CV

Man-Woo Park

Professor, Ph.D.
Civil and Environmental Engineering
Myongji University

116 Myongji-ro, Cheoin-gu, Yongin, Gyeonggi-do, Republic of Korea
Cell Phone: +82-10-4392-5879,
Office Phone: +82-31-330-6411
email: mwpark@mju.ac.kr

1. EDUCATION

Doctor of Philosophy, Civil & Environmental Engineering, December 2012
Georgia Institute of Technology, GA
Dissertation Topic: Automated 3D Vision Tracking of Construction Entities
Area: Construction Management, GPA: 3.92 / 4.00
Advisor: Ioannis Brilakis

Master of Science in Civil, Urban, and Geo-system Engineering, February 2003
Seoul National University, Seoul, South Korea
Thesis Topic: Damage Detection Scheme Based on Bayesian Theory
Area: Structural Engineering, GPA: 4.08 / 4.30
Advisor: Hae Sung Lee

Bachelor of Science in Engineering, Department of Civil, Urban, and Geosystem Engineering, February 2001
Seoul National University, Seoul, South Korea
GPA: 3.49 / 4.30

2. PROFESSIONAL EXPERIENCE

Professor, March 2022-Current
Myongji University, Yongin, South Korea

Associate Professor, March 2017-February 2022
Myongji University, Yongin, South Korea

Assistant Professor, March 2013-February 2017
Myongji University, Yongin, South Korea

Structural Engineer, February 2003-December 2006
DONG IL Engineering Consultants Co., Seoul, South Korea

3. RESEARCH PROJECTS

Intelligent Augmented Reality System Based on Drone Perspective for Remote Bridge Visual Inspection
(National Research Foundation of Korea)
September 2025 ~ August 2028
Principle Investigator, Myongji University

Overlapping 3D Models on Real Scenes Based on Reinforcement Learning for On-Site Augmented Reality Applications
(National Research Foundation of Korea)
June 2022 ~ February 2025
Principle Investigator, Myongji University

AR Visualization for On-site Construction Workers via Digital Twin Models
(Korean Agency for Infrastructure Technology Advancement)
April 2020-December 2025
Principle Investigator, Myongji University

Vision Intelligence based Construction Safety Management System
(National Research Foundation of Korea)
July 2020-May 2023
Researcher, Myongji University

Development of Advanced BIM Platform for Bridge Operation and Maintenance
(Korean Expressway Corporation)
June 2021-December 2022
Researcher, Korean Institute of Building Information Modeling

BIM-Based Progress Monitoring System for Highway Construction
(Korean Expressway Corporation)
March 2021-December 2021
Principle Investigator, Korean Institute of Building Information Modeling

Development of the Guideline on Drone Scanning for Generating 3D Terrain Models
(Halla Corporation)
July 2021-November 2021
Principle Investigator, Myongji University

Practical Applications of LiDAR Scanning and Computer Vision for Railway Construction
(Halla Corporation)
October 2020-November 2021

Principle Investigator, Myongji University

Localization of Bridge Exterior Deterioration Based on Smart Drones
(National Research Foundation of Korea)
June 2019-May 2020
Principle Investigator, Myongji University

ITC-BIM Roadmap and Guidelines Development
(Incheon Transit Corporation)
June 2019-September 2019
Principle Investigator, Korean Institute of Building Information Modeling

Development of a Structural Maintenance Platform Using Augmented Reality Technique
(Korean Expressway Corporation)
August 2018-July 2020
Researcher, Korean Institute of Building Information Modeling

Autonomous UAV-based Augmented Reality for IoT Implementation at Construction Sites
(National Research Foundation of Korea)
June 2016-May 2019
Principle Investigator, Myongji University

Empirical Assessment of Performance and Repair & Strengthening of Deteriorated Bridge
(Korean Agency for Infrastructure Technology Advancement)
April 2017-Current
Researcher, Myongji University

Development of Ex-BIM Standard Models for Construction
(Korean Expressway Corporation)
May 2017-December 2017
Researcher, Korean Institute of Building Information Modeling

Advanced Management of CERIC for Developing Construction Knowledge and Information System
(Korean Agency for Infrastructure Technology Advancement)
August 2014-March 2017
Researcher, Myongji University

Application of Vision-Based Tracking to Monitor On-Site Construction Workers
(Korean Agency for Infrastructure Technology Advancement)
August 2014-August 2016
Researcher, Myongji University

Development of Ex-BIM Standard Models for Design
(Korean Expressway Corporation)
October 2014-August 2015
Researcher, Korean Institute of Building Information Modeling

Vision-Based Tracking of Construction Entities (NSF)
January 2009-August 2011
Researcher, Georgia Institute of Technology

Effective Capacity Analysis and Traffic Data Collection for the I-85 HOV to HOT conversion (GDOT)
January 2011-July 2012
Researcher, Georgia Institute of Technology

4. RESEARCH INTERESTS

My current research interest lies on vision-based sensing technologies in construction, and the following list include further research topics I am interested in.
- Sensing and analysis of infrastructure visual and spatial data
- Applications of vision technologies in construction
- UAV-based on-site monitoring
- AR (Augmented Reality) for construction information visualization
- Building Information Modeling (BIM)
- Automated assessment of infrastructure conditions

5. PUBLICATIONS

Refereed Journal Publications

[1] Htet, H.-T., **Park, M.-W.**, and Ali, E. (2025) " Image-based automation of Schmidt hammer test record interpretation", KSCE Journal of Civil Engineering, February 2026, Volume 30, Number 2, Page 100358, DOI: 10.1016/j.kscej.2025.100358

[2] Nguyen, L., Htet, H.-T., Lee, Y.-J., and **Park, M.-W.** (2024) "Augmented Reality Framework for Retrieving Information of Moving Objects on Construction Sites", Buildings, July 2024, Volume 14, Number 7, Page 2089, DOI: 10.3390/buildings14072089

[3] Kim, J.-Y., **Park, M.-W.**, Huynh, N.T., Shim, C. and Park, J.-W. (2023) "Detection and Length Measurement of Cracks Captured in Low Definitions Using Convolutional Neural Networks", *Sensors*, April 2023, Volume 23, Number 8, Page 3990, DOI: 10.3390/s23083990

[4] Khan, N., Saleem, M.R., Lee, D., **Park, M.-W.** and Park, C. (2021) “Utilizing safety rule correlation for mobile scaffolds monitoring leveraging deep convolution neural networks”, *Computers in Industry*, Elsevier, August 2021, Volume 129, Pages 103448, DOI: 10.1016/j.compind.2021.103448

[5] Won, J., Park, J.-W., Shim, C. and **Park, M.-W.** (2021) "Bridge-surface panoramic-image generation for automated bridge-inspection using deepmatching", *Structural Health Monitoring*, SAGE Publications, DOI: 10.1177/1475921720930380

[6] Won, D., Chi, S., and **Park, M.-W.** (2020) "UAV-RFID Integration for Construction Resource Localization", *KSCE Journal of Civil Engineering*, Korean Society of Civil Engineers, May 2020, Volume 24, Pages 1683-1695, DOI: 10.1007/s12205-020-2074-y

[7] Kang, S., Kim, S., Choi, B., **Park, M.-W.** and Suh, W. (2019) "Development of Smart Helmet for Monitoring Construction Resources Based on Image Matching Method", *Journal of Imaging Science and Technology*, Society of Imaging Science and Technology, May 2019, Volume 63, Number 3, Pages 30403-1-30403-10. DOI: 10.2352/J.ImagingSci.Technol.2019.63.3.030403

[8] Lee, Y.-J. and **Park, M.-W.** (2019) "3D tracking of multiple onsite workers based on stereo vision", *Automation in Construction*, Elsevier, February 2019, Volume 29, Pages 146-159. DOI: 10.1016/j.autcon.2018.11.017

[9] Kang, S., **Park, M.-W.** and Suh, W. (2019) "Feasibility Study of the Unmanned-aerial-vehicle Radio-frequency Identification System for Localizing Construction Materials on Large-scale Open Sites", *Sensors and Materials*, MY Tokyo, January 2019, Volume 31, Number 5, Pages 1449-1465. DOI: 10.18494/SAM.2019.2266

[10] **Park, M.-W.**, Kim, J.-I., Lee, Y.-J., Park, J. and Suh, W. (2017) "Vision-based surveillance system for monitoring traffic conditions", *Multimedia Tools and Applications*, Springer, March 2017, Volume 76, Pages 25343-25367. DOI: 10.1007/s11042-017-4521-4

[11] **Park, M.-W.** and Brilakis, I. (2016) "Continuous localization of construction workers via integration of detection and tracking", *Automation in Construction*, Elsevier, December 2016, Volume 72, Pages 129-142. DOI: 10.1016/j.autcon.2016.08.039

[12] Zhu, Z., **Park, M.-W.**, Koch, C., Soltani, M., Hammad, A., and Davari, K. (2016) "Predicting movements of onsite workers and mobile equipment for enhancing construction site safety", *Automation in Construction*, Elsevier, August 2016, Volume 68, Pages 95-101. DOI: 10.1016/j.autcon.2016.04.009

[13] Hui, L., **Park, M.-W.**, and Brilakis, I. (2015) "Automated Brick Counting for Façade Construction Progress Estimation", *Journal of Computing in Civil Engineering*, American Society of Civil Engineering, November 2015, Volume 29, Issue 6, Pages 04014091. DOI: 10.1061/(ASCE)CP.1943-5487.0000423

[14] **Park, M.-W.**, Elsafty, N., Zhu, Z. (2015) "Hardhat-Wearing Detection for Enhancing On-Site Safety of Construction Workers", *Journal of Construction Engineering and Management*, American Society of Civil Engineering, September 2015, Volume 141, Issue 9, Pages 04015024. DOI: 10.1061/(ASCE)CO.1943-7862.0000974

[15] Yang, J., **Park, M.-W.**, Vela, P, and Golparvar-Fard, M. (2015) "Construction Performance Monitoring via Still Images, Time-Lapse Photos, and Video Streams: Now, Tomorrow, and the Future", *Advanced Engineering Informatics*, Elsevier, April 2015, Volume 29, Issue 2, Pages 211-224. DOI: 10.1016/j.aei.2015.01.011

[16] Dai, F., **Park, M.-W.**, Sandidge, M., and Brilakis, I. (2015) "A Vision-Based Method for On-Road Truck Height Measurement in Proactive Prevention of Collision with Overpasses and Tunnels", *Automation in Construction*, Elsevier, February 2015, Volume 50, Pages 29-39. DOI: 10.1016/j.autcon.2014.10.005

[17] Palinginis, E., **Park, M.-W.**, Kamiya, K., Laval, J., Brilakis, I., and Guensler, R. (2014) "Full-Body Occlusion Handling and Density Analysis in Traffic Video-Surveillance Systems", *Transportation Research Record*, Transportation Research Board of the National Academies, December 2014, Volume 2460, Pages 58-65. DOI: 10.3141/2460-07

[18] **Park, M.-W.**, and Brilakis, I. (2012) “Construction Worker Detection in Video Frames for Initializing Vision Trackers”, *Automation in Construction*, Elsevier, December 2012, Volume 28, Pages 15-25. DOI: 10.1016/j.autcon.2012.06.001

[19] **Park, M.-W.**, Koch, C., and Brilakis, I. (2012) “Three-Dimensional Tracking of Construction Resources Using an On-site Camera System”, *Journal of Computing in Civil Engineering*, American Society of Civil Engineers, July 2012, Volume 26, Issue 4, Pages 541-549. DOI: 10.1061/(asce)cp.1943-5487.0000168

[20] **Park, M.-W.**, Makhmalbaf, A., and Brilakis, I. (2011) “Comparative Study of Vision Tracking Methods for Tracking of Construction Site Resources”, *Automation in Construction*, Elsevier, November 2011, Volume 20, Issue 7, Pages 905-915. DOI: 10.1016/j.autcon.2011.03.007

[21] Brilakis, I., **Park, M.-W.**, and Jog, G. (2011) “Automated Vision Tracking of Project Related Entities”, *Advanced Engineering Informatics*, Elsevier, October 2011, Volume 25, Issue 4, Pages 713-724. DOI: 10.1016/j.aei.2011.01.003

[22] Park, H.W., **Park, M.-W.**, Ahn, B.K., and Lee. H.S. (2007) "1-Norm Based Regularization Scheme for System Identification of Structures with Discontinuous System Parameters", *International Journal for Numerical Methods in Engineering*, John Wiley & Sons, Volume 69, Issue 3, Pages 504-523. DOI: 10.1002/nme.1778

Refereed Conference Proceedings/Presentations

[1] Ali, E., Moon, S.-H., Lee, Y.-J., and **Park, M.-W.** (2025) “Comparative Study of Image-Based 3D Model Superposition Method for Augmented Reality Applications in Construction” Civil Engineering Conference in the Asian Region 2025 (CECAR10), October 21-24, 2025, Jeju, Korea.

[2] Lee, Y.-J., Nguyen, L., and **Park, M.-W.** (2024) “Superimposing 3D Models on Real Scenes Based on The Reinforcement Learning Using Visual Observations” The 10th International Conference on Construction Engineering and Project Management, July 29-Auguest 1, 2024, Sapporo, Japan.

[3] Nhut, T., Lee, Y.-J., and **Park, M.-W.** (2022) “Real-Time 3D Tracking of Onsite Workers Using Multiple Cameras” The 22nd International Conference on Construction Applications of Virtual Reality (CONVR2022), November 16-18, 2022, Seoul, South Korea.

[4] Nguyen, L., Pham, H., and **Park, M.-W.** (2022) “Discrepancy Check Between BIM Elements and Real Environment for Monitoring Installation Status via Augmented Reality on Hololens 2” The 22nd International Conference on Construction Applications of Virtual Reality (CONVR2022), November 16-18, 2022, Seoul, South Korea.

[5] Pham, H., Nguyen, L., Hyunh, N., Lee, Y.-J., and **Park, M.-W.** (2022) “Augmented Reality Framework for Data Visualization Based on Object Detection and Digital Twins” The 9th International Conference on Construction Engineering and Project Management, June 20-23, 2022, Las Vegas, NV, USA.

[6] **Park, M.-W.** (2019) “Stereo Vision Based Framework for On-Site Tracking of Multiple Workers” Civil Engineering Conference in the Asian Region 2019 (CECAR8), April 16-19, 2019, Tokyo, Japan.

[7] Won, D., **Park, M.-W.**, and Chi, S. (2018) “Construction Resource Localization Based on UAV-RFID Platform Using Machine Learning Algorithm” Proceedings of IEEE International Conference on Industrial Engineering & Engineering Management 2018, December 16-19, 2018, Bangkok, Thailand.

[8] Lee, Y.-J., **Park, M.-W.**, and Brilakis, I. (2016) "Entity Matching across Stereo Cameras for Tracking Construction Workers” Proceedings of International Symposium on Automation and Robotics in Construction 2016, July 18-21, 2016, Auburn, AL, USA.

[9] **Park, M.-W.**, and Zhu, Z. (2015) "Vision-Based Identification of Personal Protective Equipment Wearing" Proceedings of International Conference on Construction Engineering and Project Management 2015, Oct 11-14, 2015, Busan, Korea.

[10] **Park, M.-W.**, and Brilakis, I. (2015) "Improved Localization of Construction Workers in Video Frames by Integrating Detection and Tracking" Proceedings of the 5th International Construction Specialty Conference, Jun 7-10, 2015, Vancouver, Canada.

[11] Zhu, Z., **Park, M.-W.**, and Elsafty, N. (2015) "Automated Monitoring of Hardhats Wearing for Onsite Safety Enhancement" Proceedings of the 5th International Construction Specialty Conference, Jun 7-10, 2015, Vancouver, Canada.

[12] **Park, M.-W.**, Palinginis, E., Brilakis, I., Laval, J., Hunter, M., and Guensler, R. (2014) "Unsupervised Framework for Traffic Counting, Speed Estimation based on Camera Network Data" Proceedings of Computing in Civil and Building Engineering 2014, June 23-25, 2014, Orlando, Florida. (doi: 10.1061/9780784413616.198)

[13] Hui, L., **Park, M.-W.**, and Brilakis, I. (2014) "Automated In-Placed Brick Counting for Façade Construction Progress Estimation" Proceedings of Computing in Civil and Building Engineering 2014, June 23-25, 2014, Orlando, Florida. (doi: 10.1061/9780784413616.119)

[14] **Park, M.-W.**, Fei, D., Sandidge M.J., and Brilakis, I. (2013) "Vision-Based Approach for Measuring On-Road Truck Heights" Proceedings of Creative Construction Conference 2013, July 6-9, 2013, Budapest, Hungary.

[15] **Park, M.-W.**, and Brilakis, I. (2012) "Enhancement of Construction Equipment Detection in Video Frames by Combining with Tracking" Proceedings of 2012 ASCE International Conference on Computing in Civil Engineering, June 17-20, 2012, Clearwater Beach, FL, USA.

[16] **Park, M.-W.**, Palinginis, E., and Brilakis, I. (2012) "Detection of Construction Workers in Video Frames for Automatic Initialization of Vision Trackers" Proceedings of the ASCE Construction Research Congress, May 21-23, 2012, West-Lafayette, IN, USA.

[17] **Park, M.-W.**, Jog, G., and Brilakis, I. (2011) "Initializing Vision Based Trackers Using Semantic Texton Forests" Proceedings of 28th International Symposium on Automation and Robotics in Construction (ISARC 2011), June 29-July 2, 2011, Seoul, Korea, Pages 378 – 383.

[18] Jog, G., **Park, M.-W.**, and Brilakis, I. (2011) "Truck-face Recognition Using Semantic Texton Forests" Proceedings of the ASCE Construction Research Congress, June 14-17, 2011, Ottawa, Ontario, CN-087-1 to CN-087-10.

[19] **Park, M.-W.,** and Brilakis, I. (2011) "Automated Vision Tracking of Project Related Entities", Proceedings of the 2011 NSF Engineering Research and Innovation Conference, January 4-7, 2011, Atlanta, GA.

[20] **Park, M.-W.**, Koch, C., and Brilakis, I. (2010) "Correlating Multiple 2D Vision Trackers for 3D Object Tracking on Construction Sites" Proceedings of the 5th Conference on Advancing Project Management for the 21st Century, May 29-31, 2010, Iraklion, Greece.

[21] Makhmalbaf, A., **Park, M.-W.**, and Brilakis, I. (2010) "2D Vision Tracking Methods' Performance Comparison for 3D Tracking of Construction Resources" Proceedings of the ASCE Construction Research Congress, May 8-11, 2010, Banff, AB.

Refereed Conference Posters

Park, M.-W. and Brilakis, I. (2010) " Automated 3D Vision Tracking of Project Related Entities" *Georgia Tech Research Innovation Conference, 8 February 2011, Atlanta, GA.*

6. TEACHING EXPERIENCE

Professor / Associate Professor / Assistant Professor, 2013-Current
Department of Civil and Environmental Engineering, Myongji University
Undergrad Courses:

- Construction Management (Credit Hours: 3)
- Building Information Modeling (Credit Hours: 3)
- Design Fundamentals of Civil Engineering (Credit Hours: 3)
- Capstone Design (Credit Hours: 3)
- Introduction to Engineering Design (Credit Hours: 3)
- Careers in the era of the 4th Industrial Revolution (Credit Hours: 2)
- Statics (Credit Hours: 3)

Grad Courses:

- AI in Construction (Credit Hours: 3)
- BIM and Data Processing (Credit Hours: 3)
- Construction Information Technology and Automation (Credit Hours: 3)
- Construction Information System (Credit Hours: 3)
- Spatial and Visual Sensors in Construction and Infrastructure Management (Credit Hours: 3)
- BIM and Data Processing (Credit Hours: 3)

Co-Lecturer, Spring 2012
School of Civil and Environmental Engineering, Georgia Institute of Technology
Course: CEE 8813A, BC 8100 “Research Methodology” (Credit Hours: 3)

Teaching Assistant, Spring 2011
School of Civil and Environmental Engineering, Georgia Institute of Technology
Course: CEE 8823, BC 8823 “Construction Field Engineering” (Credit Hours: 3)

Teaching Assistant, Fall 2009
School of Civil and Environmental Engineering, Georgia Institute of Technology
Course: “BC 6650 Advanced Project Management” (Credit Hours: 3)

Teaching Assistant, Spring 2001
Department of Civil, Urban, and Geosystem, Seoul National University, Seoul, Korea
Course: “Structural Analysis I” (Credit Hours: 3)

7. PROFESSIONAL ACTIVITIES

Editorial Board Member of Journals

- KSCE Journal of Civil Engineering (Senior Editor)
- KIBIM Journal

8. HONORS AND AWARDS

KSCE Commendation, 2017 & 2025

KIBIM Awards

Academic Award (2024)
Best Paper (2025)
Best Paper (2015)
Young Researcher (2014)

CETI Award (Construction Engineering and Technology Innovation), *2012*
Outstanding Student Researcher, Fiatech

2012 FIATECH student scholarship, *2012*

9. PROFESSIONAL CERTIFICATES

Civil Engineer Certificate of Korea

10.ACTIVE PROFESSIONAL SOCIETIES

Korean Society of Civil Engineering (KSCE), Full Member
Korean Institute of Building Information Modeling (KIBIM), Full Member
Korean Institute of Construction Engineering and Management (KICEM), Full Member
American Society of Civil Engineering (ASCE), Associate Member