	Remote Operations	
2:00 p.m.	127	Towards Autonomous Robotics in the Lunar Surface Construction: Integrating Inverse Reinforcement Learning and Human-Environment Interaction Kim, Minguk; Ham, Youngjib*	Ellwood
2:15 p.m.	128	Teleoperation Performance and Operator Behaviors under Time-Delayed and Low-Quality Display in Lunar Construction Seo, Miran; Gupta, Samraat; Ham, Youngjib*	
2:30 p.m.	100	Neurofunctional Insights into Haptic and Visual Feedback Delays in Robot Teleoperation Zhou, Tianyu; Ye, Yang; Zhu, Qj; Du, Eric*	
2:45 p.m.	225	An Ontology-Based Framework for Goal-Oriented Natural Language Controlled Robotic Excavator Hong, Zirui*; Cai, Hubo	
3:00 p.m.	130	A Gaze-Controlled Robotic Framework for Remote Site Inspection Cruz Rivera, Juan C; Liang, Xiaoyun; Awolusi, Ibukun G; Du, Ao; Cai, Jiannan*	
3:15 p.m.	302	Online Dynamic Object Detection on Construction Sites using SLAM and Occupancy Grids Chen, Yilong*; Kim, YeSeul; Yarovi, Andrew; Kim, Seongyong; Cho, Yong	
	AUT	Robotic Mapping	
3:45 p.m.	431	LiDAR-based Traversability Estimation for Ground Robots on Construction Sites using Self-Supervised Learning Yu, Jinhee*; Saha, Swayamjit; Jayakumar, Monika; Gugssa, Mikias W; Chen, Jingdao; Wang, Jun	Ellwood
4:00 p.m.	81	Developing a Panoramic Thermography-enabled Quadruped Robotic 3D Thermal Mapping System: Moving towards Building Thermal Inspection using LiDAR-Based Digital Twins and Sensor Fusion Technologies Hu, Xi; Assaad, Rayan*	
4:15 p.m.	499	Automatic Robotic Map Generation by Integrating BIM and Project Schedule for Construction Robots Onsite Navigation Odugu, Obiora J*; Muhammad, Khan; Wang, Chao	
4:30 p.m.	422	Activity-based Space Selective Path Planning for UAVs by Leveraging 4D-BIM for Trajectory Optimization Bhadaniya, Parth K*; Gheisari, Masoud	
4:45 p.m.	335	Developing BIM-based construction quality inspection of indoor building structures using mobile ground robotic and LiDAR Lo, Ying; Cao, Yun; Zhou, Xingyang; Zhang, Cheng*; Seo, Hyungjoon; Chen, Min	
30 July Tuesday	AUT	Robotic Construction	
9:45 a.m.	94	Multi-Robot Team Composition Optimization Modeling Robotic Construction Tasks as Cooperative Board Games Pan, Zaolin; Yu, Yantao*; Xiao, Bo	Ellwood
10:00 a.m.	596	Occlusion-Aware Object Detection for Worker Monitoring Using a Reinforcement Learning Approach with a Mobile Robot Park, Jinsik*; Kim, Seong-Woo; Park, Moonseo; Ahn, Changbum	
10:15 a.m.	253	A Unified Workflow for Enhanced Efficiency in 3D Concrete Printing Using 6DoF Robotic Arm Rojas, Jorge; Hasanzadeh, Sogand*	
10:30 a.m.	177	3D Scene Reconstruction Using Robotics and LiDAR Sensor Gan, Vincent*	
	AUT	Robotic Construction	
11:00 a.m.	428	Exploring Classification Features of On-site Construction Robots Li, Fangxiao*; Leicht, Robert	Ellwood
11:15 a.m.	437	Intelligent "Wingman": Enhancing Visual Awareness in Robotic Construction Processes Xu, Jia; Dixit, Manish; Wang, Xi*	
11:30 a.m.	152	Developing Process Models for Semi-Autonomous Construction Robot Assessment Wang, Ziyi*; Leicht, Robert	
11:45 a.m.	201	Rethinking building design for an era of mass robotization: A robot-minded space planning analysis enabled by IFC-represented RoboAvatar Chen, Junjie*; Lu, Weisheng; Liu, Hengzhi	
	S&H	Exoskeleton for Worker Support	
2:00 p.m.	532	Exoskeleton Fall Risk Assessment: A Study of Peak Pressure and Foot Regions Okunola, Akinwale Samuel; Afolabi, Adedeji; Akanmu, Abosede A*; Jebelli, Houtan	Ellwood
2:15 p.m.	22	Understanding the Impact of an Exoskeleton System On Metabolic Cost of Workers During Common Repetitive Construction Tasks Ojha, Amit; Gautam, Yogesh; Zhao, Xiayu; Sharifronizi, Ali; Jebelli, Houtan*; Martin, Anne	
2:30 p.m.	529	Effect of Active Back-Support Exoskeleton on Muscular Loading During Construction Work Afolabi, Adedeji; Okunola, Akinwale Samuel; Yusuf, Anthony O; Akanmu, Abosede A*; Jebelli, Houtan	
2:45 p.m.	549	Neuro-Muscular Assessment of Exoskeleton Use: A Correlation between Physiological, Psychological, and Subjective Evaluation Measures Yusuf, Anthony O; Okunola, Akinwale Samuel; Afolabi, Adedeji; Akanmu, Abosede A*; Jebelli, Houtan	
3:00 p.m.	487	Assessment of a Passive Shoulder-Support Exoskeleton for a Simulated Overhead Construction Work Afolabi, Adedeji; Yusuf, Anthony O; Akanmu, Abosede A*	
3:15 p.m.	164	A Triangulated Study on Carpenters' Adoption of Exoskeletons in the Northwest Indiana and Chicago Area Zhang, Cheng*; Cardamone-Rayner, Raphael	
	S&H	Built Environment Well-being	
3:45 p.m.	31	Retrieval Augmented Generation (RAG) based Personalized Feedback for Construction Worker Well-being Gautam, Yogesh; Jebelli, Houtan*	Ellwood
4:00 p.m.	322	Impact of workspace environmental features on occupant well-being: A naturalistic pilot study Xu, Jiakuan*; Tavakoli, Arash; Jörke, Matthew J; Ruth, Parker; Vainio, Niklas; Schmiedmayer, Paul; Jain, Sneha; Landay, James; Billington, Sarah	
4:15 p.m.	554	Introducing a Surge-Based Conceptual Framework and Physical Layout Considerations for Addressing Respiratory Crisis Events in Hospitals Abdolahzadeh, Golnoosh*; Lather, Jennifer I	
4:30 p.m.	576	Parameter Adjustment for Mechanistic Epidemiological Models of COVID-19: Controlling for the Impact of Metro Area Crowding Thomas, Michael; liu, zhangding; Mohammadi, Neda; Taylor, John E.*	
4:45 p.m.	39	A Preliminary Investigation for Understanding Temperature's Associations with Office Workers' Psychological Well-Being: A Close Look into Anxiety, Motivation and Concentration Seyedrezaei, Mirmahdi*; Becerik-Gerber, Burcin; Roll, Shawn; Lucas, Gale	
31 July Wednesday	AI	Data-Driven Construction Management	
9:45 a.m.	315	Enhancing Construction Equipment Activity Recognition Through Hybrid CNN-Based Data Fusion Mohammadi, Abbas*; Golzad, SeyedeZahra; Rashidi, Abbas	Ellwood
10:00 a.m.	320	Factors Affecting Knowledge Reuse in Project-Based Organizations: A Perspective from Knowledge Characteristics and Project Similarity Yan, Yangzhi*; YUE, Hongzhe; WANG, Xiaowei	
10:15 a.m.	157	Dynamic Allocation of Unionized Skilled Trades in Multi-Project Reactive Scheduling Context: Uber-Inspired Application Framework Ge, Xiaoteng; Bayesteh, Ali; Lu, Ming*; Mohamed, Yasser	
10:30 a.m.	597	Understanding Laser Pointer-Guided Spatial Instruction in Collaboration with Construction Robots Lee, Chaeun*; Yoon, Sungboo; Park, Moonseo; Ahn, Changbum	
	AI	Bridge Structural Health Monitoring	
11:00 a.m.	301	Computer Vision-based Defect Detection and Evaluation for Automatic Inspection and Condition Rating of Concrete Bridges Sun, Zhe*; Li, Junbo; Wang, Guangming; Liu, Zhansheng	Ellwood
11:15 a.m.	303	Impact Analysis of Spatiotemporal Data Processing Parameters on Bridge Deformation Detection Sun, Zhe*; Liu, Pinyao; Meng, Xiaolin; Bao, Yan; Hu, Liangliang	
11:30 a.m.	305	A Digital Twin-based Framework for Intelligent Operation and Maintenance of Urban Bridges Sun, Zhe*; Liu, Shengyao; Liu, Zhansheng; Wang, Guangming; Wang, Tianlei	
11:45 a.m.	309	Human-in-the-loop Process Modeling using Formal Method for Spatiotemporal Data-based Crack Detection of Concrete Structures Sun, Zhe*; Zhao, Sihan; Bao, Yan; Meng, Xiaolin; Zhang, Dongliang	

29 July Monday	EDU	Smart Education	Room
9:45 a.m.	523	The impact of ChatGPT on construction education Nejati, Bahareh*; Roofigari-Esfahan, Nazila	
10:00 a.m.	557	Predicting moments of impasse in problem-solving using machine learning: a step to augment engineering learners' capabilities Mutis, Ivan*; Agam, Gady; Bauer, Kristina; Liu, Xuanchang; Hao, Gai	Haselton
10:15 a.m.	111	The Rise of Artificial Intelligence in Construction Education: Insights from a Survey of US Faculty Cheng, Jiun-Yao*; Devkota, Ajit; Gheisari, Masoud; Jeelani, Idris; Franz, Bryan	
10:30 a.m.	606	Teaching the Impact of Coordination on Construction Productivity: Game-based approach using Minecraft Yeoh, Justin KW*; Tan, Jing Qun	
	EDU	Human Factors	
11:00 a.m.	15	Demographics in Augmented Reality Research: An Exploratory Study Han, Bing; Celozza, Amelia*	
11:15 a.m.	480	Automaticity Diagnosis in Construction: A Longitudinal Study Using Attentional Measures Olabode, Oluwaseun; Onuchukwu, Sylvester; Esmaeili, Behzad*; Helle, Sebastien	Haselton
11:30 a.m.	267	Investigating Key Competencies for 3D Concrete Printing in Affordable Housing babajaniniashirvani, vida*; Afsari, Kereshmeh; McCoy, Andrew	
11:45 a.m.	125	Studying Students' Collaborative Problem-Solving Behaviors in Online Construction Site Visits Sun, Yuan*; Bhadaniya, Parth K; Eiris, Ricardo; Gheisari, Masoud	
	EDU	Training Through Virtual Reality	
2:00 p.m.	520	Integration of Virtual Reality (VR) based active-learning modules on enhancing construction management learning in higher education institutions Naganathan, Hariharan*; Rahman, Rahimi A.	
2:15 p.m.	20	Advancing Construction Robotics Learning Through Virtual Reality: A User Experience and Usability Study Ojha, Amit; Zhang, Yuming; Shayesteh, Shayan; Sharifronizi, Ali; Jebelli, Houtan*; Akanmu, Abosede A	
2:30 p.m.	24	Evolving Construction Robotics Training: Embracing Virtual Reality for Effective Wearable Robot Use in Construction Zhang, Yuming; Shayesteh, Shayan; Jebelli, Houtan*	Haselton
2:45 p.m.	280	Developing Virtual Reality Workflow for Panelized Construction Assembly Training Kanthhepan, Yogeeswaran*; Chen, Qian; Garcia de Soto, Borja; Liu, Zheng	
3:00 p.m.	604	Focus-Four Construction Safety Hazards Decision Making and Learning Through Virtual Reality Game Snosi, Omar S; Kisi, Krishna*	
3:15 p.m.	427	Designing Augmented Information Strategies for Immersive Procedural Learning Wang, Xiaohui*; Messner, John	
	AUT	Drone Operations & Applications	
3:45 p.m.	103	Decoding AI Valuation in Drone Controls Sun, Bowen; Wu, Jiahao; Du, Eric*	
4:00 p.m.	104	Dynamic Importance Weights in Reinforcement Learning for Drone Swarms in Search and Rescue Wu, Jiahao; Sun, Bowen; Du, Eric*	
4:15 p.m.	133	Quantitative Assessment of Drone Presence on Worker Safety in Construction Environments Han, Wei; Xu, Liqun; Dai, Fei; Loh, Wei-Yin; Wang, Liangzhu (Leon); Zhu, Zhenhua*	Haselton
4:30 p.m.	432	Interplay of Drones, Construction Tasks, and Worker Stress in Future Construction Environment CHANG, WOEI-CHYI; Pooladvand, Shiva; Esmaeili, Behzad; Hasanzadeh, Sogand*	
4:45 p.m.	38	Establishing Safe Human-Drone Communication for General Construction Workers Zhu, Zixian*; Jeelani, Idris; Gheisari, Masoud	
30 July Tuesday	VIS	Simulated Processes	
9:45 a.m.	98	Integrating Pedestrian Simulation into Early Building Design: A Deep Learning Approach for Trajectory Prediction Berggold, Patrick*; Nousias, Stavros; Borrmann, André	
10:00 a.m.	54	Symbolic Dynamics Coarse-Graining Approach for Analysing Traffic Flow Dynamics in Complex Road Networks Under Flooding Lin, Xuhui*; Lu, Qiuchen; An, Yi; Chen, Nanjiang; Broyd, Tim; Pitt, Michael	Haselton
10:15 a.m.	233	Enhancing the storage assignment process of deconstructed equipment for reuse with agent-based simulation Suh, Seungah*; Faust, Kasey; Rausch, Christopher	
10:30 a.m.	459	A Discrete Event Simulation Framework for Lunar Launch and Landing Pad Construction Okonkwo, Chinedu; Awolusi, Ibukun G*; Shafique, Sazzad; Ximenes, Sam; Gorin, Barney; Redfield, Joe ; Petersen, Codie	
	VIS	Visualization Innovation	
11:00 a.m.	490	Empowering AEC Innovation with Computational Co-Design on Omniverse Liu, Rui*; Koliyae, Vahid; Raisali, Farimah	
11:15 a.m.	289	Physics-Based Earthquake Scene Simulation in Virtual Reality Zhong, Kuanshi; Han, Bing*	Haselton
11:30 a.m.	421	Exploring the Feasibility of Adopting Virtual Reality as an Alternative Risk Communication Method for Natural Hazards Sanni, Tolulope; Kuang, Biao ; Chen, Jianli; Shao, Wanyun; Liu, Mingxi; Liu, Jun; Shi, Yangming*	
11:45 a.m.	439	Design and evaluation of visualization techniques to facilitate urban façade inspection Shi, Zhuoya*; Ergan, Semiha	
	VIS	Modular & Industrialized Construction	
2:00 p.m.	183	Generative Design Effectiveness-Constructability Tradeoff of Panelized Prefabricated Buildings Said, Hisham*; Parikh, Stuti	
2:15 p.m.	154	Product Complexity Analysis of Hybrid Panelized-Volumetric Prefabricated Buildings Cao, Jianpeng*; Said, Hisham; Hall, Daniel	
2:30 p.m.	371	Simulation-based lot size comparison for production planning in lean modular integrated construction manufacturing Yang, Zhongze*; Lu, Weisheng	Haselton
2:45 p.m.	370	An Optimization-based Trajectory Planning Method for Automated Module Lifting in Modular Integrated Construction ZHANG, QiQi*; PAN, Wei; HUANG, Ruopan; Zhang, Zhiqian	
3:00 p.m.	129	Enhancing Modular Construction Supply Chain Resilience by Disruption-Aware Buffer Zone Planning DONG, Zhiming*; Lu, Weisheng	
3:15 p.m.	363	Digitalizing volumetric module transport process for modular integrated construction ZHENG, Zhenjie*; Pan, Wei	
	VIS	Modular & Industrialized Construction	
3:45 p.m.	200	Towards more stable and flexible configuration: Code agent for floorplan generation in modular buildings Wei, Yinyi*; Li, Xiao; Wu, Chengke	
4:00 p.m.	242	Knowledge Embedded Human-Machine Adaptation for Supporting Efficient Operations of Building Manufacturing Systems Xiong, Ruoxin; Dong, Miaoqi; Jing, Haoming; Nakahira, Yorie; Tang, Pingbo*	
4:15 p.m.	134	Machine Learning-based Ultra-wideband Non-line-of-sight Identification for Crane-lift Positioning in Modular Integrated Construction Zhu, Aimin*; Pan, Wei; Zhang, Zhiqian; ZHANG, QiQi	Haselton
4:30 p.m.	384	Enhancing Quality Control in Modular Integrated Construction: Integrating Point Cloud Data with Scan-vs-BIM Technology Sun, Qianchen*; Li, Xiao; Shen, Geoffrey Qiping	
4:45 p.m.	377	Explainable Production Time Prediction of Customized Building Components with Imbalanced Production Histories Dong, Miaoqi; Xiong, Ruoxin; Tang, Pingbo*; Akinci, Burcu	
31 July Wednesday	VIS	Innovations in Structures	
9:45 a.m.	272	Accelerating Structural Topology Optimization for Subtractive Building Materials Reuse Zhang, Jing*; Haas, Carl	
10:00 a.m.	156	Matching Reused Elements to Structural Designs for Steel Reuse Kookalani, Soheila*; Parn, Erika; Brilakis, Ioannis; Luo, Peihang; Alavi, Hamidreza; WANG, MUDAN	Haselton
10:15 a.m.	43	Production System Configurator for Mass Timber Supply and Construction V. Coelho, Rafael*; Tommelein, Iris D.; Marshall, Eric; Anderson, Aaron	
10:30 a.m.	241	A simple tying method for overlapping finite element meshes in design support systems Hofmeyer, Herm*; Van der Wal, Sanne; Boonstra, Sjonnie; Pauwels, Pieter	
	EDU	Human Factors in Training	
11:00 a.m.	483	Gender Differences Assessment in Tower Crane Teleoperation: Experimental Design Kazemi, Mohammad Hossein; Wu, Yi; Miller, Scarlett R.; Hu, Yuqing*	
11:15 a.m.	448	Exploring Individual Variances in Learning Process During Immersive Safety Training For Construction: A Comprehensive Review of VR/AR-Based Safety Training Das, Niloy; Lee, Jeehee*; Kim, Namgyun	Haselton
11:30 a.m.	235	Novel Virtual Reality Interactive System for Training Construction Workers to Mitigate Fall Hazards Alzarrad, Ammar*; Chowdhury, Sudipta; Al-Bayati, Ahmed Jalil	
11:45 a.m.			

AI	AI/Data driven approaches for Infrastructure Operation
BIM	BIM and Digital Twins
S&H	Safety & Health
R&S	Resilient & Sustainable Infrastructures
HCI	Human-centered Innovation
AUT	Robotics & Automation
EDU	Training & Pedagogy
VIS	Visualization, Simulation & Process Modeling
*	Cross-track

Short paper ID