# Yelda Turkan, Ph.D.

Associate Professor of Civil Engineering, 1491 SW Campus Way, School of Civil and Construction Engineering, Oregon State University, 97331, Corvallis, OR, United States


# A. Education and Employment Information

## A1. Education

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|---|---|
| 2012 | Ph.D., Civil Engineering<br>University of Waterloo<br>PhD advisors: Carl T. Haas and Ralph Haas |
| 2006 | M.S., Satellite Communication and Remote Sensing<br>Institute of Informatics<br>Istanbul Technical University |
| 2005 | B.S., Civil Engineering<br>Istanbul Technical University |
| 2003 | B.S., Geomatics Engineering<br>Istanbul Technical University |

## A2. Professional Experience

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| Sept. 2021 – present | Associate Professor<br>School of Civil and Construction Engineering<br>Oregon State University |
| Sept. 2016 – Sept. 2021 | Assistant Professor<br>School of Civil and Construction Engineering<br>Oregon State University |
| Aug. 2012 – Aug. 2016 | Assistant Professor<br>Department of Civil, Construction and Environmental Engineering<br>Iowa State University |
| May 2012 – Aug. 2012 | Post-Doctoral Research Fellow<br>Department of Civil and Environmental Engineering<br>University of Waterloo |
| Sept. 2007 – May 2012 | Graduate Research Assistant<br>Department of Civil and Environmental Engineering<br>University of Waterloo |
| June 2005 – Aug. 2007 | Project Engineer<br>Bosporus Technical Consulting Corporation, Istanbul, Turkey |

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| Sept. 2003 – June 2005 | Research Scientist<br>Center for Satellite Communication and Remote Sensing<br>Istanbul Technical University |

# B. Scholarship and Creative Activity

## B1. Publications

***Bold font indicates students for which I serve as the major advisor.***

### B1.1. Books & Book Chapters

1. Y. Turkan, M. O'banion, M. Bunn, J. Jung, D. Bolkas, Information Systems in Civil Engineering. In Surveying and Geomatics Engineering: Principles, Technologies, and Applications (pp. 451-487). Reston, VA: American Society of Civil Engineers. https://doi.org/10.1061/9780784416037
2. M. Namian, Y. Turkan, Safety management of drones in construction Chapter, *Handbook of Construction Safety, Health, and Well-being in the Industry 4.0 Era*. https://www.routledge.com/Handbook-of-Construction-Safety-Health-and-Well-being-in-the-Industry/Manu-Shang-Bartolo-Francis-Sawhney/p/book/9781032079929

### B1.2. Refereed Journal Publication

1. K. McCord, S. Ayer, M. Gheisari, Y. Turkan, I. Mutis, G. Katz, R. Fruchter, Computing in AEC Education: Hindsight, Insight, Foresight, *ASCE Journal of Computing in Civil Engineering.* 2023 (accepted).
2. **R. Longman, Y. Xu, Q. Sun,** Y. Turkan, M. Riggio, Towards a digital twin for monitoring in-service performance of post-tensioned self-centering cross-laminated timber shear walls, *ASCE Journal of Computing in Civil Engineering,* Special issue on Digital Twin for Smart Building and Infrastructure, 2023, Vol. 37 (2). (assisted in problem formulation, helped with data analysis, mentored the researcher, wrote 10-20% of the paper, edited paper). https://doi.org/10.1061/(ASCE)CP.1943-5487.0001050
3. **Y. Xu**, Y. Turkan, A Safety Assessment Model for Using Unmanned Aerial Systems (UAS) in Construction, *Safety Science*, 2022, Vol. 155, pp. 105893 (assisted in problem formulation, helped with data collection and analysis, mentored the researcher, wrote 10-20% of the paper, edited paper). https://doi.org/10.1016/j.ssci.2022.105893
4. **Q. Sun**, Y. Turkan, E. C. Fischer, A building information modeling-fire dynamics simulation integrated framework for the simulation of passive fire protection in a mid-scale cross-laminated timber compartment: Numerical implementation and benchmarking, *Fire and Materials Journal,* Special Issue on Fire Research for Timber Structures, 2022, Vol. 47(4), pp. 525-541 (assisted in problem formulation, helped with data analysis, mentored the researcher, wrote 10-20% of the paper, edited paper). https://doi.org/10.1002/fam.3070
5. C. Baru, M. Pozmantier, I. Altintas, S. Baek, J. Cohen, L. Condon, G. Fanti, I. Foster, E. Jackson, U. Lall, B. Landman, H. Li, C. Marin, B. Martinez Lopez, D. Metaxas, B. Olsen, G. Page, J. Shang, Y. Turkan, P. Zhang, Enabling AI Innovation via Data and Model Sharing:

An Overview of the NSF Convergence Accelerator Track D, *AI Magazine*, Wiley, 2022, Vol. 43 (1). http://dx.doi.org/10.1002/aaai.12042

6. E. Ghiasvand, M. Namian, F. Taherpour, Y. Turkan, Insidious Safety Threat of Fatigue: Why are Construction Workers at Risks of Accidents due to Fatigue? *ASCE Journal of Construction Engineering and Management,* 2021, Vol. 147(12), pp. 04021162 (1-18). (helped with data analysis, wrote 20-30% of the paper, edited paper). ***Editor's Choice Award, December 2021*** https://doi.org/10.1061/(ASCE)CO.1943-7862.0002180
7. M. Namian, M. Khalid, G. Wang, Y. Turkan, Revealing Safety Risks of Unmanned Aerial Vehicles in Construction. *Transportation Research Record (TRR),* 2021, Vol. 2675(11), pp. 334-347. (helped with data analysis, wrote 20-30% of the paper, edited paper). https://doi.org/10.1177/03611981211017134
8. **F. Shalabi**, Y. Turkan, BIM – Energy Simulation Approach for Detecting Building Spaces with Faults and Problematic Behavior, *Journal of Information Technology in Construction*, 2020, Vol. 25, pp. 342-360. (assisted in problem formulation, helped with data analysis, mentored the researcher, wrote 20-30% of the paper, edited paper). https://doi.org/10.36680/j.itcon.2020.020
9. **Q. Sun**, Y. Turkan, A BIM-based Simulation Framework for Fire Safety Management and Investigation of the Critical Factors Affecting Human Evacuation Performance, *Advanced Engineering Informatics,* 2020, Vol. 44, pp. 101093. (conceived idea, helped with data analysis, mentored the researcher, wrote 20-30% of the paper, edited paper). https://doi.org/10.1016/j.aei.2020.101093
10. **F. Guo**, C.T. Jahren, Y. Turkan, Electronic Document Management Systems for the Transportation Construction Industry, *ASC International Journal of Construction Education and Research*, 2019, Vol. 17(1), pp. 52-67. (assisted in problem formulation, helped with data collection, mentored the researcher, wrote 20-30% of the paper, edited paper). https://doi.org/10.1080/15578771.2019.1685612
11. **Y. Xu**, Y. Turkan, BrIM and UAS for bridge inspections and management, *Engineering, Construction and Architectural Management*, 2019, Vol. 27(3), pp. 785-807. (conceived idea, helped with data collection, mentored the researcher, wrote 10-20% of the paper, edited paper). https://doi.org/10.1108/ECAM-12-2018-0556
12. **N. Puri**, Y. Turkan, Bridge Construction Progress Monitoring using Lidar and 4D Design Models, *Automation in Construction*, 2019, Vol. 109, pp. 102961. (conceived idea, helped with data collection, mentored the researcher, wrote 20-30% of the paper, edited paper). https://doi.org/10.1016/j.autcon.2019.102961
13. Y. Turkan, J. Hong, S. Laflamme, **N. Puri**, Adaptive Wavelet Neural Network for Terrestrial Laser Scanning Based Crack Detection, *Automation in Construction*, 2018, Vol. 94, pp. 191-202. (primary author, conceived idea, collected data, developed the algorithm, performed 50% of data analysis, and wrote the paper). https://doi.org/10.1016/j.autcon.2018.06.017
14. **N. Puri**, E. Valero, Y. Turkan, F. Bosché, Assessment of Compliance of Dimensional Tolerances in Concrete Slabs using TLS data and the 2D Continuous Wavelet Transform, *Automation in Construction,* 2018, Vol. 94, pp. 62-72. (conceived idea, helped with data collection, mentored researchers, wrote 20-30% of the paper, edited paper). https://doi.org/10.1016/j.autcon.2018.06.004
15. Y. Turkan, R. Radkowski, A. Karabulut-Ilgu, A.H. Behzadan, A. Chen, Mobile Augmented Reality for Teaching Structural Analysis, *Advanced Engineering Informatics,* 2017, Vol. 34,

pp. 90-100. (primary author, conceived idea, provided feedback on AR software development, and wrote the paper). https://doi.org/10.1016/j.aei.2017.09.005

16. V.S. Kalapusadi, P. Tang, Y. Turkan, Computationally Efficient Change Analysis of Piece-wise Cylindrical Building Elements for Proactive Project Control, *Automation in Construction*, 2017, Vol. 81, pp. 300-312. (conceived idea, collected data, provided feedback on data analysis, mentored researcher, edited paper). https://doi.org/10.1016/j.autcon.2017.04.001
17. **F. Guo**, C.T. Jahren, Y. Turkan, D. Jeong, Civil Integrated Management: An Emerging Paradigm for Civil Infrastructure Project Delivery and Management, *ASCE Journal of Management in Engineering*, 2016, Vol. 33(2), pp. 04016044. (assisted in problem formulation, helped with data collection, provided feedback on data analysis, mentored researchers, edited paper). https://doi.org/10.1061/(ASCE)ME.1943-5479.0000491
18. **F. Shalabi**, Y. Turkan, IFC-BIM Based Facility Management Approach to Optimize Data Collection for Corrective Maintenance, *ASCE Journal of Performance of Constructed Facilities*, 2016, Vol. 31(1), pp. 04016081. (assisted in problem formulation, helped with data collection, provided feedback on data analysis, mentored researcher, edited paper). https://doi.org/10.1061/(ASCE)CF.1943-5509.0000941
19. H. Abdualla, H. Ceylan, S. Kim, K. Gopalakrishnan, P. Taylor, Y. Turkan, System Requirements for Electrically Conductive Concrete Heated Pavements, *Transportation Research Record (TRR)*, 2016, Issue 2569, pp. 70-79. (developed 3D concrete pavement models, wrote 10% of the paper, edited the paper). https://doi.org/10.3141/2569-08
20. F. Bosché, M.A. Ahmed, Y. Turkan, C.T. Haas, R.G. Haas, The value of integrating Scan-to-BIM and Scan-vs-BIM techniques for construction monitoring using laser scanning and BIM: The case of cylindrical MEP components, *Automation in Construction*, 2015, Vol. 49, pp. 201-213. (helped with data collection and analysis, wrote 30% of the paper, and edited paper) – *One of the most cited AUTCON articles published since 2014.* https://doi.org/10.1016/j.autcon.2014.05.014
21. G. P. Luth, A. Schorer, Y. Turkan, Lessons from using BIM to increase Design Construction Integration, *ASCE Practice Periodical on Structural Design and Construction*, 2014, Vol. 19 Special Issue: Construction Engineering: Leveraging Project and Career Success, pp. 103-110. (carried out data analysis and wrote the paper. Note that the first two authors are from the industry and we used data from one of their projects for this paper). https://doi.org/10.1061/(ASCE)SC.1943-5576.0000200
22. Y. Turkan, F. Bosché., C.T. Haas, R.G. Haas, Tracking of secondary and temporary objects in structural concrete work, *Construction Innovation: Information, Process, Management*, 2014, Vol. 14 (2), pp. 145 – 167. (primary author, developed the algorithm, collected and analyzed the data, and wrote the paper). https://doi.org/10.1108/CI-12-2012-0063
23. F. Bosché, A. Guillemet, Y. Turkan, C.T. Haas, R.G. Haas, Assessing the value of a Scan-vs-BIM framework for tracking the built status of MEP works, *ASCE Journal of Computing in Civil Engineering*, 2014, Vol. 28 (4), pp. 05014004. (mentored researcher, collected and analyzed 50% of the data, and wrote 30% of the paper, edited the paper). https://doi.org/10.1061/(ASCE)CP.1943-5487.0000343
24. Y. Turkan, F. Bosché, C.T. Haas, R.G. Haas, Toward Automated Earned Value Tracking using 3D Imaging Tools, *ASCE Journal of Construction Engineering and Management*, 2013, Vol. 139 (4), pp. 423-433. (primary author, developed the algorithm, collected and

analyzed the data, and wrote the paper). https://doi.org/10.1061/(ASCE)CO.1943-7862.0000629

25. Y. Turkan, F. Bosché, C.T. Haas, R.G. Haas, Automated Progress Tracking Using 4D Models and 3D Sensing Technologies, *Automation in Construction*, 2012, Vol. 22 (2), pp. 414-421. (primary author, developed the algorithm, collected and analyzed the data, and wrote the paper) – https://doi.org/10.1016/j.autcon.2011.10.003

**B1.3. Peer-Reviewed Archival Conference Publications**

1. J. Henstrom, R. Amicis, C. Sanchez, Y. Turkan, Immersive Learning in Engineering: A Comparative Study of VR and Traditional Building Inspection Methods, Proceedings of 2023 Web3D Conference, Sen Sebastian, Spain, October 9-11, 2023. (***Best Paper Award*** at the 28th International Association for Computing Machinery (ACM) Conference on 3D Web Technology (Web3D 2023)) https://doi.org/10.1145/3611314.3615917
2. E. Che, M. Olsen, Y. Turkan, Automatic extraction of curbs and curb ramps from mobile lidar point clouds, *Proceedings of the ASCE International Conference on Computing in Civil Engineering, Corvallis, OR, June 25-28, 2023*. (accepted)
3. **D. Ji**, Y. Turkan, P. Calvi, Toward Automation in Crack Detection and Measurements: Benchmarking of CNN-Based Algorithms, *Proceedings of the International Symposium on Automation and Robotics in Construction, Bogota, Colombia, July 12-15, 2022*. https://doi.org/10.22260/ISARC2022/0021
4. **Q. Sun**, Y. Turkan, E. Fischer, Integrating 4D BIM and FDS to Simulate and Assess Fires in Buildings Under Construction, *Proceedings of the 2022 Construction Research Congress, Arlington, VA, March 9-12, 2022*. https://doi.org/10.1061/9780784483961.102
5. **Y. Xu**, Y.Turkan, Risk Assessment for using UAS in Construction: A Fuzzy Analytical Hierarchy Process, *Proceedings of the 2022 Construction Research Congress, Arlington, VA, March 9-12, 2022*. https://doi.org/10.1061/9780784483985.045
6. **D. Ji**, Y. Turkan, Analyzing the Impact of Government-driven BIM adoption: Introducing the case of South Korea, *Proceedings of the International Symposium on Automation and Robotics in Construction, Dubai, UAE, November 2-4, 2021*. https://doi.org/10.22260/ISARC2021/0133
7. **Q. Sun**, Y. Turkan, E. Fischer, Develop and Benchmark FDS Numerical Models to Simulate Fundamental Fire Behavior in CLT Structures, *Proceedings of the International Symposium on Automation and Robotics in Construction, Dubai, UAE, November 2-4, 2021*. https://doi.org/10.22260/ISARC2021/0045
8. **R. Longman,** E. J. Baas, Y. Turkan, M. Riggio, Towards a digital twin for monitoring in-service performance of post-tensioned self-centering cross-laminated timber shear walls, *Proceedings of the 2021 ASCE International Conference on Computing in Civil Engineering, September 12-14, 2021*. https://doi.org/10.1061/9780784483893.069
9. **Q. Sun**, Y. Turkan, ABM and GIS Integration for Investigating the Influential Factors Affecting Wildfire Evacuation Performance, *Proceedings of the International Symposium on Automation and Robotics in Construction, Kitakyushu, Japan, October 2020,* (8 pages). https://doi.org/10.22260/ISARC2020/0142
10. **Y. Xu**, Y. Turkan, A. Karakhan, D. Liu, Exploratory Study of Potential Negative Safety Outcomes Associated with UAV-assisted Construction Management, *Proceedings of Construction Research Congress 2020, Tempe, AZ, March 8-10, 2020*. https://doi.org/10.1061/9780784482865.129

11. **N. Puri,** Y. Turkan, A comparison of Terrestrial Laser Scanning-based and Unmanned Aerial Vehicle Laser scanning based techniques for Concrete Floor Waviness Assessment, *Proceedings of the International Symposium on Automation and Robotics in Construction, Banff, AB, May 2019,* (8 pages). https://doi.org/10.22260/ISARC2019/0152
12. Z. Chen, E. Che, F. Li, M. J. Olsen, Y. Turkan, Web-based Deep Segmentation of Indoor Point Clouds, *Proceedings of the International Symposium on Automation and Robotics in Construction, Banff, AB, May 2019,* (8 pages). https://doi.org/10.22260/ISARC2019/0074
13. **W. Ferron**, Y. Turkan, Preliminary Results: A Roadmap for BIM Adoption and Implementation by Small-Sized Construction Companies, *Proceedings of 35th CIB W78 Conference, IT in Design, Construction, and Management Chicago, IL, October 2018,* pp. 873-879. **(47% acceptance rate)** https://doi.org/10.1007/978-3-030-00220-6_105
14. **Y. Xu**, Y. Turkan, Bridge Inspection using Bridge Information Modeling (BrIM) and Unmanned Aerial Vehicles (UAVs), *Proceedings of 35th CIB W78 Conference, IT in Design, Construction, and Management Chicago, IL, October 2018,* pp. 617-624. **(47% acceptance rate)** https://doi.org/10.1007/978-3-030-00220-6_74
15. **Q. Sun**, Y. Turkan, A BIM Based Simulation Framework for Fire Evacuation Planning, *Proceedings of 35th CIB W78 Conference, IT in Design, Construction, and Management Chicago, IL, October 2018*, pp. 431-438. (47% acceptance rate) https://doi.org/10.1007/978-3-030-00220-6_51
16. R. Radkowski, A. Karabulut-Ilgu, Y. Turkan, A.H. Behzadan, Guiding or Exploring? Finding the Right Way to Teach Students Structural Analysis with Augmented Reality, *Proceedings of International Conference on Virtual, Augmented and Mixed Reality, Las Vegas, NV, July 2018,* pp.452-461. https://doi.org/10.1007/978-3-319-91581-4_34
17. A. Karabulut-Ilgu, A. Chen, R. Radkowski, Y. Turkan, A.H. Behzadan, A. Chen, Usability of a Mobile Augmented Reality Application to Teach Structural Analysis, *Proceedings of the ASEE Annual Conference and Exposition, Salt Lake City, UT, June 2018.* https://peer.asee.org/30074
18. **N. Puri**, Y. Turkan, Toward Automated Dimensional Quality Control of Precast Concrete Elements Using Design BIM, *Proceedings of the 2nd International Conference on Building Information Modelling (BIM) in Design, Construction and Operations, Alicante, Spain, May 2017, WIT Transactions on the Built Environment, Vol. 169,* pp. 203-210. https://doi.org/10.2495/BIM170191
19. **N. Puri**, Y. Turkan, Fusing 3D point clouds and 4D Information Models for Progress Monitoring in Linear Construction Projects, *Proceedings of the Construction Research Congress (CRC), New Orleans, LA, April 2017,* pp. 512 – 521. https://doi.org/10.1061/9780784481264.050
20. **F. Shalabi**, Y. Turkan, S. Laflamme, BrIM Implementation for Documentation of Bridge Condition for Inspection, *Proceedings of the CSCE International Construction Specialty Conference, Vancouver, BC, June 2015*, pp.262. https://doi.org/10.14288/1.0076437
21. **F. Shalabi**, Y. Turkan, A Novel Framework for BIM Enabled Facility Energy Management, *Proceedings of the CSCE International Construction Specialty Conference, Vancouver, BC, June 2015*, pp. 258. https://doi.org/10.14288/1.0076410
22. H. Son, C. Kim, Y. Turkan, Scan-to-BIM – An Overview of Current State of the Art and a Look Ahead, *Proceedings of 32nd International Symposium on Automation and Robotics in Construction (ISARC), Oulu, Finland, June 2015,* (8 pages). https://doi.org/10.22260/ISARC2015/0050

23. V. S. Kalasapudi, Y. Turkan, P. Tang, Toward Automated Spatial Change Analysis of MEP Components using 3D Point Clouds and As-Designed BIM Models, *Proceedings of the International Conference on 3D Computer Vision, IEEE, Workshop on 3D Computer Vision in the Built Environment, Tokyo, Japan, December 2014,* (8 pages) **(26% acceptance rate)** 10.1109/3DV.2014.105.
24. **F. Guo**, Y. Turkan, C.T. Jahren, H.D. Jeong, Civil Information Modeling (CiM) Adoption by Departments of Transportation, *Proceedings of the 15th International Conference in Computing in Civil Engineering and Built Environment (ICCCBE), Orlando, FL, June 2014,* pp. 463-471. https://doi.org/10.1061/9780784413616.058
25. **F. Guo**, Y. Turkan, C.T. Jahren, Case Studies of BIM Practices within Mechanical Construction Industry, *Proceedings of the 2014 Construction Research Congress (CRC), Atlanta, GA, May 2014,* pp. 229-238. https://doi.org/10.1061/9780784413517.024
26. F. Bosché, Y. Turkan, C.T. Haas, T. Chiamone, G. Vassena, A. Ciribini, Tracking MEP Installation Works, *Proceedings of the 30th International Symposium on Automation and Robotics in Construction, Montreal, QC, August 2013,* pp. 229- 239. https://doi.org/10.22260/ISARC2013/0025
27. Y. Turkan, F. Bosché, C.T. Haas, R.G. Haas, Tracking Secondary and Temporary Concrete Construction Objects Using 3D Imaging Technologies, *Proceedings of the ASCE International Workshop on Computing in Civil Engineering, Los Angeles, CA, June 2013*, pp. 749-756. https://doi.org/10.1061/9780784413029.094

**B1.4. Other Peer-Reviewed Publications**

1. **Q. Sun**, Y. Turkan, E. Fischer, Integrate BIM and FDS to Simulate and Assess the Fundamental Fire Behavior of CLT, 2021 The Society of Fire Protection Engineers (SFPE) Annual Conference, Vancouver, BC, Canada, October 2-5, 2021.
2. A. Karabulut Ilgu, E. Miller, A. Chen, R. Radkowski, C. Jahren, Y. Turkan, A. Behzadan, Exploring the Potential of a Mobile Augmented Reality Application to Teach Structural Analysis. *American Education Research Association (AERA) Annual Meeting San Francisco, CA, April 2020*. http://tinyurl.com/t8rsxec (Conference Canceled)
3. **F. Shalabi**, Y. Turkan, A Semi-Automated Approach for Detecting Building Spaces with Deteriorating Performance Using IFC-BIM and Energy Simulations, *Proceedings of the 6th CSCE/CRC International Construction Specialty Conference, Vancouver, BC, June 2017,* (10 pages).
4. **N. Puri**, Y. Turkan, Fusing 4D BIM and 3D Point Clouds for Dimensional Quality Control of Precast Concrete Slabs and Walls, *Proceedings of the 16th International Conference on Construction Applications of Virtual Reality (CONVR), Hong Kong, December 2016,* (10 pages).
5. Y. Turkan, A. Chen, A. Karabulut-Ilgu, R. Radkowski, A.H. Behzadan, C.T. Jahren, Mobile Augmented Reality Implementation for Structural Analysis, *Proceedings of the 23rd International Workshop of the European Group for Intelligent Computing in Engineering (EG-ICE), Krakow, Poland, June 2016,* (10 pages) **(25% acceptance rate)**.
6. **F. Guo**, C.T. Jahren, Y. Turkan, Electronic Document Management Systems for Transportation Construction Industry, *Proceedings of the CSCE International Construction Specialty Conference, Vancouver, BC, June 2015,* pp.132 (1-8).

7. Y. Turkan, **L. Tan**, S. Laflamme. Feature Extraction from 3D Point Clouds for Automatic Update of Bridge Inspection Database, *Proceedings of ASCE Engineering Mechanics Institute Conference, Stanford, CA, June 2015*.
8. **F. Guo**, C.T. Jahren, Y. Turkan, Case Study on 3D Modeling and AMG Practices, *Proceedings of the Conference on Autonomous and Robotic Construction of Infrastructure, Ames, IA, June 2015*.
9. S. Laflamme, Y. Turkan, **L. Tan**, Bridge Structural Condition Assessment using 3D Imaging, *Proceedings of the Conference on Autonomous and Robotic Construction of Infrastructure, Ames, IA, June 2015*.
10. E. Marks, S. Siebert, Y. Turkan, J. Teizer, Mobile 3D Mapping of Large Infrastructure Projects Using Unmanned Aerial Vehicle (UAV) Systems, *Construction Industry Institute (CII) Conference, July 2013*. (**Recipient of the Best Poster Award**)
11. **D. Van**, Y. Turkan, Application of 3D Printing Technology in BIM and Virtual Design and Construction, *FIATECH Annual Technology Conference and Showcase, March 2013*.
12. M. Nahangi, M. Ahmed M., Y. Turkan, C.T. Haas, R.G. Haas, Automated Progress Tracking of Construction Projects using Sensing and 3D Imaging Technologies*, Proceedings of Modular and Off-Site Construction Summit, Edmonton, AB, October 2012*.
13. Y. Turkan, F. Bosché, C.T. Haas, R.G. Haas, Automated Earned Value tracking, *Proceedings of the Gerontechnology Conference, Eindhoven, The Netherlands, July 2012*. Vol. 11, no. 2, p.242.
14. Y. Turkan, F. Bosché, C.T. Haas, R.G. Haas, Automated Progress Tracking of Erection of Concrete Structures Using 3D Imaging Technologies, *Proceedings of the Canadian Society for Civil Engineering (CSCE) Annual Conference, Ottawa, QC, June 2011,* (10 pages).
15. Y. Turkan, Automated Construction Progress Tracking of structures using 3D imaging and a-priori 3D BIM models, *FIATECH Annual Technology Conference and Showcase, Chandler, AZ, April 2011*.
16. F. Bosché, Y. Turkan, C.T. Haas, R.G. Haas, Fusing 4D Modeling and Laser Scanning for Automated Construction Progress Control, *Proceedings of the Association of Researchers for Construction Management (ARCOM) Annual Conference, Leeds, U.K., September 2010,* (10 pages).
17. Y. Turkan, F. Bosché, C.T. Haas, R.G. Haas, Automated Progress Tracking Using 3D Imaging (LADAR & Photogrammetry*), Construction Industry Institute (CII) Annual Conference*, *July 2010*.
18. Y. Turkan, F. Bosché, C.T. Haas, R.G. Haas, Toward automated progress tracking of erection of construction of concrete structures, *Proceedings of the International Conference on Innovation in Architecture, Engineering and Construction, State College, PA, June 2010,* (10 pages).
19. Y. Turkan, F. Bosché, C.T. Haas, R.G. Haas, Automated Construction Progress Tracking using LADAR, *CSCE Canadian Graduate Student Colloquium on Computer-Assisted Construction Technologies, June 2009*.

**B1.5. Papers Currently under Peer Review**

1. **Y. Zhou**, E. Che, Y. Turkan, M. J. Olsen, Virtual ADA Compliance Assessment: Mimicking Digital Inclinometers in Lidar Point Clouds, *ASCE Journal of Surveying Engineering*.

2. J. Jung, E. Che, M J. Olsen, C. Parrish, Y. Turkan, Instance-based clustering of road markings with wear and occlusion from mobile lidar data, *ASCE Journal of Computing in Civil Engineering.*
3. **D. Ji**, Y. Turkan, P. Calvi, Toward Automated Crack Detection and Measurements for Rapid Structural Inspections, *Structural Health Monitoring*.

### B1.6. Other Publications

1. Y. Turkan, M. Olsen, E. Che, Automated Localization and Functional Condition Assessment of ADA Curb Ramps with Mobile Lidar Point Clouds. The Pacific Northwest Transportation Consortium, U.S. DOT Federal Region 10 Project Report, 2022. http://hdl.handle.net/1773/48654
2. Y. Turkan, **Y. Xu**, K. Han; National Cooperative Highway Research Program; Transportation Research Board National Academies of Sciences, Engineering, and Medicine 2022. Use of Unmanned Aerial Systems for Highway Construction. Washington, DC: The National Academies Press. https://doi.org/10.17226/26546.
3. Y. Turkan, **Y. Xu**, A Practical Model for Measuring and Mitigating Safety Risks of Using UAS in Construction, The Center for Construction Research and Training Report #20-5-PS, February 2022. https://www.cpwr.com/wp-content/uploads/SS2022-measure-mitigate-UAS-risks.pdf
4. Y. Turkan, **Y. Xu**, UAS Image-Based Point Clouds to 3D BrIM: 3D As-Is Bridge Model Generation, The Pacific Northwest Transportation Consortium, U.S. DOT Federal Region 10 Project Report, 2022. https://digital.lib.washington.edu/researchworks/handle/1773/48594
5. Y. Turkan, **Y. Xu**, Bridge Structural Inspections Using Bridge Information Models (BrIM) and Unmanned Aerial Vehicles (UAVs), The Pacific Northwest Transportation Consortium, U.S. DOT Federal Region 10 Project Report, 2019. https://rosap.ntl.bts.gov/view/dot/55777
6. M. Olsen, R.J. Schultz, C. Parrish, J. Park, J. Kiser, Y. Turkan, SaGES 2017: The XIV Surveying and Geomatics Educators Society Conference at Oregon State University, *Journal of Surveying and Land Information Science,* 2018, Vol. 77 (2), pp. 67-70.
7. **N. Puri**, Y. Turkan, Progress Monitoring of Horizontal Construction Projects Using Mobile LiDAR Point Clouds, *Proceedings of ASCE UESI Surveying and Geomatics Conference, Pomona, CA, April 2018*.
8. **N. Puri**, Y. Turkan, Dimensional Quality Control of Concrete Elements Using As-Designed BIM, *Proceedings of 53rd ASC Annual International Conference, Seattle, WA, April 2017.*
9. C. Parrish, Y. Turkan, K. Kellum, C. Simpson, Bridge and Power Equipment Inspections with Unmanned Aircraft Systems, *GIS in Action Conference, Portland, OR, April 2017.*
10. H. Abdualla, S. Kim, Y. Turkan, P. Taylor, H. Ceylan, K. Gopalakrishnan, Design and Construction Requirements for Electrically Heated Pavement Systems, *Proceedings of the Mid-Continent Transportation Research Symposium, Ames, IA, August 2015*.
11. G. Dadi, Y. Turkan, Committee Showcase Features Today's Breakthrough Technologies, *Construction Industry Institute (CII) Newsletter, August 2011*.

## B2. Professional Meetings, Symposia, and Conferences

### B2.1. Presentations to Professional Groups

1. Invited Talk, Engineering Research Seminar Series in the Civil and Environmental Engineering Department at New York University Abu Dhabi, February 2024, Abu Dhabi, UAE.

2. Distinguished Speaker, Engineering Research Seminar Series, Civil and Environmental Engineering Department at Northeastern University, "AI-Driven Digital Twinning of the Built Environment", November 20, 2023, Boston, MA.
3. Keynote Speaker, The Leonhard Obermeyer Center - Technical University of Munich Center of Digital Methods for the Built Environment Day, "AI-enabled cyberinfrastructure for the development of digital twins of the built environment", November 3, 2023, Munich, Germany.
4. Invited Talk, Graduate Research Seminar Series at the Lyles School of Civil Engineering at Purdue University, "Integration of Fire Simulation and BIM Tools for the Design of Passive Fire Protection Sequencing in Mass Timber Construction," November 11, 2022.
5. Conference Presentation, the 2022 *International Symposium on Automation and Robotics in Construction*, Bogota, Colombia, "Toward Automation in Crack Detection and Measurements: Benchmarking of CNN-Based Algorithms," July 12-15, 2022.
6. Invited Talk, AI-Enabled Drone Image Processing for Rapid Bridge Inspection and Management, 2022 ASCE Engineering Mechanics Institute (EMI) Conference, May 31-June 3, 2022, Baltimore, Maryland.
7. Invited Talk, Implementation of BIM and Remote Sensing Technologies in Construction Engineering, The Eastman Symposium (organized by Georgia Institute of Technology faculty), BIM in Construction Engineering Session, May 13, 2021.
8. Invited Talk, American Concrete Institute (ACI) Webinar, Use of laser scans and drones to measure concrete floor waviness / flatness automatically, June 1, 2020.
9. Invited Talk, NHERI Lehigh Seminar Series, Webinar, "Post-event Reconnaissance using BIM, LiDAR and UASs", January 22, 2020.
10. Invited Talk, Tsinghua University, "BIM, LiDAR and Unmanned Aircraft Systems (UAS)s for Infrastructure Assessment", October 31, 2019.
11. Invited Talk, *2nd International Conference on Sustainable Buildings and Structures, Suzhou, China*, "Deep Semantic Segmentation for 3D as-is Bridge Model Generation", October 26, 2019.
12. Conference Presentation, *the 2019 International Symposium on Automation and Robotics in Construction, Banff, AB, "*A comparison of Terrestrial Laser Scanning-based and Unmanned Aerial Vehicle Laser scanning-based techniques for Concrete Floor Waviness Assessment", May 22, 2019.
13. Conference Presentation, *the 2019 International Symposium on Automation and Robotics in Construction, Banff, AB, "*Web-based Deep Segmentation of Indoor Point Clouds", May 24, 2019.
14. Invited Talk, George Mason University, "BIM and 3D Imaging Technologies for Dimensional Quality Control of Precast Concrete Elements", February 5, 2019.
15. Conference Presentation, *35th CIB W78 Conference, IT in Design, Construction, and Management Chicago, IL,* "Bridge Inspection using Bridge Information Modeling (BrIM) and Unmanned Aerial Vehicles (UAVs)", October 3, 2018.
16. Invited Talk, North Carolina State University, "BrIM, LiDAR and Unmanned Aerial Vehicles for Infrastructure Assessment", March 2, 2018.
17. Invited Talk, City University of Hong Kong, "BrIM, LiDAR and Unmanned Aerial Vehicles for Infrastructure Assessment", December 29, 2017.

18. Conference Presentation, *6th CSCE/CRC International Construction Specialty Conference, Vancouver, BC*, "A Semi-Automated Approach for Detecting Building Spaces with Deteriorating Performance Using IFC-BIM and Energy Simulations", June 2017.
19. Conference Presentation, *2nd International Conference on Building Information Modelling (BIM) in Design, Construction and Operations, Alicante, Spain*, "Toward Automated Dimensional Quality Control of Precast Concrete Elements Using Design BIM", May 2017.
20. Conference Presentation, *16th International Conference on Construction Applications of Virtual Reality (CONVR), Hong Kong*, "Fusing 4D BIM and 3D Point Clouds for Dimensional Quality Control of Precast Concrete Slabs and Walls," December 2016.
21. Conference Presentation, *23rd International Workshop of the European Group for Intelligent Computing in Engineering (EG-ICE), Krakow, Poland*, "Mobile Augmented Reality Implementation for Structural Analysis," June 2016.
22. Invited Talk, Missouri State University, "Remote Sensing and Information Modeling Applications in the Construction Industry", March 2016.
23. Invited Talk, Oregon State University, "LiDAR and Information Modeling Applications in Construction and Facilities Management", March 2016.
24. Invited Guest Lecture, McMaster University, "Sensing and Information Technology Applications in the AEC-FM Industry", February 2016.
25. Invited Guest Lecture, Missouri State University, "New Technologies and Trends in the Construction Industry", November 2015.
26. Invited Guest Lecture, Iowa State University, "LiDAR Applications for Preserving Historic Built Environment", September 2015.
27. Keynote Speaker, University of Central Florida, "Remote Sensing and Information Technology Applications in Construction Engineering and Management", Women in Construction Workshop, July 2015.
28. Conference Presentation, *32nd International Symposium on Automation and Robotics in Construction (ISARC), Oulu, Finland*, "Scan-to-BIM – An Overview of Current State of the Art and a Look Ahead", June 2015.
29. Invited Talk, Iowa State University, "Bridge Structural Condition Assessment using 3D Modeling and 3D Imaging Technologies," Workshop on 3D Design and Modeling for Highway Structures, Bridge Engineering Center, April 2015.
30. Invited Talk, University of Alberta, "Automated Volumetric Project Progress Tracking using 3D Imaging Technologies," March 2015.
31. Invited Talk, University of Washington, "Sensing and Information Technology Applications for Construction Management," February 2015.
32. Conference Presentation, *IEEE International Conference on 3D Computer Vision, Tokyo, Japan*, "Toward Automated Spatial Change Analysis of MEP Components using 3D Point Clouds and As-Designed BIM Models," December 2014.
33. Invited Talk, University of Twente, "3D Imaging Technology Applications for Project Progress Control," November 2014.
34. Conference Presentation, *Construction Research Congress, Atlanta, GA*, "Case Studies of BIM Practices within Mechanical Construction Industry," May 2014.

35. Invited Talk, McMaster University, "Creating As-built BIMs for MEP Systems by fusing Construction BIM Models and 3D Laser Scan Point Clouds," October 2013.
36. Invited Talk, *Construction Industry Institute (CII) Annual Conference*, *Orlando, FL*, "Tracking Secondary and Temporary Concrete Construction Objects using 3D Imaging Technologies," July 2013.
37. Conference Presentation, *ASCE International Workshop on Computing in Civil Engineering, Los Angeles, CA*, "Tracking Secondary and Temporary Concrete Construction Objects Using 3D Imaging Technologies," June 2013.
38. Invited Talk, Georgia Institute of Technology, "Four-Dimensional (4D) Modeling for Building Progress Monitoring," April 2012.
39. Invited Talk, Iowa State University, "Automated Progress Tracking by fusing 4D Modeling and 3D Imaging Tools," April 2012.
40. Conference Presentation, *Canadian Society for Civil Engineering (CSCE) Annual Conference*, *Ottowa, ON*, "Automated Progress Tracking of Erection of Concrete Structures Using 3D Imaging Technologies," June 2011.
41. Conference Presentation, *International Conference on Innovation in Architecture, Engineering and Construction, State College, PA*, "Toward automated progress tracking of erection of construction of concrete structures," June 2010.

### B2.2. Participation at Invitational Workshops

- Invited Participant, Kiewit Faculty Open House, Dallas, TX, June 13-15, 2023.
- Invited Participant, NSF-Funded Workshop: "Next Generation Learning Centered Environment for Architecture, Engineering and Construction (AEC) Education, Minneapolis, MN, June 24-25, 2022.
- Invited Participant, Virtual Design and Construction Faculty Boot Camp, Associated Schools of Construction (ASC), San Luis Obispo, CA, August 10 – 12, 2021.
- Invited Speaker, The Eastman Symposium, BIM in Construction Engineering, Online, May 13, 2021.
- Invited Participant, NSF-Funded Workshop: "3D Printing for Civil Infrastructure Design and Construction", National Science Foundation, Arlington, VA, July 13-14, 2017.
- Invited Participant, 3D Computer Vision in the Built Environment Workshop, IEEE International Conference on 3D Computer Vision, Tokyo, Japan, December 2014.

## B3. Grant and Contract Support

| *Agency & Dates* | *PI (and coPIs)* | *Title* | *Total Budget* |
|---|---|---|---|
| FAA ASSURE 12/1/2023-2/28/2025 | Y.Turkan (PI), J. Kim (co-PI) | A73 - Conduct Science Technology Engineering and Math (STEM) Outreach to Minority K-12 Students Using Unmanned Aircraft Systems (UAS) as a Learning Platform | $256,422 |

| | | | |
|---|---|---|---|
| OSU<br>RAA<br>6/1/2023 – 5/31/2024 | Y. Turkan (PI) | Digital Twins for Sustainable Construction Practices and Built Environment within a Circular Economy Vision | $20,000 |
| NCHRP<br>9/1/2022 – 2/28/2025 | Y.Turkan (PI), M. Olsen (Co-PI), C. Parrish (Co-PI), C. Simpson (Co-PI), D. Tran (co-PI), R. Chen (Co-PI), D. Harris (co-PI) | Guidelines for Digital Technologies and Systems for Remote Construction Inspection for Highway Infrastructure Projects | $500,000 |
| OSU<br>CREEdO<br>1/1/2022-12/31/2022 | R. De Amicis (PI), O. Demirel (co-PI), Y. Turkan (co-PI), C. Sanchez (co-PI) | CREEdO seed grant: A transformative study on the effectiveness of Extended Reality enhancing engineering education | $25,000 |
| ODOT<br>9/1/2021 – 6/30/2024 | M. Olsen (PI), J. Jung (Co-PI), E. Che (Co-PI), Y. Turkan (Co-PI), C. Parrish (Co-PI) | Automating lidar data to develop and manage active transportation asset inventories | $250,000 |
| PacTrans<br>6/1/2021 – 5/31/2022 | J. Louis (PI), Y. Turkan (Co-PI) | Mitigating wildfire impacts on mobility using GIS, fire simulation, and operations modeling | $40,000 |
| PacTrans<br>3/16/2021-3/15/2022 | Y. Turkan (PI); P. Calvi (co-PI) | LiDAR, Drones and BrIM for Rapid Bridge Inspection and Management | $300,000 |
| NCHRP<br>1/15/2021-1/14/2022 | Y. Turkan (PI); Kevin Han (co-PI) | NCHRP Synthesis 20-05/Topic 52-04: Use of Unmanned Aircraft Systems for Departments of Transportation | $45,000 |
| NSF<br>09/15/2020-05/31/2021 | Y.Turkan (PI), M. Olsen (Co-PI), F. Li (Co-PI), R. Chen (Co-PI), Y. Cho (Co-PI) | NSF Convergence Accelerator – Track D – Rapid Development of Intelligent, Built Environment Geo-Databases Using AI and Data-Driven Models | $920,000 |

| | | | |
|---|---|---|---|
| CPWR 08/16/2020-08/15/2021 | Y. Turkan (PI) | Practical Effectiveness Model for Mitigating Safety Hazards Generated by using UAVs in Construction | $30,000 |
| FHWA 01/15/20 – 12/31/21 | Y. Turkan (PI), C. Parrish (Co-PI), M. Olsen (Co-PI), C. Simpson (Co-PI) | Every-Day Counts Initiative 5: Unmanned Aerial Systems (UAS)s | $147,500 |
| PacTrans 08/16/20 – 09/15/21 | Y. Turkan (PI), E. Che (Co-PI), M. Olsen (Co-PI) | Automated Localization and ADA Functional Condition Assessment of Curb Ramps using Mobile Lidar | $80,000 |
| ARS/TDI 07/01/2020-06/30/2021 | Y. Turkan (PI), E. Fischer (Co-PI) | Fire protection construction sequencing in mass timber buildings for fire safety | $30,000 |
| NSF 09/01/19-08/31/20 | M. Olsen (PI), M. Bailey (co-PI), Y. Turkan (co-PI), J. Park, C. Parrish | Planning Grant: Engineering Research Center for Built Infrastructure Geospatial Data Acquisition, Visualization, and Analysis (BIGDAVA) | $99,999 |
| PacTrans 08/16/19 – 09/15/21 | Y. Turkan (PI) | UAS Image-Based Point Clouds to 3D BrIM: Deep Semantic Segmentation for 3D as-is Bridge Model Generation | $80,000 |
| OSU CTL 10/08/19-12/04/19 | Y. Turkan (PI) | Hybrid Course Development: CEM 442 – Building Construction Management | $1,500 |
| FHWA 08/15/18 – 05/31/19 | Y. Turkan (PI) | Advancing the Development and Deployment of BIM-Infrastructure | $10,792 |
| PacTrans 09/16/17 – 09/15/19 | Y. Turkan (PI) | Bridge Structural Inspections using Bridge Information Models (BrIM) and Unmanned Aerial Vehicles (UAVs) | $70,000 |

| | | | |
|---|---|---|---|
| NSF 08/15/17-08/14/19 | Y. Turkan (PI) | Collaborative Research: Transforming the Teaching of Structural Analysis Skills through Mobile Augmented Reality | $30,000 |
| ODOT 08/01/17-10/31/18 | Y. Turkan (PI), M. Olsen (co-PI), J. Gambatese (co-PI) | Project Progress Tracking Using LiDAR and 4D Information Models | $96,000 |
| NCHRP 12/15-08/17 | O. Smadi (PI), J. Tsai (co-PI), H. Ceylan (co-PI), Y. Turkan (co-PI) | Standard Definitions for Comparable Pavement Cracking Data | $300,000 |
| FAA 8/14-08/16 | H. Ceylan (PI), P. Taylor (co-PI), K. Gopalakrishnan (co-PI), S. Kim (co-PI), Y. Turkan (co-PI), K. Gkritza (co-PI) | Advanced Construction Techniques for Heated Airport Pavements | $278,470 |
| MTC 7/14-6/15 | Y. Turkan (PI) and S. Laflamme (co-PI) | Terrestrial Laser Scanning Based Bridge Condition Assessment | $64,115 |
| Minnesota DOT 7/14-6/16 | Y. Turkan (PI) and J. Shane (co-PI) | Modernizing Road Construction Plans and Documentation | $146,022 |
| MATC 7/13-12/14 | Y. Turkan (PI) and S. Laflamme (co-PI) | Digital Documentation of Element Condition for Bridge Evaluation | $59,780 |
| | | *Totals* | $3,880,600 |

**B3.1. Proposals Currently under Review**

| *Agency & Dates* | *PI (and coPIs)* | *Title* | *Total Budget* |
|---|---|---|---|
| NCHRP | PI: M. Olsen, CoPIs: E. Che, C. Parrish, H. Rastiveis, C. Simpson, Y. Turkan, B. Weaver, D. Bolkas, H. Dang | Development of a Surveying and Mapping Guide for Transportation Projects | $600,000 |
| | | *Totals* | $600,000 |

## B4. Other Scholarship and Creative Activities

*Workshops and Professional Development Activities*

- Participant, NSF CMMI's Game Changer Academies for Advancing Research Innovation, May – November 2021.
- Participant, National Effective Teaching Institute (NETI)-3 Online Teaching Focused Workshop, June 2-3, 2021.
- Participant, The National Center for Faculty Development and Diversity Faculty Success program, 2018
- Participant, The Associated General Contractors (AGC) industry residency program, 2018.
- Participant, The Faculty Development Seminars hosted by the College of Engineering (2016-17 AY).
- Participant, American Society of Civil Engineers (ASCE) ExCEEd Teaching workshop, July 19-24, 2015.

# C. Service

## C1. University Service

- COE Artificial Intelligence (AI) program interdisciplinary advising committee member, AY 2022-23
- CCE Ad-Hoc Promotion and Tenure Committee Member, AY 2022-23
- CCE Teaching Evaluation Committee Member, AY 2022-23.
- CCE Student Scholarship Application Review Committee Member, AY 2021-22
- CCE Graduate Committee, AY 2021/22.
- Faculty Marshal (Undergraduate) at the 2017 Commencement Ceremony
- CCE Graduate Committee, AY 2016/17, 2017/18, 2018/19

At Iowa State University

- Promotion and Tenure Committee, AY 14/16
- Ad-hoc committee on faculty and staff mentoring, AY 13/14
- Search Committee for Clinician, 2013
- Search Committee for the CCEE Department Chair, 2012

## C2. Service to the Profession

### C2.1. Journal Editorships

- Associate Editor-in-Chief, Smart Construction, since August 2023
- Handling Editor, The Transportation Research Record, since March 2023.
- Associate Editor, ASCE Open: Multidisciplinary Journal of Civil Engineering, since December 2022.
- Guest Editor, ASCE Journal of Computing in Civil Engineering & ASCE Journal of Civil Engineering Education Special Collection on the Role of Emerging Technologies in AEC Education, 2022.
- Editorial Board Member, Advanced Engineering Informatics, Elsevier, since February 2020.

## C2.2. Conference and Workshop Organization

- Track Chair, Computer Applications, Information Modeling, and Simulation Track at the 2024 ASCE Construction Research Congress (CRC) & Construction Institute Joint Conference, March 20-23, 2024, Des Moines, Iowa.
- Co-Organizer, Digital Construction Workshop at the ISPRS Geospatial Week, September 2-7, 2023, Cairo, Egypt.
- Conference Chair, 2023 ASCE International Conference on Computing in Civil Engineering (i3CE), June 25-28, 2023, Corvallis, Oregon.
- Co-Organizer, 3rd Workshop and Challenge on Computer Vision in the Built Environment for the Design, Construction and Operation of Buildings, held in conjunction with IEEE Conference on Computer Vision and Pattern Recognition, June 18, 2023, Vancouver, BC.
- Presiding Officer, Transportation Research Board (TRB) Annual Meeting, Poster Session titled "*Emerging Sensor Technologies for Critical Transportation Data Needs*", January 11, 2023, Washington, DC.
- Co-Organizer, 2nd Workshop and Challenge on Computer Vision in the Built Environment for the Design, Construction and Operation of Buildings, held in conjunction with IEEE Conference on Computer Vision and Pattern Recognition, June 19, 2022, New Orleans, LA.
- Co-organizer, International Society for Photogrammetry and Remote Sensing, XXIV ISPRS Congress, Thematic Session on "Reality capture and quality inspection in modern/digital construction", June 6-11, 2022, Nice, France.
- Presiding Officer, Transportation Research Board (TRB) Annual Meeting, Poster Session titled "A Look at New Geospatial Data Acquisition Equipment & Technology for Newer & Improved Applications", January 11, 2022, Washington, DC.
- Area Chair for the 2021 International Symposium on Automation and Robotics in Construction (ISARC), Dubai, UAE (online).
- Scientific Committee Member, ASCE i3CE 2021 – IT for Smart Infrastructure and Communities Conference, 12-14 September, Orlando, FL.
- Co-Organizer, 1st Workshop and Challenge on Computer Vision in the Built Environment for the Design, Construction and Operation of Buildings, held in conjunction with IEEE Conference on Computer Vision and Pattern Recognition, June 20, 2021, Online.
- Scientific Committee Member for the 18th International Conference on Computing in Civil Engineering and 37th International CIB W78 Conference (ICCCBE/W78 Joint Conference), June 2-4, 2020, Sao Paulo, Brazil.
- Scientific Committee Member for the 8th International Conference on Innovative Production and Construction (IPC 2019), December 4-7th, 2019, Hong Kong, China.
- Scientific Committee Member for the 2nd International Conference on Sustainable Buildings and Structures (ICSBS 2019), October 25 - 27, 2019, Suzhou, China.
- Organizer of the Academic Showcase at the 2019 Construction Industry Institute (CII) Annual Conference, August 4 - 5, 2019, San Diego, CA.
- Scientific Committee member for the International Council for Research and Innovation in Building Construction (CIB) W78 35 Annual Conference, 2018.
- Organizer of the social/vacation day activities at the 2017 Surveying and Geomatics Educators Society (SaGES) Conference, July 30 – August 3, 2017, Corvallis, OR.

- Technical Committee Co-Chair, Construction Planning and Control Track, Construction Research Congress (CRC), 2018.
- Technical Program Co-Chair, TRB Webinar on Information Standardization Practices for Digital Project Delivery, 2015 (430 attendees across the U.S.).
- Technical Program Co-Chair, TRB Workshop on Information Standardization Practices for Digital Project Delivery, 2015.

## C2.3. Conference Program Committees

- Technical Committee Member, 2023 International Symposium on Automation and Robotics in Construction, July 4 – 7, 2023, Chennai, India.
- Session Chair, ASCE Construction Research Council Congress, 2022
- Scientific Committee Member, ASCE 2021 International Conference on Computing in Civil Engineering (i3CE 2021), Orlando, FL, September 12-14, 2021.
- Session Chair, Data Sensing, Computing and Visualization, the International Symposium on Automation and Robotics in Construction, Banff, AB, 2019
- Session Chair, Education, Training and Learning with Technologies, CIB W78 35 Annual Conference, 2018
- Conference Program Committee Member, ASCE International Workshop on Computing in Civil Engineering, 2015, 2017
- Conference Program Committee Member, ASCE Construction Research Council Congress, 2014, 2016, 2018
- Conference Program Committee Member, International Symposium on Automation and Robotics in Construction, 2013, 2015
- Panel Member for the VIMS (Visualization, Information Modeling and Simulation) and DSA (Data Sensing and Analytics) Track Best Paper and Best Ph.D. Student Demonstration Competition, organized as part of the 2015 ASCE International Workshop on Computing in Civil Engineering.
- Panel Member for the DSA (Data Sensing and Analytics) Track Best Paper, organized as part of the 2014 ASCE International Conference on Computing in Civil and Building Engineering.
- Session Chair, Transportation Research Board Annual Meeting, 2014
- Session Chair, ASCE Construction Research Council Congress, 2014
- Session Chair, International Symposium on Automation and Robotics in Construction, 2013
- Session Chair, ASCE International Workshop on Computing in Civil Engineering, 2013

## C2.4. Reviewing

1. National Science Foundation (NSF) Grant Review Panels
    - CMMI Civil Infrastructure Systems (CIS) Program,
    - CMMI Engineering for Civil Infrastructure (ECI) Program,
    - Improving Undergraduate STEM Education: Education and Human Resources (IUSE: EHR) Program,
    - Research on Emerging Technologies for Teaching and Learning (RETTL) Program.
2. The National Cooperative Highway Research Program (NCHRP) Grant Review Panels
3. National Institute of Standards and Technology (NIST) Grant Review Panels
4. Canada Foundation for Innovation, John R. Evans Leaders Fund Application Reviews

5. Estonian Research Council (ETAg) Research Grant Application Reviews
6. German Research Foundation Grant Application Reviews
7. The Netherlands Organization for Scientific Research, Applied and Engineering Sciences, NWO AES, the Dutch funding agency
8. ASCE Journal of Computing in Civil Engineering
9. ASCE Journal of Construction Engineering and Management
10. ASCE Journal of Surveying Engineering
11. ASCE Journal of Management in Engineering
12. ASCE Journal of Infrastructure Systems
13. ASCE Journal of Professional Issues in Engineering Education and Practice
14. ASCE Practice Periodical on Structural Design and Construction
15. Automation in Construction, Elsevier
16. Advanced Engineering Informatics, Elsevier
17. Scientific Reports, Springer Nature SNAPP
18. Visualization in Engineering, Springer
19. Computer-Aided Civil and Infrastructure, Wiley
20. Journal of Spatial Science, Taylor, and Francis
21. Building Simulation, Springer
22. International Journal of Disaster Risk Reduction

## C2.5. Other

1. Society Membership

   ASCE - American Society of Civil Engineers
   - CRC - Construction Research Council, 2014 - Present

   CII - Construction Industry Institute, 2012 - Present
   TRB - Transportation Research Board, 2012 – Present
   IAARC – International Association for Automation and Robotics in Construction
   ISPRS – International Society for Photogrammetry and Remote Sensing
   GLF-CEM – The Global Leadership Forum for Construction Engineering and Management Programs
   CIB – International Council for Research and Innovation in Building and Construction

2. Society Committees

   ASCE - American Society of Civil Engineers
   - Computing Division
     - **Vice Chair**, Executive Committee, 2021 – Present
     - **Past Chair**, Education Committee, 2018 – 2022
     - Member, Data Sensing and Analytics Committee (DSA), 2014 - Present
     - Member, Visualization, Information Modeling and Simulation Committee (VIMS), 2014 – Present
     - Member, Taskforce on Creating/Fostering Inclusive Academic Communities, 2022 - Present
   - Member, Construction Institute, Digital Project Delivery Committee, 2014 – Present

   CII – Construction Industry Institute

- **Academic Advisor** for the Data Analytics Community for Business Advancement (DA CBA), 2020 - 2021
- Member, Academic Committee, 2012 - Present
- Student Member, Breakthrough Strategy Committee, 2010 - 2012

TRB – Transportation Research Board

- **Co-chair**, Sensing Technologies AED30(1), Joint Subcommittee of AED30, AED40, 2022 – Present
- **Secretary,** AFH10 (1) Information Systems in Construction Management Joint Subcommittee of AFH10 & ABJ50, 2014 – Present.
- Member, Information Systems and Technology Committee (AED30), 2016 – Present
- Member, Geospatial Data Acquisition in Design and Construction Committee (AKD70), 2012 – 2023.

IAARC – International Association for Automation and Robotics in Construction

- **Vice President,** Communications, 2019 - Present
- Member, Board of Directors, 2018 – Present

ISPRS – International Society for Photogrammetry and Remote Sensing

- **Co-chair**, Inter Commission Working Group (ICWG) II/Ib - Digital Construction: Reality capture, automated inspection, and integration to BIM

GLF-CEM – The Global Leadership Forum for Construction Engineering and Management Programs

- Member, Future Leaders Ad-hoc Committee, 2021-2022
- Member, Women in Architecture and Construction Group, 2021 – Present

CIB – International Council for Research and Innovation in Building and Construction

- TG90 Task Group on Information Integration in Construction
- W078 Commission on Information Technology for Construction

## C3. Service to the Public

### C3.1. Professionally Related

- **Co-organizer** of virtual coffee hours with faculty members (in Civil, Construction and Architectural Engineering) around the world as part of the ASCE Taskforce on Creating/Fostering Inclusive Academic Communities, 2022-2023.
- **Panelist, Ask Faculty Anything Panel Discussion,** Graduate student Q&A with a panel of faculty, hosted by Iowa State University, December 8, 2021.
- **BIM Demonstration, 2017, 2019 and 2021:** Presented and demonstrated several BIM applications used in the construction industry to high school teachers at the Associated General Contractors Oregon-Colombia Chapter and Willamette Promise High School CTE Teachers and Counselors Externship Day on the OSU campus, August 10, 2017, June 27, 2019, and June 25, 2021.
- **KNEX Design Competition, 2017:** Co-organized and served as one of the judges for the design competition tailored for 8$^{th}$ grade science students at Linus Pauling Middle School in Corvallis, OR, April 10, 2017.
- **Bridge Building Challenge, 2015:** Served as Truss and Innovation Judge for students' (Grades 1 -3) bridge designs at the Ready, Set, Build: Central Iowa's Bridge Building

Challenge event organized by InTrans, Iowa DOT and Iowa Science Center, held at Iowa Science Center, November 7, 2015.

- **Lego Blocks Construction Competition for Children (Grades 1-5), 2015:** Served as one of the three judges at the Lego blocks construction competition hosted by NAWIC (National Association of Women in Construction), January 2015.

# D. Awards

## D1. National and International Awards

- Travel Grant to attend the NSF NHERI Facility – E-Defense Earthquake Center in Kobe, Japan, December 4 - 6, 2019.
- Travel Grant to attend the NSF NHERI Facility – EUCENTRE Collaboration Meeting in Pavia, Italy, September 11-13, 2019.
- Travel Grant to attend the Intensive Training on RAPID Reconnaissance Equipment at the NSF RAPID Facility, Seattle, WA, July 23-26, 2019.
- ASSIST Travel Grant to attend the Academic Leadership for Women Engineers program at the WE18 Conference, Minneapolis, MN, October 17-20, 2018.
- The Associated General Contractors (AGC) Education and Research Foundation, Robert L. Bowen Industry Residency at JE Dunn Construction, Portland, OR, July 1 – August 31, 2018.
- American Society of Civil Engineers (ASCE) ExCEEd Teaching Fellow, 2015.
- Outstanding Reviewer for Elsevier Journal of Automation in Construction, 2015.
- Recognized Reviewer for Elsevier Journal of Advanced Engineering Informatics, 2015.
- Recipient of NSF Travel Grant to attend the 2014 Construction Engineering Conference, CMMI-1353242.
- Best Poster Award, “Mobile 3D Mapping of Large Infrastructure Projects Using Unmanned Aerial Vehicle Systems”, Construction Industry Institute (CII) Annual Conference, 2013.
- Construction Industry Institute (CII) New Scholar, 2013.
- FIATECH Student Scholar, 2011 and 2012.

## D2. University or Community Awards

- Robert C. Wilson Faculty Scholar, Oregon State University, 2023-2025.
- Research Advancement Academy (RAA) Fellow, Oregon State University, 2022.
- Robert C. Wilson Faculty Scholar, Oregon State University, 2017-2019.
- Irene Marguerite McLeod Postgraduate Scholarship, University of Waterloo, 2010.
- Provost Doctoral Entrance Award for Women in Engineering, University of Waterloo, 2008.
- Istanbul Technical University Civil Engineering Faculty Dean's Office Award, 2003.
- Ranked 3$^{rd}$ in department graduates, Geomatics Engineering, Istanbul Technical University, 2003.

# E. Teaching, Advising, and Other Assignments

## E1. Instructional Summary

### E1.1. Credit Courses

| At Oregon State University (OSU) | | | | |
|---|---|---|---|---|
| **Number** | **Course Title** | **Term/Year** | **Credits** | **Enrollment** |
| CE 424/524 | Contracts and Specifications | Winter 2017 | 4 | 84 |
| CE 560 | Special Topics in Geomatics: Advanced Virtual Design & Construction | Spring 2017 | 3 | 3 |
| CE 560 | Special Topics in Geomatics: Advanced Virtual Design & Construction | Fall 2017 | 3 | 9 |
| CE 420/520 | Engineering Planning | Winter 2018 | 4 | 73 |
| CE 424/524 | Contracts and Specifications | Spring 2018 | 4 | 58 |
| CE 420/520 | Engineering Planning | Winter 2019 | 4 | 64 |
| CEM 442 | Building Construction Management | Spring 2019 | 4 | 27 |
| CE 560 | Special Topics in Geomatics: Advanced Virtual Design & Construction | Spring 2019 | 3 | 19 |
| CE 420/520 | Engineering Planning | Winter 2020 | 4 | 66 |
| CEM 442 | Building Construction Management | Spring 2020 | 4 | 69 |
| CCE 528 | Advanced Virtual Design & Construction | Spring 2020 | 4 | 17 |
| CEM 442 | Building Construction Management | Spring 2021 | 4 | 56 |
| CCE 528 | Advanced Virtual Design & Construction | Spring 2021 | 4 | 11 |
| CE 420/520 | Engineering Planning | Winter 2022 | 4 | 56 |
| CEM 442 | Building Construction Management | Spring 2022 | 4 | 51 |
| CCE 528 | Advanced Virtual Design & Construction | Spring 2022 | 4 | 9 |
| CEM 442 | Building Construction Management | Spring 2023 | 4 | 49 |
| CCE 528 | Advanced Virtual Design & Construction | Spring 2023 | 4 | 10 |
| **At Iowa State University (ISU)** | | | | |
| **Number** | **Course Title** | **Term/Year** | **Credits** | **Enrollment** |
| CE 594S | Building Information Modeling | Spring 2013 | 3 | 7 |

| | | | | |
|---|---|---|---|---|
| ConE 222 | Contractor Organization & Management of Construction | Fall 2013 | 3 | 50 |
| ConE 222 | Contractor Organization & Management of Construction | Spring 2014 | 3 | 34 |
| CE 594S | Building Information Modeling | Spring 2014 | 3 | 7 |
| ConE 222 | Contractor Organization & Management of Construction | Fall 2014 | 3 | 51 |
| ConE 222 | Contractor Organization & Management of Construction | Spring 2015 | 3 | 34 |
| CE 594S | Building Information Modeling | Spring 2015 | 3 | 10 |
| ConE 222 | Contractor Organization & Management of Construction | Fall 2015 | 3 | 46 |
| CE 595A | Research Methods in CEM | Fall 2015 | 1 | 6 |
| CE 595C | Research Methods in CEM | Fall 2015 | 1 | 5 |
| ConE 222 | Contractor Organization & Management of Construction | Spring 2016 | 3 | 39 |
| CE 594S | Building Information Modeling | Spring 2016 | 3 | 18 |
| CE 595B | Research Methods in CEM | Spring 2016 | 1 | 6 |

**E1.2. Course and Curriculum Development**

- CCE 528, Advanced Virtual Design and Construction Category II proposal was approved for AY 19 – 20; the course was taught as CCE 528 in Spring 2020. It was offered under CE 560 Special Topics in Geomatics Engineering between Spring 2017 and Spring 2019. This newly developed course on Advanced Virtual Design Construction introduces Building Information Modeling (BIM) concepts, BIM Applications, BIM for Facility Management, and Integrated Project Delivery.
- Completed the Center for Teaching and Learning Hybrid Learning program at OSU to redesign and offer CEM 442 Building Construction Management as a hybrid course between Spring 2020 and Spring 2022.

**E1.3. Team or Collaborative Efforts**

- ECampus online course development project for CEM 442 together with Dr. Catarina Pestana. The first offering of this course as an ECampus class was Spring 2023.

**E1.4. International Teaching**

December 11-22, 2017, Construction Drafting Reading, Guangxi Poly Construction College, Nanning, Guangxi Province, China.

## E2. Advising

### E2.1. Graduate Advisees – Completed

| Student | Degree | Thesis | Graduated |
|---|---|---|---|
| 1. Saifaldawlah Ahmed Mhaimeed Al-Hamadani (co-advised with Dr. Joseph Louis) | MS | *Mitigating wildfire impacts on mobility using GIS, fire simulation, and operations modeling* | Fall 2023 |
| 2. Qi Sun (co-advised with Dr. Erica Fischer) | PhD | *Fire simulation in mass timber structures to inform passive fire protection sequencing* | Spring 2023 |
| 3. Yang Zhou (co-advised with Dr. Erzhuo Che) | MS | *Virtual ADA Compliance Assessment of Curb Ramps using Lidar Point Clouds: A Framework to Simulate Digital Inclinometers for Slope Measurements.* | Summer 2022 |
| 4. Ryan Patrick Holt Longman (co-advised with Dr. Mariapaola Riggio) | MS | *In-plane Creep Behavior of Cross-laminated Timber and Mass Plywood Panels: A Methodology to Evaluate the Long-term Performance of Post-tensioned Mass Timber Walls* | Fall 2021 |
| 5. Nisha Puri | PhD | *Progress Monitoring and Quality Assessment / Quality Control of Construction Projects using Lidar and BIM* | Spring 2019 |
| 6. Wylie Ferron | MS | *Roadmap for BIM Adoption and Implementation by Small Sized Construction Companies* | Fall 2018 |
| 7. Qi Sun | MS | *A BIM Based Simulation Framework for Fire Evacuation Planning* | Spring 2018 |
| 8. Yiye Xu | MS | *Bridge Inspection Using Bridge Information Modeling (BrIM) and Unmanned Aerial Systems (UASs)* | Spring 2018 |
| 9. Fangyu Guo (co-advised with Prof. Charles T. Jahren at ISU) | PhD (ISU) | *Civil Integrated Management and the implementation of CIM-related technologies in the transportation industry* | Fall 2016 |
| 10. Firas Shalabi | PhD (ISU) | *BIM framework for energy and maintenance performance assessment for facility management* | Summer 2016 |
| 11. Abhimanu Goyal | MS (ISU) | *A Novel Bridge Information Modeling (BrIM) Based Framework for Bridge Inspections* | Spring 2016 |

## E2.2. Graduate Advisees – Current

| Student | Degree | Expected Graduation | Advanced to Candidacy (Y/N) |
|---|---|---|---|
| 1. Yiye Xu | PhD | Summer 2023 | Y |
| 2. Donghoon Ji | PhD | Spring 2025 | N |
| 3. Igor Tiago Lopes | PhD | Spring 2026 | N |

## E2.3. Graduate Thesis or Project Committees

**MEng Advisor:**

***Graduated***

1. Reece Randle Roberts, MEng, Fall 2021
2. Hongyu Lu, MEng., Summer 2020
3. Ange Yang, MEng., Spring 2020
4. Paul Hill, MEng., 2019
5. Liangyu Tan (ISU), MEng, 2016

***Current***

None

**Minor Professor or Committee Member:**

***Graduated***

1. Chonnapat Opanasopit, MS, 2023.
2. Rashed Alsharif, PhD, 2023 (Monash University, Department of Civil Engineering, Australia)
3. Serey Raksa Moeung, MS., 2022.
4. Neshat Bolourian, Ph.D., 2022 (Concordia University, Department of Building, Civil, and Environmental Engineering, Canada)
5. Maryam Alkaissy, Ph.D., 2022 (Monash University, Department of Civil Engineering, Australia)
6. Ziyu Jin, Ph.D., 2021.
7. Shafayet Ahmed, Ph.D., 2021.
8. Linkai Guan, MEng, 2021.
9. Jisoo Park, Ph.D., 2020 (Georgia Institute of Technology, Department of Civil Engineering).
10. Tianzhuo Zhang, MEng, 2020.
11. Ola Al-saffar, MS, 2020.
12. Shubham Nitin Surana, MEng, 2020.
13. Songyang Wu, MEng, 2020.
14. Manoj Kumar Basava Sharana, MEng, 2019.
15. Erzhuo Che, PhD, 2018.
16. Kelsey Chan, MS, 2018.
17. Yimeng Song, MEng, 2017.
18. Xu Wei, MEng, 2017.
19. Yue Feng, MEng, 2017.
20. Shiyu Wen, MEng, 2017.
21. Tuyen Thanh Le (ISU), PhD, 2017.

22. Ahmed Fathy Abdelat, (ISU), Ph.D., 2017.
23. Jorge A. Rueda (ISU), Ph.D., 2016.
24. Ayush Sharma (ISU), MS, 2015.
25. Catalina Miller (ISU), Ph.D., 2015.

***Current***

1. Hang Zhao, PhD (University of Melbourne, Department of Infrastructure Engineering, Australia)
2. Yifan Zhu, PhD (City University of Hong Kong, Department of Architecture and Civil Engineering, Hong Kong)
3. Kenneth Kwabena Kenney, MS
4. Caleb Ogbeta, PhD
5. Roshan Panahi, PhD
6. Xiaofei Yang, PhD (University of Auckland, Department of Civil and Environmental Engineering, New Zealand)

**Graduate Council Representative:**

1. Emily Rose Scheide, PhD, 2023 (MIME)
2. Prashant Kumar, PhD, 2023 (Computer Science)
3. Anurag Koul, PhD, 2023 (Computer Science)
4. Nicholas Zerber, PhD, 2023 (MIME)
5. Wenxuan Wu, PhD, 2023, (Computer Science)
6. Kelsey Johnson, PhD, 2022 (Applied Economics)
7. Damon George, MS, 2021 (Computer Science)
8. Jeffrey Young, PhD, 2021 (Computer Science)
9. Mohamad Hosein Danesh, MS, 2021 (Computer Science)
10. Yunfan Li, PhD, 2021 (Computer Science)
11. Kimia Tajik, PhD, 2021 (Computer Science)
12. Enna Sachdeva, MS, 2020 (Robotics)
13. Nick Zerbel, PhD, 2020 (Robotics)
14. Mihai Dan, MS, 2019 (Computer Science)
15. Vahid Ghadakchi, PhD, 2019 (Computer Science)
16. Shauharda Khadka, PhD, 2019 (Mechanical Engineering)
17. Cheng Gao, MS, 2019 (Electrical and Computer Engineering)
18. Zehuan Chen, MS, 2019 (Computer Science)
19. Sara Cantu, PhD, 2019 (Counseling)
20. Muslum Ozgur Ozmen, MS, 2018 (Computer Science)
21. Karl J. Smeltzer, PhD, 2018 (Computer Science)
22. Jacob Beck, PhD, 2018 (Robotics)
23. Michael Polander, MS, 2018 (Mechanical Engineering)
24. Yunfan Li, MS, 2018 (Computer Science)
25. Stephen Wong, PhD, 2018 (Counseling)
26. Lauren Milliken, MS, 2017 (Mechanical Engineering)
27. Trevor Fiez, MS, 2017 (Computer Science)
28. Amirhosein Azarbakht, PhD, 2017 (Computer Science)
29. Samantha Hemleben, MS, 2017 (Robotics)
30. Sultana Z. Fouzia, MPP, 2016 (Public Policy)

### E2.4. Undergraduate Research Assistants

1. Jaylen Carr, NSF funded Engineering for Bouncing Back REU (Summer 2019)
2. Miguel Gaspar Marquez (Winter 2017 – Fall 2017)
3. Lucas Tito (ISU) (Summer 2015)
4. Kyle Younkin (ISU) (Spring 2015)
5. Duong Van (ISU) (Spring 2013 – Fall 2013)

### E2.5. Other Advising

- **Adviser for CS 461 Senior Capstone Project**, 2018 – 2019 AY
  Mixed Reality application development for infrastructure maintenance.
- **Adviser for Reno Virtual Design and Construction (VDC) Team**, Fall 2017 & 2018.
- **Adviser for CCEE Department Software Exploration Student Club (ISU),** 2013 – 2016.
  During this period the group organized several professional development activities such as software training and hosting industry speakers.
- **Faculty Mentor for Learning Community (ConE 122) Students (ISU)**, Fall 2013 – Spring 2016.

## E3. Other Instruction Related Assignments

- Traveled and attended the 2020 Student Bid Competition organized by the Northwest Construction Consumer Council (NWCCC) with 12 CEM students, in Seattle, WA, Jan. 27-28, 2020.
- Traveled and attended the 2019 Student Bid Competition organized by the Northwest Construction Consumer Council (NWCCC) with 12 CEM students, in Tacoma, WA, Jan. 22-23, 2019.
- Traveled and attended the Collaborative Leadership Training with 30 CEM students, Las Vegas, NV, Oct 30 – Nov 1, 2017.