

Construction Research Congress 2026

**Construction Education; Workforce
Development; and Health, Safety, and
Wellbeing**

**Selected Papers from the Construction Research Congress
2026**

**San Antonio, Texas, USA
18-21 March 2026**

Volume 1 of 2

Editors:

**Chuma Nnaji
Jiannan Cai
Ibukun Gabriel Awolusi
Kaushik Bhattacharjee**

ISBN: 979-8-3313-4005-6

Printed from e-media with permission by:

Curran Associates, Inc.
57 Morehouse Lane
Red Hook, NY 12571



Some format issues inherent in the e-media version may also appear in this print version.

Copyright© (2026) by American Society of Civil Engineers
All rights reserved.

Printed with permission by Curran Associates, Inc. (2026)

For permission requests, please contact American Society of Civil Engineers
at the address below.

American Society of Civil Engineers
1801 Alexander Bell Drive
Reston, VA 20191
USA

Phone: (800) 548-2723
Fax: (703) 295-6333

www.asce.org

Additional copies of this publication are available from:

Curran Associates, Inc.
57 Morehouse Lane
Red Hook, NY 12571 USA
Phone: 845-758-0400
Fax: 845-758-2633
Email: curran@proceedings.com
Web: www.proceedings.com

Contents

Behavior, Perception, and Physiological Responses to AI-Generated Safety Training Materials	1
Yiyang Shu, Farouq Sammour, Zhenyu Zhang, Xi Wang, and Mo Hu	
Spatial Ability in Construction: A Systematic Literature Review	12
Foysal Ahmed and Ricardo Eiris	
AI-Driven Interactive Storytelling for AEC Education: A Twine-Based Framework	23
Faizan Shafique	
Integrating AI into Construction Management Education: Developing Recommendations to Bridge the Knowledge Gap	28
Mahya Sam, Claudia Calle Müller, Seyedeh Elham Kamali, and Mohamed Elzomor	
Ten Years of Construction Education: Tracking Growth, Trends, and Opportunities across US Construction Programs	38
Ebrahim Karan, Sadegh Asgari, Farzane Asgari, and Sara Asgari	
Enhancing Transportation Construction Plan Reading through BIM: A Pilot Study.....	48
Ri Na, Ryan Webber, Dyala Aljagoub, Xi Wang, and Tianjiao Zhao	
Information Technologies in Construction Engineering and Management Education to Improve Visualization and Communication	59
Amelia Celoza, Christopher Rausch, and Bing Han	
Competition-Based Learning: Integrating a National Student Competition to Enhance Project-Based Construction Management Education—A Pilot Study	67
Mohsen Garshasby, Saeed Rokooei, Mohsen Goodarzi, and Rizwan Farooqui	
Integrating Safety Culture into Architecture, Engineering, and Construction (AEC) Curricula: Barriers, Drivers, and Strategies	77
Jaykumar Maheshbhai Mistry, Zia Ud Din, and G. Edward Gibson Jr.	
Hydrogen Fuel Cell Electric Vehicle Workforce Development in Public Transit: A Literature Review	87
Jaskaran Preet Singh, Manideep Tummalapudi, Shantanu Kumar, Vijayeta Malla, and Tanvi Tayal	

Research about Research: Use of Focus Group Sessions as a Methodological Approach to Utility Investigation Studies.....	97
Cecilia A. Anakor, Haidy Ghali, Sudip Acharya, Jennifer Shane, Roy Sturgill, Chris Harper, and Dan Tran	
Similarities and Differences in Patterns between Augmented Reality and Virtual Reality in AECO Education: A Systematic Review of Literature	108
Luísa L. F. Guilherme, Steven K. Ayer, and Amelia Celoza	
Developing a Cybersecurity Education Framework to Prepare the Future Construction Workforce for Digital Resilience.....	118
Adedeji Afolabi and Olugbenro Ogunrinde	
Neuro-Physiological Sensing Education for Improving Undergraduate Construction	128
Adedeji Afolabi and Olugbenro Ogunrinde	
Examining the Influence of Immersive Technologies on Building Design Error Identification among Construction Students.....	139
Bobola I. Orelaja, Adedeji Afolabi, Omoyemi A. Ogunsusi, and Olugbenro Ogunrinde	
Transforming Construction Education through Immersive Learning: Insights from Students in a Developing Country	149
Omoyemi A. Ogunsusi, Adedeji Afolabi, Bobola I. Orelaja, and Olugbenro Ogunrinde	
Usability and Implementation Insights of Synchronous, Real-Time Drone-Based Virtual Field Trips in Construction Education	159
Ajit Devkota, Ricardo Eiris, and Masoud Gheisari	
A Synthesis Study on the Integration of Artificial Intelligence in Construction Safety Education and Training	169
Hongyue Wu	
Online Social Spaces for Architecture, Engineering, and Construction (AEC) Education: A Systematic Review	180
Bruno Fuentes Navarro, Didong Xu, Nana Kwabena Asamoah Antwi, Gilles Albeaino, and Charles Gurganus	
Challenges and Opportunities in Construction Automation: Insights from Industry Professionals	191
Sanjeev Adhikari, Edson Bispo Parra, and Da Hu	
Evaluating an AI Feedback Tool for LEED Writing in a Construction Capstone.....	200
Zhenlin Yang, Gabriel Castelblanco, and Laura Cruz-Castro	

Industry Professionals’ Perspectives of Emerging Technologies Integration into Construction Education Curriculum—A Texas Case Study	209
Tyler Rider, Olugbenro Ogunrinde, Jeff Cunion, Billy Gray, and Isabella-Kharissa Pena	
Which Did a Better Job? A Pilot Comparison of Instructors’ Perceptions on Different Large Language Models Responses in Construction Education	220
Yanchao Zheng, Luciana Debs, and Deniz Besiktepe	
From Country Roads to the Concrete Jungle: Public Workforce Resiliency Issues in Rural and Urban Areas	230
Kristal Metro, Susan M. Bogus, and Christofer Harper	
Now Hiring: A Study of Job Advertisement Preferences for Entry-Level Employees	240
Kristal Metro, Christofer Harper, and Susan M. Bogus	
Reframing Workforce Retention in the Rural Wastewater Sector: A Contextualized PLS-SEM Framework	250
Michel Kordahi and Amal Bakchan	
Integrating Technology and Traditional Approaches to Enhance Construction Students’ Skills and Competency: A Case Study from Two Institutions	261
Olugbenro Ogunrinde, Tulio Sulbaran, Rachel Mosier, and Jared Burgoon	
Construction Industry Adoption of Emerging Technologies and Assessment of Graduate Readiness	271
Saeed Rokooei and Rizwan Farooqui	
Agility of Construction Curricula in Adopting Emerging Technologies.....	281
Saeed Rokooei and Rizwan Farooqui	
Breaking Barriers: Examining Women’s Retention and Advancement in the AEC Sector	291
Heba Al Kailani, Yajie Liu, Minerva Bonilla, and Eugenio Pellicer	
The Importance of Incorporating Collaborative Online International Learning (COIL) in Construction Management Education	302
Claudia Calle Müller, Mais Kayyali, Patrizia Santaniello, Natalia Arango Nader, and Mohamed ElZomor	
Digital Technologies for Construction Education: Trends across Pedagogical Functions	313
Xiaoyu Hou, Yifan Wang, Bo Xiao, Hexu Liu, and Shane T. Mueller	

Human-Centric View of BIM: Understanding BIM User Job Satisfaction in the AEC Industry	324
Sharareh Mirzaei, Susan M. Bogus, and Stephanie Bunt	
Leveraging Generative AI for Asynchronous Learning in Construction Education: A Pilot Case Study on BIM-Based Quantity Takeoff	335
Shadi Alathamneh and Wesley Collins	
Investigations on the Perceptions of Construction Professionals Regarding Technology Adoption and Training Practices: A Pilot Study	345
Xi Wang, Kathleen Short, Tianjiao Zhao, and Lufan Wang	
Teaching in Isolation: Sentiment Analysis of a Civil Engineering BIM Course during the COVID-19 Online Semester.....	355
Muhammad Umer and Rizwan U. Farooqui	
Efficacy of Immersive Robotics Learning in Construction Education: Investigating Demographic Influences on Student Interaction with Virtual Robots	366
Amit Ojha, Anusha KC, Yogesh Gautam, Shayan Shayesteh, Houtan Jebelli, and Abiola Akanmu	
An Online Collaborative Virtual Field Trip for Construction Techniques: Development and Usability Evaluation.....	376
Parth Bhadaniya, Ricardo Eiris, and Masoud Gheisari	
AIStory: A Usability Study of a Storytelling-Based AI Literacy Module for Construction Students	386
Jiun-Yao Cheng, Masoud Gheisari, and Idris Jeelani	
Understanding Gender Bias in Construction: A Survey of Role Assignment, Safety Performance, and Wage Perceptions	396
Heather Stockman, Mostafa Namian, Samuel Olatunbosun, and Abdullah Alsharef	
Attracting and Retaining Skilled Labor in Canadian Residential Construction.....	406
Lahiru P. Silva, Piya Kaluthantirige, Kasun N. Hewage, Janaka Y. Ruwanpura, and Sandun Wanniarachchi	
Students' Perceptions of Artificial Intelligence in an Online Construction Management Course.....	417
Fan Zhang	
The State of the Art in Construction Education in the Age of Artificial Intelligence: A Comparative Study of the United States and China.....	426
Yiwen Cheng and Fujia Lyu	

A Review of Informal Learning Practices in the Architecture, Engineering, and Construction Domain.....	437
Jingyuan Shen and Jing Wen	
Assessing Construction Students' Readiness for Technology-Driven Sustainable Construction	447
Jingyuan Shen, Jing Wen, Sanjeev Adhikari, and Ebenezer Fanijo	
Challenges in Retrofitting Aging Mechanical Systems from Heat and Frost Insulators' Perspectives.....	458
Parisa Salehi, Behzad Esmaeili, Sogand Hasanzadeh, and Aslihan Karatas	
Developing Core Competencies for Air Force Civil Engineer Asset Management.....	469
David A. Rochester, Benjamin Knost, and Daniel J. Weeks	
Engineering Students' Acceptance or Resistance to Critical Consciousness Pedagogy in Class.....	480
Joshua Mensah-Larkai and Cristina Poleacovski	
From Curriculum to Capstone: Advancing Career Readiness in Construction Engineering.....	490
Brandon M. Fulk and Sogand Hasanzadeh	
Addressing Mental Health Challenges in Construction Management Education by Exploring Stressors and Support Needs among Senior Students.....	501
Raissa Marchiori, Siyuan Song, and Zia Din	
Artificial Intelligence and the Construction Workforce: A Framework for Assessing Automation Potential and Future Skill Needs	512
Sungwoo Kim, Vineeth Dharmapalan, Ziyu Jin, and John Gambatese	
The Impact of Experiential Learning on Adolescent Girls' Perceptions of Construction: Lessons from a Week-Long Building Camp.....	523
Stacy Kolegraff and Kelsey A. Ginori	
A Socioeconomic Perspective of Why High School Seniors Are Abandoning STEM	534
Andrea Spool-White and Yuhuan Jiang	
System Usability and Affective Assessment of a Virtual Learning Environment for Ergonomic Risk Identification and Exoskeleton Use in Construction Tasks.....	542
Joshua Nsiah Addo Ofori, Yuhui Zhao, Thad Starner, Ethan Kimmel, Omobolanle Ogunseiju, and Mariam Tomori	

Resilient Construction Contractor Capacity for a Competitive Advantage: Consultant and Client Perspective	553
Richard John Ndhlovu, Innocent Musonda, Nelson Sizwe Madonsela, and Adetayo Onososen	
Empowering Construction Workers to Prevent and Control Ergonomic Risks with Exoskeletons	562
Mariam A. Tomori, Joshua N. A. Ofori, Omobolanle R. Ogunseiju, Yong K. Cho, and Nyla Mansha	
A Comparative Evaluation of Mental Workload Associated with Artificial Intelligence-Driven Sensor Data Analytics in Construction	573
Mohammad Khalid, Abiola Adegoke, Abiola Akanmu, Ibukun Awolusi, and Homero Murzi	
Assessing the Efficacy of Visual Programming in Developing Machine Learning Skills among Construction Engineering Students.....	583
Mohammad Khalid, Abiola Adegoke, Abiola Akanmu, Homero Murzi, and Ibukun Awolusi	
Analyzing the Research Landscape of Construction Teamwork and Crew Dynamics with Topic Modeling.....	593
Heung Jin Oh, Soowon Chang, Siyeon Kim, and Juhyeon Bae	
Is Digital Construction Technology Helping or Hurting? Investigating the Impacts of Digital Learning on Student Mindset and Skillset in Construction Education	603
Rizwan U. Farooqui and Saeed Rokooei	
The Impact of Job Resources on Construction Workers' Safety Performance: The Mediating Role of Psychological Distress.....	613
Prosper Gbiengu, Muhammad Khan, and Chukwuma Nnaji	
Comparative Evaluation of Heat Stress Prevention Training on Knowledge Improvement in the Current and Future Construction Workforce	624
Mehdi Torbat Esfahani, Ibukun Awolusi, and Yilmaz Hatipkarasulu	
LEGO Cobot: The Design of an Affordable Research and Teaching Platform to Foster Next Generation Construction Students' Skills in Artificial Intelligence and Robotics	635
Sisi Han, Yuhan Jiang, and Andrea Spool-White	
Evaluating Cognitive Load and Usability of a VR-Based Construction Site Simulation for Learners across Disciplines.....	645
Yewande S. Abraham, Oluwatobiloba I. Olanipekun, Dileep K. Sharma, JiaXu Chen, Chukwuma Nnaji, and Abiola A. Akanmu	

Essential Hands-On Skills for Construction Management Students: Insights from Industry Professionals in Mississippi	655
Mohsen Foroughi-Sabzevar and Masoud Gheisari	
Building the Future: Educational Framework for Robotics in Industrialized Construction	665
Feral Foskett, Aladdin Alwisy, Chao Xie, and Dean Muca	
Exploring Cognitive Load Markers in Construction Fatality Reports: An LLM-Based Approach.....	678
Elvis Adjei, Ziyu Jin, and John Gambatese	
An Investigation of Heavy Equipment Proximity Alert Technology for Last-Minute Changes on Construction Sites.....	689
Wei-Hsuen Lee, John Gambatese, Matthew R. Hallowell, and Chukwuma Nnaji	
Influence of Contract Management Strategies on the Safety Performance of Construction Projects	700
Kaushik Bhattacharjee, Arpith Pradeep, Dhairya Chavda, Murali Jagannathan, and Nikhil Bugalia	
Ageism in the Construction Workforce: Strategies for an Age-Inclusive Industry	711
Younghan Edwin Jung and M. Myung Jeong	
Memory-Augmented Agentic AI for Personalized Construction Health Monitoring.....	721
Yogesh Gautam, Ali Sharifironizi, Amit Ojha, Atefeh Mollabagher, Parinaz Naghizadeh, John Messner, and Houtan Jebelli	
Flexible, Wearable EDA Sensors with Edge AI for Real-Time Cognitive Load Monitoring in Construction	731
Yogesh Gautam and Houtan Jebelli	
Visual Attention in Pre-Evacuation: Interplay of Fear, Anchoring, and Social Cues in Decision Making.....	741
Johnson Adetooto, Seonho Woo, Myounghoon Jeon, Young-Jun Son, and Behzad Esmaeili	
A Soft Microfluidic Sodium Sensor for Sweat-Sodium Analysis in Occupational Heat Stress	752
Yogesh Gautam and Houtan Jebelli	
Bilingual Overexertion-Risk Training for Roadway Construction Workers: A Mixed-Methods Development and Feasibility Study	762
Heba Al-Kailani, Kaushik Bhattacharjee, Minerva Bonilla, and Chukwuma Nnaji	

Relationship between Attention and Recognition Accuracy for Construction Signs: An Eye-Tracking Study	773
Minghao Dong, Chiu Yu-Chin, Mark Lehto, and Behzad Esmaeili	
A Wellness Index for Construction Manufacturing Workers: Development and Pilot Evaluation	784
Sena Assaf, Marco Alex Leon Huaman, Mohamed Assaf, Ahmed Bouferguene, and Mohamed Al-Hussein	
Evaluating Construction Safety Resilience through Pre-Armor Strategies: Industry Professionals' Perspectives.....	795
Omar Kartam, John Gambatese, and Mohammed Azeez	
Impacts of Air Pollution on Construction Workers' Situational Awareness and Cognitive Performance	805
Shangyi Lei, Suliman Rashid, Nahid Abbasian, Shiva Pooladvand, and Elham Fini	
The Interplay of Task and Social Stressors on Construction Workers' Risk-Taking Behavior: An Augmented Virtuality Study.....	815
Shangyi Lei, Shiva Pooladvand, and Sogand Hasanzadeh	
Integrating VR and BIM into Job Hazard Analysis to Improve Task Understanding and Safety in Construction	826
Anirudva Bhowmik, Zia Ud Din, Lu Gao, Kinam Kim, Ahmed Senouci, and Namho Cho	
Enhancing Construction Safety: The Role of AI and Robotics in Risk Mitigation	836
Sanjeev Adhikari and Sebastian Archer	
Multimodal Psychophysiological Analysis for Team Situation Awareness in Simulated Construction Environments.....	846
Ching-Yu Cheng, Liuchuan Yu, Lap-Fai Yu, and Behzad Esmaeili	
Analyzing Factors Influencing Work Zone Crash Severity in Texas across Different Weather Conditions	857
Chi Tian, Jieyi Bao, and Rupini RV	
Assessment of Mental Well-Being Programs in the Construction Industry	867
Evan Olszak, Shantanu Kumar, and Mohammed Hashem Mehany	
Assessing Perceived Fall Risk Using a Wearable Inertial Measurement Unit and Electrodermal Activity Sensor during Daily Walking in the Built Environment	877
John J. Sohn, Hoonyong Lee, JuHyeon Bae, Jesse V. Jacobs, and SangHyun Lee	

Construction Work Zone Safety: Identifying Critical Crash Factors and Patterns in Florida	888
Ann Ubaka, Abdallah Alsammani, Mohamed Khalafalla, and Doreen Kobelo Regalado	
Analyzing Extreme Weather Impacts on Construction Safety Using Large Language Models	899
Zhenhui Ou, Wenlin Li, and Siyuan Song	
Early Warning of High-Risk Worker Behaviors on Construction Sites via Pose-Aware Computer Vision Models	908
Wenlin Li, Zhenhui Ou, and Siyuan Song	
Leveraging LLM-as-a-Judge for Automatic Evaluation in Construction Safety	918
Wenlin Li, Zhenhui Ou, and Siyuan Song	
Analyzing Dynamic Shifts in Fatality Risk Factors in Transportation Construction	928
Mariam Elazhary and Islam H. El-adaway	
Analyzing Driver Behavioral and Attitudinal Characteristics and Their Implications for Work Zone Safety	939
Bahaa Chammout and Islam H. El-adaway	
Empowering Construction Workers to Manage Site Safety Risks Proactively through Wearable Biosensing- and Social Norm-Based Intervention.....	949
JuHyeon Bae, Jesse V. Jacobs, and SangHyun Lee	
Personalized, Non-Invasive Core Body Temperature Monitoring for Construction Workers via Wearable Sensing and Deep Learning	960
JuHyeon Bae, John Jiu Sohn, Jesse V. Jacobs, and SangHyun Lee	
Intentional Unsafe Behaviors in Construction: A Systematic Review of Influencing Factors and Opportunities for Immersive Technologies	970
Mehran Mahmoudi Motahar, Steven K. Ayer, Siddharth Bhandari, and Matthew R. Hallowell	
Exploring Human-Drone Communication in Real-World Indoor Construction Environments.....	980
Zixian Zhu, Ajit Devkota, Idris Jeelani, and Masoud Gheisari	
Learning Outcomes and Experiences with AI-Generated Construction Safety Podcasts	989
Farouq Sammour, Yiyang Shu, Mo Hu, Xi Wang, and Zhenyu Zhang	

Thermal Ergonomics in Occupational Settings: Challenges, Technologies, and Human-Centered Solutions.....	999
Zijian Zhu, Wei Yin, and Yanxiao Feng	
Company Management’s Awareness Level Improves Construction Workers’ Mental Health and Well-Being.....	1008
Md. Tauhidul Karim, Shafayet Ahmed, and Md. Nayeem Hoque	
Impacts of Psychosocial Stressors on Construction Workers’ Mental Health	1018
Md. Tauhidul Karim, Shafayet Ahmed, and Md. Nayeem Hoque	
Evaluating Mental Stress in Multi-Level Human-Robot Interaction during Construction Tasks	1028
Yue Zhao, Jun Wang, and Junfeng Ma	
Beyond Supervision: The Power of Role Clarity in Construction Safety Climate	1039
Arnaldo Bayona, Elif Deniz Oguz Erkal, and Matthew R. Hallowell	
AI-Driven Insights into Urban Construction: Enhancing Health and Well-Being across US Cities.....	1049
Siavash Ghorbany, Ming Hu, Siyuan Yao, Matthew Sisk, Chaoli Wang, Kai Zhang, and Quynh Nguyen	
Can Workers Detect Safety-Critical Sounds under Task Load?	1060
Abayomi A. Oladejo, Lynneatte Quenin, Sidharth Bhandari, Matthew Morris, Leaf Van Boven, and Matthew R. Hallowell	
Construction Workforce Talent: A Case Study of Non-Cognitive Factors—Sense of Belonging.....	1070
Tulio Sulbaran, Jared Burgoon, Olugbenro Ogunrinde, and Rachel Mosier	
A Repeated Cross-Sectional Study of Construction Faculty Research Requirements.....	1079
Tulio Sulbaran, Rachel Mosier, and Olugbenro Ogunrinde	
How Close Is Too Close? Drone Proxemics in Human-Drone Interaction for Construction—A Review.....	1089
Yibo Qiang and Behzad Esmaeili	
Exploring OSHA Construction Accident Records with Multimodal AI Models	1100
Islem Sahraoui, Tejaswini Sanjay Katale, Gowtham Reddy Gudla, Lu Gao, Kinam Kim, Zia Din, and Ahmed Senouci	
Differences in SIF Risk Perceptions among Construction Experts	1110
Frank M. Benin, Siddharth Bhandari, and Matthew R. Hallowell	

The Effect of Cold Stress in Construction Workplaces: Systematic Review	1121
Chandra Vikas Thipirishetty and Sogand Hasanzadeh	
Silica Dust in Construction: Uncovering Common Myths and Misconceptions among Workers	1131
Samuel Olatunbosun, Mostafa Namian, Mohammadsoroush Tafazzoli, and Amin Akhnoukh	
Gender Differences in Construction Safety Performance: A Comparative Study of Jobsite Hazard Analysis and Perceived Risk.....	1142
Mostafa Namian, Samuel Olatunbosun, Zahra Ghorbani, and Alex Albert	
Evaluating the Impact of Warning Signals on Drivers' Attention and Reaction: A Driving Simulation Study of Flagging Technologies	1152
Wei Zhou, Jing Zang, Chia-Ling Liu, Elizabeth Saunders, Brandon Pitts, Behzad Esmaeili, and Sogand Hasanzadeh	
Intervention and Prevention Strategies of Burnout for Enhancing the Well-Being of Young Construction Professionals.....	1163
Haiyan S. Xie, Nolan McMillan, and Runjia Mao	
Systematic Review of Literature on Safety Risks in Off-Site Construction	1174
Qichang Dai and John Gambatese	
Vehicle Speed Estimation Using a Roadside Camera and 3D Scene Reconstruction for Work Zone Intrusion Prediction	1184
Janvita Reddy, Nitai Premal Shah, Yalong Pi, Jaehoon Lee, and Namgyun Kim	
Environmental and Temporal Factors Influencing Intrusion Risks in Work Zone Activity Areas	1195
Md. Nayeem Hoque, Kaushik Bhattacharjee, Umme Sabiha Onnesha, and Chukwuma Nnaji	
YouTube versus ChatGPT: Evaluating Digital Tools for Improving Construction Hazard Prevention through Design (CHPtD).....	1205
Nishi Chaudhary, Anto Ovid, Mahzabin Tamanna, S. M. Jamil Uddin, and Alex Albert	
Weather Effects on Construction Worker Safety in the United States.....	1216
Xiao Liang, Hongtao Dang, and Waheed Lawal	
Safety Demonstrations as a Catalyst for Improving Construction Safety Culture	1226
Stacy Kolegraff, Kylie Parrotta, Paityn McGarvey, and June McClure	

Task- and Site-Specific Ergonomic Intervention in Construction: Applying Scene-Aware Motion Synthesis.....	1236
Leyang Wen, Gunwoo Yong, and SangHyun Lee	
Automated Physical Demand Analysis Using Artificial Intelligence	1247
Chao Fan, Qipei Mei, and Xinming Li	
Automated Detection of PPE Compliance Using YOLOv11 Variants in Construction Environments.....	1257
Shahid Ali, Ammar Alzarrad, Sudipta Chowdhury, and Husnu S. Narman	
Real-Time Infrared Thermography-Based Heat Stress Detection with Advanced Vision.....	1267
Wenlin Li, Zhenhui Ou, and Siyuan Song	
Effectiveness of Work Zone Intrusion Technologies: Insights from Stakeholder Perceptions.....	1278
Kaushik Bhattacharjee, Vineeth Dharmapalan, Joseph Louis, Chukwuma Nnaji, and John Gambatese	
Upgrading Head Protection: Supporting the Transition from Type I Hard Hats to Type II Safety Helmets.....	1289
Anto Ovid, Alex Albert, Sang D. Choi, and Mostafa Namian	
A Pilot Study on Temporal Variation in Construction Workers' Hazard Recognition	1299
Muhammad Talha Nadeem, Muhammad Khan, Mostafa Namian, and Chukwuma Nnaji	
Contextual Ergonomic Risk Amplification (C-ERA) Framework: A Novel Approach for Height-Exposed Construction Tasks.....	1309
Roy Lan and Ibukun Awolusi	
Pose Estimation for Ergonomic Risk Assessment in Steel Connection Tasks.....	1319
Tolulope Oyeyipo, Roy Lan, Ibukun Awolusi, Arturo Schultz, Debra Laefer, and Salam Al-Sabah	
An Analysis of Work Zone Safety Incidents and Preventive Measures in Southern California	1329
Asif Rahman, Siddharth Banerjee, and Ghada M. Gad	
Construction Workers' Perceptions of Heat Stress Interventions: A Comparative Analysis and the Influence of Demographic Factors.....	1340
Mehdi Torbat Esfahani, Tolulope Oyeyipo, Ibukun Awolusi, and Susan Taah	

Enhancing Real-Time Decision Making for Heat Stress Prevention in Construction Using Wearable Sensing Devices.....	1351
Mehdi Torbat Esfahani, Roy Lan, Ibukun Awolusi, and Susan Taah	
Clarifying Safety Terminology in Construction Safety Management: Culture, Climate, and Mindful, Resilient, and Just Frameworks	1362
Yuting Chen, Soe Yu Nwe, Lingguang Song, and Ahmed Al Bayati	
A Review of Emerging Approaches to Hazard Communication and Worker Situational Awareness in Construction Safety	1370
Oluwaseun Olabode and Behzad Esmaeili	
A Path towards Creating Health and Safety Monitoring Digital Twins Using Wearable Sensor Technology.....	1382
Fady E. Mansour, Ahmad Al Ayoubi, and Ashtarout Ammar	