

**1. Personal details**

Name: Prof Ioannis Brilakis Faculty/Department: Engineering  
 Current appointment: Laing O'Rourke Professor (since 1 Oct. 2021) Date of appointment: 1 August 2012

**2. Education/Qualifications**

PhD in Civil Engineering	University of Illinois, Urbana-Champaign, USA	2002-2005
PhD Certificate in Engineering Computational Science	University of Illinois, Urbana-Champaign, USA	2002-2005
MS in Civil Engineering	University of Illinois, Urbana-Champaign, USA	2001-2002
MS Certificate in Engineering Computational Science	University of Illinois, Urbana-Champaign, USA	2001-2002
Diploma in Civil Engineering	University of Patras, Greece	1996-2001

**3. Professional History**

Startup Co-Founder	Didimi (also Board Chairman & Chief Scientist)	2023 – Date
Co-Founder & Vice-Chair	Roads Research Alliance, National Highways, UK	2021 – Date
Laing O'Rourke Professor	Department of Engineering, University of Cambridge, UK	2021 – Date
Laing O'Rourke Reader	Department of Engineering, University of Cambridge, UK	2017 – 2021
Laing O'Rourke Lecturer	Department of Engineering, University of Cambridge, UK	2012 – 2017
Start-up Co-Founder	Pointivo Inc., Atlanta, GA	2011 – 2012
Assistant Professor	Schools of Build. Con. & Civil & Env. Engineering <i>Georgia Institute of Technology, USA</i>	2009 – 2012
Construction Consultant	Technical & Management Consulting for Aposelemis <i>Dam Project, Crete, Greece, Aposelemis Consulting Joint Venture</i>	2008 – 2011
Assistant Professor	Civ. & Env. Engineering, University of Michigan, Ann Arbor, USA	2005 – 2008
Design Consultant	620 m2 multi-story commercial building, Iraklion, Greece	2006 – 2007

**4. Other Appointments and Affiliations**Visiting Appointments

Honorary Professor	Dept. of Arch. & Civil Engineering, City University, Hong Kong	2024 – 2026
Honorary Professor	Dept. of Real Estate & Con., Uni. of Hong Kong, Hong Kong	2024 – 2026
Visiting Professor	Dept. of Civil Engineering, Beijing Uni. Of Tech., China	2024 – 2026
Foreign Professor	Academy of Fine Arts, Minzu University, China	2023 – 2025
Visiting Professor	IoT Trust, Info. Hub, HKUST, Guangzhou, China	2024
Hans Fischer Senior Fellow	Institute of Advanced Studies, TU Munich, Germany	2019 – 2023
Visiting Research Fellow	School of Des. & the Built Env., Curtin University, Australia	Spring 2019
Visiting Professor	Civ., Geo & Env. Engineering, TU Munich, Germany	2018 – 2019
Visiting Associate Professor	Department of Computer Science, Stanford University, USA	Summer 2014
Visiting Scholar	Civ. & Env. Engineering, Carnegie Mellon University, USA	2004 – 2005

Membership of Cambridge Colleges, Professional Bodies and Learned Societies

Fellow, Clare Hall, University of Cambridge	Since 2024
Fellow, Durham Institute of Research, Development, and Invention, Durham University	Since 2024
Honorary Member, Italian Society of Science, Technology, Engineering for Architecture (ISTEA)	Since 2023
Member, Institution of Civil Engineers (ICE)	Since 2022
Chartered Engineer (Reg. # 691404), Engineering Council, UK	Since 2022
Fellow (Reg. #PR239343), Higher Education Association, UK	Since 2022
Honorary Member, Indian Building Information Modelling Association (IBIMA)	Since 2018
Member, Association of Researchers in Construction Management (ARCOM)	Since 2017
Member, UK Engineering Professors' Council (EPC)	Since 2015
Member, International Association for Automation and Robotics in Construction (IAARC)	Since 2010
Member, ASCE CI Construction Research Council (CRC)	Since 2006
Member, European Group for Intelligent Computing in Engineering (EG-ICE)	Since 2006
Member, American Society for Engineering Education (ASEE)	Since 2005
Member (09-Date) & Associate Member (03-09), American Society of Civil Engineers (ASCE)	Since 2003
Chartered Engineer (Reg. # 94823), Technical Chamber of Greece (TEE)	Since 2003
Senior Research Fellow, Churchill College, University of Cambridge	2024-2029

Affiliate, Transportation Research Board (TRB)	2006-2012
Member, Society for Business and Management in Engineering (SBME)	2001-2005

#### Membership of Advisory Bodies

Member, Visualization, Information Modelling & Simulation Committee, CD, ASCE	2010-Date
Vice President for Publications (17-Date) and Member (13-Date), Board of Directors <i>International Association for Automation &amp; Robotics in Construction (IAARC)</i>	2013-Date
Member, Cambridge Robotics and Autonomous Systems Team, UK RAS Network, EPSRC	2016-Date
Member, Best Paper Awards Committee, JCCE journal, ASCE	2018-Date
Member, AED30 Information Systems and Technology Committee <i>Transportation Research Board (TRB), US National Research Council (NRC) of the National Academies</i>	2007-2025
Past-Chair (19-21) & Chair (17-19), European Council for Computing in Construction	2017-2021

#### Peer Review Activities

Member of the EPSRC Peer Review College (20-Date) & Associate College (16-20)	Since 2016
Reviewed and participated in panels for > 80 proposals for agencies such as: <i>UK Eng. &amp; Physical Sciences Res. Council (since 2014); Natural Sciences and Engineering Research Council of Canada (since 2009); CMMI Division, US National Science Foundation (2009-2012), etc.</i>	Since 2009
Reviewed several books in Construction Engineering and Management for John Wiley & Sons	Since 2009
Reviewed > 300 conference papers and >600 abstracts as technical committee member	Since 2005
Reviewed > 420 papers for 32 journals in the areas of Construction Engineering and Computing in Engineering (ASCE Computing in Civil Engineering, Construction Engineering & Management, Transportation Engineering; Elsevier Advanced Engineering Informatics, Automation in Construction, etc.)	Since 2005

#### Current Editorships

Associate Editor	Journal of AI in Civil Engineering, Springer Nature	2021-Date
Section Editor, Construction Tech.	Technologies Journal, MDPI	2018-Date
Editorial Review Board Member	Journal of Engineering, Con. & Arch. Management, Emerald	2015-Date
Editorial Board Member	Journal of Automation in Construction, Elsevier	2013-Date
Associate Editor	Journal of Computing in Civil Engineering, ASCE	2008-Date
Editorial Board Member	Journal of Advanced Engineering Informatics, Elsevier	2008-Date
Specialty Editor (09-Date) & Assistant SE (06-09), IT area, J. of Con. Eng. & Management, ASCE		2006-Date

#### **5. Prizes, Awards, and other Honours** (citations are provided where appropriate)

Delivering Sustainability with Digital Innovation Award for [G118], Digital Construction Awards, UK	2025
Innovation Award in Digital Futures for [GL30], IET, UK	2024
Tucker-Hasegawa Award, International Association for Automation & Robotics in Construction, Sydney	2024
Scherer Award, European Council for Computing in Construction, Brussels	2022
Thorpe Medal, for paper [J85], European Council for Computing in Construction, Brussels	2022
Outstanding Reviewer Award, Journal of Computing in Civil Engineering, ASCE, USA	2022
ISARC 2020 Best Paper Award (out of 221 papers), for paper [C139] co-authored with [S17]	2020
Hans Fischer Senior Fellowship & €60,000 cash prize, TUM-IAS, Germany	2019
J. James R. Croes Medal, for paper [J61] co-authored with [R4]. ASCE, USA	2019
FARU 2019 Best Paper Award (out of 50 papers), for paper [C135] co-authored with [S17]	2019
John O. Bickel Award, for paper [J57] co-authored with [S10]. ASCE, USA	2018
RISE Award for poster [CP14] co-authored with [S13; S15], SEEDS, Ireland	2018
Innovation Award in Information Technology for [GI8], IET, UK	2018
1 <sup>st</sup> Prize (shared), LC3 Innovation Competition, for the research outcomes of [S9; S16]	2017
1 <sup>st</sup> Prize (shared), LC3 Innovation Competition, for the research outcomes of [S13]	2017
2 <sup>nd</sup> Prize, LC3 Innovation Competition, for the research outcomes of [S10]	2017
Outstanding Reviewer Award, ASCE, USA	2016
ICCCBE 2016 Best Paper Award (out of 250 papers) for paper [C110] co-authored with [S9; R6]	2016
Charles M. Eastman Best Paper Award (out of 283 papers) for paper [C83] co-authored with [S5]	2014
EG-ICE Best Paper Award (out of 41 papers) for paper [C89] co-authored with [S8]	2014
ICCEPM Best Paper Award (out of 130 papers), for paper [C69] co-authored with [S6]	2013
Collingwood Prize, for paper [J20] co-authored with [S1; S3]. ASCE, USA	2013
CETI Intelligent and Automated Construction Job Site Project Award with [S5], FIATECH, USA	2012
CETI Outstanding Early Career Researcher Award, FIATECH, USA	2012

Faculty Award for Academic Outreach, Georgia Institute of Technology, USA	2012
White House PAESMEM Award for mentoring excellence, ACE, USA	2011
Thank a Teacher Certificate, Georgia Institute of Technology, USA	2011
NSF CAREER Award, National Science Foundation, USA	2010
CRC Best Paper Award (best paper out of 152 papers), for paper [C18] co-authored with [S1]	2009
Associate Editors Award, American Society of Civil Engineers (ASCE), USA	2009
Distinguished Scientist Abroad Award, Hellenic National Defence General Staff, Greece	2006
Athanasiaides Scholarship, Christina Athanasiades Foundation, USA	2002
Award & Scholarship, Technical Chamber of Greece, Greece	2001

Directly supervised students, post-doctoral research associates and visitors are underlined.

### 1. Peer-reviewed Journal Papers (J)

- [J127]. Davletshina, D., Reja, V.K. and Brilakis, I. (2025) "[A State of Art Review on Constructing and Maintaining Road Geometric Digital Twins](#)", *J. of Computing in Civil Engineering*, ASCE, accepted
- [J122]. Pang, E., Davletshina, D., Marie d'Avigneau, A., Park, N., de Silva, L. and Brilakis, I. (2025) "[Digitalising Road Maintenance: A Novel Approach for the Preparation and Integration of 2D and 3D Road Data Through Image Shadow Removal and Point Cloud Densification](#)", *J. of Computing in Civil Engineering*, ASCE, accepted
- [J129]. Mok, C.Y.F., de Silva, L., Reja, V.K., Green, S., Brilakis, I. (2025) "[Data-efficient classification of road inspection texts with a semantic similarity criterion](#)", *J. of Advanced Engineering Informatics*, Elsevier, 67, September 2025, 24p., DOI 10.1016/j.aei.2025.103509
- [J128]. Davletshina, D., Reja, V.K. and Brilakis, I. (2025) "[Automating Maintenance of Road Geometric Digital Twins Through Single Scan Instance Aware Point Cloud Change Retrieval](#)", *J. of Advanced Engineering Informatics*, Elsevier, 67, September 2025, 16p., DOI 10.1016/j.aei.2025.103476
- [J125]. Hagedorn, P., Fauth, J., Seiss, S., Zentgraf, S., Brilakis, I., Koenig, M. (2025) "[OntoBPR: An ontology-based framework for performing building permit reviews using standardized information containers](#)", *J. of Advanced Engineering Informatics*, Elsevier, 66, July 2025, 24p., DOI 10.1016/j.aei.2025.103369
- [J124]. Lu, L., Marie d'Avigneau, A., Pan, Y., Sun, Z., Luo, H. and Brilakis, I. (2025) "[Modelling Heterogeneous Spatiotemporal Pavement Data for Condition Prediction and Preventive Maintenance in Digital Twin-enabled Highway Management](#)", *J. of Automation in Construction*, Elsevier, 174, June 2025, 19p., DOI 10.1016/j.autcon.2025.106134
- [J123]. Wong, M.O., Sun, Y., Ying, H., Yin, M., Zhou, H., Brilakis, I., Kelly, T., Lam, C.C. (2025) "[Image-based Scan-to-BIM for Interior Building Component Reconstruction](#)", *J. of Automation in Construction*, Elsevier, 173, May 2025, 27p., DOI 10.1016/j.autcon.2025.106091
- [J120]. Zhu, J., Nisbet, N., Yin, M., Wei, R. and Brilakis, I. (2025) "[Releasing the Power of Graph for Building Information Discovery](#)", *J. of Automation in Construction*, Elsevier, 172, April 2025, 17p., DOI 10.1016/j.autcon.2025.106034
- [J126]. Zhang, J., Ding, L., Wang, W., Wang, H., Brilakis, I., Davletshina, D., Heikkila, R. and Yang, X. (2025) "[Crack segmentation-guided measurement with lightweight distillation network on edge device](#)", *J. of Computer-Aided Civil and Infrastructure Engineering*, Wiley, 40(16), March 2025, pp. 2269-2286, 18p., DOI 10.1111/mice.13446
- [J121]. Zhang, J., Yang, X., Wang, W., Wang, H., Brilakis, I., Davletshina, D., Heikkila, R. and Ding, L. (2025) "[Crack Segmentation Guided Measurement with Lightweight Distillation Network on Edge Device](#)", *J. of Computer Aided Civil and Infrastructure Engineering*, Wiley, March 2025, 18p., DOI 10.1111/mice.13446
- [J119]. Yin, M., Reja, V.K., Wei, R., Brilakis, I., Sheil, B., Perrotta, F., Marie d'Avigneau, A. and Lu, L. (2025) "[Exploring the Value of Digital Twins for Information Management in Highway Asset Maintenance](#)", *J. of Developments in the Built Environment*, Elsevier, 21, March 2025, 21p., DOI 10.1016/j.dibe.2025.100614
- [J118]. Zhu, J., Wong, M.O., Nisbet, N., Xu, J., Kelly, T., Zlatanova, S. and Brilakis, I. (2025) "[Semantics-based Connectivity Graph for Indoor Pathfinding Powered by IFC-Graph](#)", *J. of Automation in Construction*, Elsevier, 171, March 2025, 19p., DOI 10.1016/j.autcon.2025.106019
- [J117]. Zhou, S., Lin, J., Pan, P., Pan, Y., and Brilakis, I. (2025) "[Impact of Colour and Mixing Proportion of Synthetic Point Clouds on Semantic Segmentation](#)", *J. of Automation in Construction*, Elsevier, 171, March 2025, 16p., DOI 10.1016/j.autcon.2025.105963
- [J116]. Marie d'Avigneau, A., Potseluyko, L., Anvo, N.R., Taha-Abdalgadir, H., Reja, V.K., Davletshina, D., Lam, P.H., de Silva, L., Al-Tabbaa, A. and Brilakis, I. (2025) "[CAMHighways: The Cambridge Highways dataset](#)", *J. of Advanced Engineering Informatics*, Elsevier, 64, March 2025, 25p., DOI 10.1016/j.aei.2024.103036
- [J115]. Lu, L., Yin, M., Xie, Y., Pan, Y., Wang, M. and Brilakis, I. (2025) "[Development of A Trustworthy AI-supported Digital Twin Framework for Road Operation and Maintenance](#)", *J. of Smart Construction*, ELSP, 2(1), January 2025, 28p., DOI 10.55092/sc20250001
- [J114]. Buuveibaatar, M., Brilakis, I., Peck, M., Economides, G. and Lee, W. (2025) "[A Conceptual Framework for Planning Road Digital Twins](#)", *J. of Buildings*, MDPI, 15(3), 316, January 2025, 36p., DOI 10.3390/buildings15030316
- [J113]. Zhang, J., Yang, X., Wang, W., Brilakis, I., Davletshina, D. and Wang, H. (2025) "[Robust ELM-PID Tracing Control on Autonomous Mobile Robot via Transformer-based Pavement Crack Segmentation](#)", *J. of Measurement: Journal of the International Measurement Confederation*, Elsevier, 242, January 2025, 16p., DOI 10.1016/j.measurement.2024.116045
- [J112]. Davletshina, D., Reja, V.K. and Brilakis, I. (2024) "[Automating Construction of Road Digital Twin Geometry Using Context and Location Aware Segmentation](#)", *J. of Automation in Construction*, Elsevier, 168(A), December 2024, 17p., DOI 10.1016/j.autcon.2024.105795
- [J111]. Kookalani, S., Parn, E., Brilakis, I., Dirar, S., Theofanous, M., Faramarzi, A., Mahdavi-pour, M.A. and Feng, Q. (2024) "[Trajectory of Building and Structural Design Automation from Generative Design Towards the](#)

- [Integration of Deep Generative Models and Optimization: A Review](#)", *J. of Building Engineering*, Elsevier, 97, November 2024, 35p., DOI 10.1016/j.jobe.2024.110972
- [J110]. Wang, M., Wang, C.C., Zlatanova, S., Shen, X. and Brilakis, I. (2024) "[A Streamlined Laser Scanning Verticality Check Method for Installation of Prefabricated Wall Panels](#)", *J. of Construction Engineering and Management*, ASCE, 150(11), November 2024, 18p., DOI 10.1061/JCEMD4.COENG-14989
- [J109]. Xu, J., Anvo, N.R., Taha-Abdalgadir, H., Marie d'Avigneau, A., Palin, D., Wei, R., Hadjidemetriou, G., Schaefer, S., de Silva, L., Al-Tabbaa, A., Iida, F. and Brilakis, I. (2024) "[Highway Digital Twin-Enabled Autonomous Maintenance Plant \(AMP\): A Perspective](#)", *J. of Data Centric Engineering*, Cambridge University Press, 5(e24), October 2024, 16p., DOI: 10.1017/dce.2024.34
- [J108]. Pan, Y., Wang, M., Lu, L., Wei, R., Cavazzi, S., Peck, M. and Brilakis, I., (2024) "[Scan-to-Graph: Automatic Generation and Representation of Highway Geometric Digital Twins from Point Cloud Data](#)", *J. of Automation in Construction*, Elsevier, 166, October 2024, 13p., DOI 10.1016/j.autcon.2024.105654
- [J107]. Jiang, Y., Su, S., Zhao, S., Zhong, R.Y., Qiu, W., Skibniewski, M.J., Brilakis, I. and Huang, G.Q. (2024) "[Digital Twin-Enabled Synchronized Construction Management: A Roadmap from Construction 4.0 towards Future Prospect](#)", *J. of Developments in the Built Environment*, Elsevier, 19, October 2024, 22p., DOI 10.1016/j.dibe.2024.100512
- [J106]. Lin, X., Lu, Q., Chen, L. and Brilakis, I. (2024) "[Assessing Dynamic Congestion Risks of Flood-disrupted Transportation Network Systems through Time-variant Topological Analysis and Traffic Demand Dynamics](#)", *J. of Advanced Engineering Informatics*, Elsevier, 62(A), October 2024, 15p., DOI 10.1016/j.aei.2024.102672
- [J105]. Malihi, S., Potseluyko, L., Mathew, A., Alavi, H., Kumar, V.K., Pan, Y., Binni, L., Wang, G., Wang, X. and Brilakis, I. (2024) "[Review of multimodal data and their applications for road maintenance](#)", *J. of Smart Construction*, ELSP, 1(2), September 2024, 39p., DOI 10.55092/sc20240010
- [J104]. Drobnyi, V., Li, S. and Brilakis, I. (2024) "[Digitisation of Existing Buildings with Arbitrary Shaped Spaces from Point Clouds](#)", *J. of Computing in Civil Engineering*, ASCE, 38(5), September 2024, 12p., DOI 10.1061/JCCEE5.CPENG-5853
- [J103]. Zhang, Y., Marie d'Avigneau, A., Hadjidemetriou, G., de Silva, L., Girolami, M. and Brilakis, I. (2024) "[Bayesian Dynamic Modelling for Probabilistic Prediction of Pavement Condition](#)", *J. of Engineering Applications of Artificial Intelligence*, Elsevier, 133(F), July 2024, 13p., DOI 10.1016/j.engappai.2024.108637
- [J102]. Chen, J., Chan, I. and Brilakis, I. (2024) "[Shifting Research from Defect Detection to Defect Modelling in Computer Vision-based Structural Health Monitoring](#)", *J. of Automation in Construction*, Elsevier, 164, May 2024, 16p., DOI 10.1016/j.autcon.2024.105481
- [J101]. Zhang, J., Yang, X., Wang, W., Brilakis, I., Davletshina, D., Wang, H. and Cao, M. (2024) "[Segment-to-track for Pavement Crack with Light-Weight Neural Network on Unmanned Wheeled Robot](#)", *J. of Automation in Construction*, Elsevier, 161, May 2024, 15p., DOI 10.1016/j.autcon.2024.105346
- [J100]. Drobnyi, V., Li, S., and Brilakis, I. (2024) "[Connectivity Detection for Automatic Construction of Building Geometric Digital Twins](#)", *J. of Automation in Construction*, Elsevier, 159, March 2024, 14p., DOI 10.1016/j.autcon.2024.105281
- [J99]. Jacobsen, E.L., Teizer, J., Wandahl, S. and Brilakis, I. (2024) "[Probabilistic Forecasting of Construction Labour Productivity Metrics](#)", *J. of Information Technology in Construction*, Elsevier, 29, February 2024, pp. 58-83, 26p., DOI 10.36680/j.itcon.2024.004
- [J98]. Hu, Z. and Brilakis, I. (2023) "[Matching Design-Intent Planar, Curved, and Linear Structural Instances in Point Clouds](#)", *J. of Automation in Construction*, Elsevier, 158, December 2023, 22p., DOI 10.1016/j.autcon.2023.105219
- [J97]. Ariyachandra, M.R.M.F. and Brilakis, I. (2023) "[Leveraging Railway Topology to Automatically Generate Track Geometric Information Models from Airborne LiDAR Data](#)", *J. of Automation in Construction*, Elsevier, 155, November 2023, 19p., DOI 10.1016/j.autcon.2023.105068
- [J96]. Xie, H., Hong, Y., Xin, M., Brilakis, I. and Shi, O. (2023) "[Identification and Analysis of Communication Barriers for Construction Projects with Time Uncertainties](#)", *J. of Engineering, Construction and Architectural Management*, Emerald Publishing, August 2023, 29p, DOI 10.1108/ECAM-07-2022-0669
- [J95]. Drobnyi, V., Hu, Z., Fathy, Y. and Brilakis, I. (2023) "[Construction and Maintenance of Building Geometric Digital Twins: State of the Art Review](#)", *Sensors*, 23(9), 4382, April 2023, MDPI, DOI 10.3390/s23094382
- [J94]. Trzeciak, M. and Brilakis, I. (2023) "[Dense 3D reconstruction of building scenes by AI-based camera-lidar fusion and odometry](#)", *J. of Computing in Civil Engineering*, 37(4), March 2023, 48 p., ASCE, DOI 10.1061/JCCEE5.CPENG-4909
- [J93]. Trzeciak, M., Pluta, K., Fathy, Y., Alcalde, L., Chee, S., Bromley, A., Brilakis, I., and Alliez, P. (2023) "[ConSLAM: Construction Dataset for SLAM](#)", *J. of Computing in Civil Engineering*, 37(3), March 2023, 38 p., ASCE, DOI 10.1061/JCCEE5.CPENG-5212
- [J92]. Pan, Y., Braun, A., Borrmann, A. and Brilakis, I. (2023) "[3D deep learning enhanced void-growing approach in creating geometric digital twins of buildings](#)", *P. of the Institution of Civil Engineers*, 176(1), January 2023, pp. 24-40, 17 p. ICE, DOI 10.1680/jsmic.21.00035
- [J91]. Rogage, K., Mahamedi, E., Brilakis, I. and Kassem, M. (2022) "[Beyond Digital Shadows: A Digital Twin for monitoring earthwork operation in large infrastructure projects](#)", *J. of AI in Civil Engineering*, 1(7), December 2022, 24 p., Springer, DOI 10.1007/s43503-022-00009-5

- [J90]. Tetteh, M.O, Chan, P.C., Darko, A., Jafari, A., [Chen, W.](#), Brilakis, I. and Chen, CST (2022) "[Scientometric mapping of global research on green retrofitting of existing buildings \(GREB\): Pathway towards a holistic GREB framework](#)", *J. of Energy & Buildings*, Elsevier, 277, October 2022, 20 p., DOI 10.1016/j.enbuild.2022.112532
- [J89]. [Hong, Y.](#), [Xie, H.](#) and Brilakis, I. (2022) "[Improving the accuracy of schedule information communication between humans and data](#)", *J. of Advanced Engineering Informatics*, Elsevier, 53, August 2022, 14 p., DOI 10.1016/j.aei.2022.101645
- [J88]. [Pan, Y.](#), [Braun, A.](#), Brilakis, I. and [Borrmann, A.](#) (2022) "[Enriching Geometric Digital Twins of Buildings with Small Objects by Fusing Laser Scanning and AI-based Image Recognition](#)", *J. of Automation in Construction*, Elsevier, 140, August 2022, 19p., DOI 10.1016/j.autcon.2022.104375
- [J87]. [Hong, Y.](#), [Xie, H.](#), [Hovhannisyann, V.](#) and Brilakis, I. (2022) "[A graph-based approach for unpacking construction sequence analysis to evaluate schedules](#)", *J. of Advanced Engineering Informatics*, Elsevier, 52, April 2022, 16 p., DOI 10.1016/j.aei.2022.101625
- [J86]. [Assadzadeh, A.](#), [Arashpour, M.](#), Brilakis, I., [Ngo, T.](#) and [Konstantinou, E.](#) (2022) "[Vision-Based Excavator Pose Estimation Using Synthetically Generated Datasets with Domain Randomization](#)", *J. of Automation in Construction*, Elsevier, 134, February 2022, 12 p., DOI 10.1016/j.autcon.2021.104089
- [J85]. [Argyroudis, S.A.](#), [Mitoulis, S.A.](#), [Chatzi, E.](#), [Baker, J.W.](#), Brilakis, I., [Gkoumas, K.](#), [Vousdoukas, M.](#), [Hynes, W.](#), [Carluccio, S.](#), [Keou, O.](#), [Frangopol, M.D.](#) and [Linkov, I.](#) (2022) "[Digital Technologies Can Enhance Climate Resilience of Critical Infrastructure](#)", *J. of Climate Risk Management*, Elsevier, 35, January 2022, 24 p., DOI 10.1016/j.crm.2021.100387, **received the EC3 2022 Thorpe Medal**
- [J84]. [Fitzsimmons, J.P.](#), [Lu, R.](#), [Hong, Y.](#) and Brilakis, I. (2022) "[Construction Schedule Risk Analysis – A Hybrid Machine Learning Approach](#)", *J. of Information Technology in Construction*, 27, January 2022, pp. 70-93, 24 p., DOI 10.36680/j.itcon.2022.004
- [J83]. [Agapaki, E.](#) and Brilakis, I. (2021) "[CLOI: An Automated Benchmark Framework for Generating Geometric Digital Twins of Industrial Facilities](#)", *J. of Construction Engineering and Management*, ASCE, 147(11), November 2021, 18 p., DOI 10.1061/(ASCE)CO.1943-7862.0002171
- [J82]. [Agapaki, E.](#), and Brilakis, I. (2021) "[Instance Segmentation of Industrial Point Cloud Data](#)", *J. of Computing in Civil Engineering*, ASCE, 35(6), November 2021, 24 p., DOI 10.1061/(ASCE)CP.1943-5487.0000972
- [J81]. [Swanborough, J.](#), [Kim, M.K.](#), [Agapaki, E.](#) and Brilakis, I. (2021) "[Automated Optimum Visualisation System for Construction Drawing Reading](#)", *J. of Information Technology in Construction*, 26, October 2021, Pp. 681 – 696, 16p., DOI 10.36680/j.itcon.2021.036
- [J80]. [Hong, Y.](#), [Xie, H.](#), [Bhumbra, G.](#) and Brilakis, I. (2021) "[Comparing Natural Language Processing Methods to Cluster Construction Schedules](#)", *J. of Construction Engineering and Management*, ASCE, 147(10), October 2021, 11 p., DOI 10.1061/(ASCE)CO.1943-7862.0002165
- [J79]. [Sacks, R.](#), Brilakis, I., [Pikas, E.](#), [Xie, S.H.](#) and [Girolami, M.](#) (2020) "[Construction with Digital Twin Information Systems](#)", *J. of Data Centric Engineering*, CUP, 1(e14), November 2020, 26 p., DOI 10.1017/dce.2020.16
- [J78]. [Sacks, R.](#), [Girolami, M.](#) and Brilakis, I. (2020) "[Building Information Modelling, Artificial Intelligence and Construction Tech](#)", *J. of Developments in the Built Environment*, Elsevier, 4, November 2020, 9 p., DOI 10.1016/j.dibe.2020.100011
- [J77]. [Ariyachandra, M.R.M.F.](#) and Brilakis, I. (2020) "[Detection of Railway Masts in Air-Borne LiDAR Data](#)", *J. of Construction Engineering and Management*, ASCE, 146(9), September 2020, 12 p., DOI 10.1061/(ASCE)CO.1943-7862.0001894
- [J76]. [Agapaki, E.](#) and Brilakis, I. (2020) "[CLOI-NET: Class Segmentation of Industrial Facilities' Point Cloud Datasets](#)", *J. of Advanced Engineering Informatics*, Elsevier, 45, August 2020, 33 p., DOI 10.1016/j.aei.2020.101121
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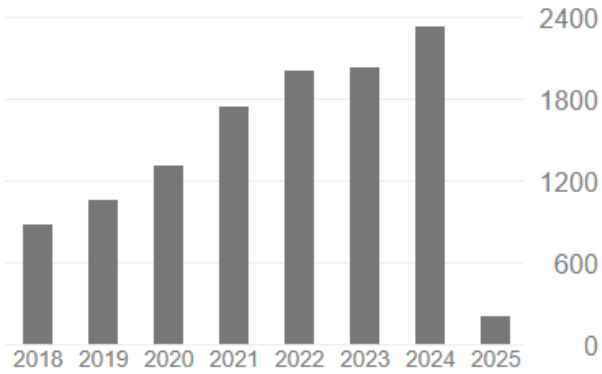
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## 12. Google Scholar Citations Summary

Updated Aug-25.

	All	Since 2020
Citations	14349	9636
h-index	59	50
i10-index	148	123



**LIST OF RESEARCH GRANTS****PROF IOANNIS BRILAKIS****Aug-25**

Historic exchange rates at the time of award used for currency conversions.

**Overall total: £49,388,818**

Grants listed chronologically based on their end dates. Some Centre grants (tagged as GM) not counted towards totals, as I was one of many participating faculty members.

**1. Completed external research grants****Total: £5,379,705****Grants for which I was the Lead Investigator (GL)\*:****Subtotal: £2,639,569**

\*including PI of grant subcontracts led by other institutions. Co-Is are noted in multi-investigator grants.

<b>[GL1].</b>	<b>Intelligent Computing: Challenges and opportunities</b> <i>Sponsor: American Society of Civil Engineers, USA</i> External Co-Is: University of Southern California: Prof Burcin Becerik Gerber	<i>Mar 2010 – Oct 2010</i>	<b>£2,614</b>
<b>[GL2].</b>	<b>Progressive Site Modelling with Videogrammetry</b> <i>Sponsor: National Science Foundation, USA</i> Project Partners: INOVX Solutions Inc.; Construction Cost Systems Inc.	<i>Aug 2008 – Jul 2011</i>	<b>£151,246</b>
<b>[GL3].</b>	<b>GRS: Progressive Site Modelling with Videogrammetry</b> <i>Sponsor: National Science Foundation, USA</i> Project Partners: INOVX Solutions Inc.; Construction Cost Systems Inc.	<i>Aug 2009 – Jul 2011</i>	<b>£24,169</b>
<b>[GL4].</b>	<b>Automated Vision Tracking of Project Related Entities</b> <i>Sponsor: National Science Foundation, USA</i> Project Partners: Construction Cost Systems Inc.; W.E. O'Neil Inc.	<i>Aug 2006 – Aug 2011</i>	<b>£195,907</b>
<b>[GL5].</b>	<b>IREE: Automated Vision Tracking of Project Related Entities</b> <i>Sponsor: National Science Foundation, USA</i> External Co-I: University of Thessaloniki: Prof Demos Angelides Project Partners: Construction Cost Systems Inc.; W.E. O'Neil Inc	<i>Aug 2007 – Aug 2011</i>	<b>£24,346</b>
<b>[GL6].</b>	<b>Comparison of Image- &amp; Time-of-Flight-Based Tech. for 3D Reconstructing As-Built Infrastructure</b> <i>Sponsor: Tekla &amp; GT Digital Building Laboratory</i>	<i>Sep 2011 - Aug 2012</i>	<b>£20,735</b>
<b>[GL7].</b>	<b>Videogrammetric Building Wireframe Calculator for Sheet Metal Forming Operations</b> <i>Sponsor: Metalforming Inc., Peachtree City, GA</i>	<i>Jan 2011 – Dec 2012</i>	<b>£80,931</b>
<b>[GL8].</b>	<b>Optical Surveyor</b> <i>Sponsor: Georgia Research Alliance, Atlanta, GA</i> Project Partner: Metalforming Inc.	<i>Jan 2012 – Dec 2012</i>	<b>£32,679</b>
<b>[GL9]</b>	<b>RP 11-12 Training and Certification for Construction Inspectors</b> <i>Sponsor: Georgia Department of Transportation, Forest Park, GA</i> GATech Co-I: Prof Jochen Teizer	<i>May 2011 – May 2013</i>	<b>£130,719</b>
<b>[GL10].</b>	<b>CAREER: Visual Pattern Recognition Models for Remote Sensing of Civil Infrastructure</b> <i>Sponsor: National Science Foundation, USA</i> Project Partners: Bentley Systems Inc.; USA National Institute of Standards & Technology; Skanska USA Building Inc.	<i>Aug 2010 – Aug 2013</i>	<b>£262,927</b>
<b>[GL11].</b>	<b>I-Corps: Videogrammetric Roof Surveying System for Dig. Fab. Of Sheet Metal Roof Panels</b> <i>Sponsor: National Science Foundation, USA</i> Project Partners: Autodesk Inc.; Metalforming Inc.	<i>Mar 2012 – Aug 2013</i>	<b>£32,679</b>

<b>[GL12].</b>	<b>Bridge Strike</b> <i>Sponsor: London Underground &amp; EPSRC CSIC</i> Cambridge Co-I: Prof Campbell Middleton	<i>Jun 2013 – Jul 2014</i>	<b>£25,200</b>
<b>[GL13].</b>	<b>Pavement Assessment Feasibility Study with Costain Ltd.</b> <i>Sponsor: EPSRC Impact Acceleration Account (IAA)</i> Project Partner: Costain Ltd.	<i>Jun 2014 - Aug 2014</i>	<b>£5,724</b>
<b>[GL14].</b>	<b>Reciprocal Reconstruction and Recognition for Modelling of Constructed Facilities</b> <i>Sponsor: National Science Foundation, USA</i> External PI: Georgia Institute of Technology: Prof Patricio Vela Project Partner: Skanska USA Building Inc.	<i>Sep 2010 – Aug 2015</i>	<b>£200,028</b>
<b>[GL15].</b>	<b>Collaboration for Research &amp; Education in Auto-Generation of Building Information Models</b> <i>Sponsor: Marie Curie Actions, European Commission, EU</i> External Co-Is: Stanford University: Prof Silvio Savarese; Georgia Institute of Technology: Prof Patricio Vela; Technion Israel Institute of Technology: Prof Rafael Sacks; University of Cyprus: Prof Symeon Christodoulou; Foundation for Research & Technology: Dr Manolis Lourakis	<i>Sep 2010 – Aug 2015</i>	<b>£254,670</b>
<b>[GL16].</b>	<b>Stereo Vision for Cultural Heritage Mapping</b> <i>Sponsor: Historic Scotland, UK</i> External PI: Heriot Watt University: Dr Fred Bosche	<i>Jan 2015 – Dec 2015</i> £49,905	<b>£3,200</b>
<b>[GL17].</b>	<b>CIG: Automated As-Built Modelling of the Built Infrastructure</b> <i>Sponsor: Marie Curie Actions, European Commission, EU</i>	<i>Sep 2013 – Aug 2017</i>	<b>£78,914</b>
<b>[GL18].</b>	<b>Computer Vision Automated Productivity Measurement</b> <i>Sponsor: Eng. &amp; Physical Sciences Res. Council (EPSRC) &amp; Laing O'Rourke Plc.</i>	<i>Oct 2013 –</i>	<b>£85,624</b>
<b>[GL19].</b>	<b>Damage Detection for Bridge Condition Assessment</b> <i>Sponsor: Trimble Europe BV</i>	<i>Oct 2014 – Sep 2018</i>	<b>£99,858</b>
<b>[GL20].</b>	<b>Digitising the Built Environment</b> <i>Sponsor: Leverhulme Trust Int. Fellowship &amp; TUM Vis. Professorship</i>	<i>Aug 2018 – Apr 2019</i>	<b>£49,790</b>
<b>[GL21].</b>	<b>Top-down As-is Modelling of Industrial Facilities</b> <i>Sponsor: Eng. &amp; Physical Sciences Res. Council &amp; AVEVA Group Plc.</i>	<i>Oct 2016 – Sep 2020</i>	<b>£102,536</b>
<b>[GL22].</b>	<b>Automated BIM Generation of Existing and Under Construction Railways</b> <i>Sponsor: Bentley Systems UK Ltd.</i>	<i>Oct 2017 – Sep 2021</i>	<b>£93,574</b>
<b>[GL23].</b>	<b>NRFIS Equipment Grant</b> <i>Sponsor: UKCRIC National Research Facility for Infra. Sensing</i>	<i>Sep 2020 – Sep 2021</i>	<b>£56,045</b>
<b>[GL24].</b>	<b>Hans Fischer Senior Fellowship: Digital Twin for the Built Environment</b> <i>Sponsor: TUM - Institute for Advanced Study</i>	<i>Jun 2019 – Mar 2023</i>	<b>£172,444</b>
<b>[GL25].</b>	<b>PointPix: A better, more efficient way to raw spatial and visual data</b> <i>Sponsor: BP, LOR, Trimble, Topcon, GeoSLAM, and CSIC</i>	<i>Oct 2017 – Sep 2023</i>	<b>£173,010</b>
<b>[GL26].</b>	<b>Digital Roads Prosperity Partnership EPSRC IAA award</b> <i>Sponsor: Eng. &amp; Physical Sciences Res. Council (EPSRC)</i>	<i>Jan 2024 – Mar 2024</i>	<b>£180,000</b>
<b>[GL27].</b>	<b>Digital Roads Prosperity Partnership Additional Allocation</b> <i>Sponsor: Depart for Science, Innovation and Technology via EPSRC</i>	<i>Jan 2024 – Mar 2024</i>	<b>£100,000</b>

<b>Grants for which I was a Co-Investigator (GI):</b>		<b>Subtotal:</b>	<b>£2,740,136</b>
<b>[GI1].</b>	<b>RAPID: Urgent Coll. of Perishable Cond. Data from Structures Affected by Haiti E/quake</b> <i>Sponsor: National Science Foundation, USA</i> External PI: University of Washington: Prof Laura Lowes GATech Co-I: Prof Reginald DesRoches	<i>Apr 2010 – Jul 2010</i> <b>Grant Total: £26,144</b>	<b>£9,804</b>
<b>[GI2].</b>	<b>RFID in Productivity Assessment of High-Rise Renovation Projects</b> <i>Sponsor: Skanska USA, Atlanta, GA</i> GATech PI: Jochen Teizer	<i>Sep 2009 – Dec 2010</i>	<b>£9,804</b>
<b>[GI3].</b>	<b>SBIR: A Novel Video Based Software Application for Automatic &amp; Accurate Roof Surveying</b> <i>Sponsor: National Science Foundation, USA</i> External PI: Metalforming Inc.: Mr Geoff Stone	<i>Jan 2013 – Jun 2013</i> <b>Grant Total: £98,037</b>	<b>£32,679</b>
<b>[GI4].</b>	<b>Machine Vision Enhanced Post Earthquake Inspection &amp; Rapid Loss Estimation</b> <i>Sponsor: National Science Foundation, USA</i> GATech PI: Prof Reginald DesRoches My role: Co-Principal Investigator	<i>Aug 2010 – Aug 2013</i>	<b>£235,315</b>
<b>[GI5].</b>	<b>Urban Scale Building Energy Network</b> <i>Sponsor: Eng. &amp; Physical Sciences Res. Council, UK</i> External PI: Imperial College London: Dr James Keirstead External Co-Is: Edinburgh Napier University: Dr Céline Garnier; Northumbria University: Dr Sara Walker; De Montfort University: Dr John Gow	<i>May 2014 – May 2015</i> <b>Grant Total: £28,868</b>	<b>£6,131</b>
<b>[GI6].</b>	<b>3D Digital Information Model Creation</b> <i>Sponsor: EPSRC, Centre for Smart Infrastructure and Construction</i> Cambridge PI: Prof Campbell Middleton; Other Cambridge Co-Is: Prof Roberto Cipolla Project Partners: Laing O'Rourke; TfL; Parsons Brinkerhoff; Atkins; Arup	<i>Apr 2014 - Nov 2016</i>	<b>£99,508</b>
<b>[GI7].</b>	<b>BIM Plus</b> <i>Sponsor: EPSRC, Centre for Smart Infrastructure and Construction</i> Cambridge PI: Prof Campbell Middleton Project Partners: Parsons Brinckerhoff; Laing O'Rourke; Crossrail; Costain; Network Rail; Arup; Transport Scotland; TfL; Strainstall	<i>Apr 2014 - Nov 2016</i>	<b>£104,508</b>
<b>[GI8].</b>	<b>SeeBridge: Automated Compilation of Semantically Rich BIM Models of Bridges</b> <i>Sponsor: ERA.NET Infravation, European Commission, EU</i> External PI: Israel Technion Inst. of Technology: Prof Rafael Sacks External Co-Is: Technical University of Munich: Prof Andre Bormann; Georgia Institute of Technology: Prof Patricio Vela; Project Partners: Pointivo Inc.; KedMor Engineers; Georgia Department of Transportation; Trimble Navigation Inc	<i>Oct 2015 – Sep 2017</i> <b>Grant Total: £414,119</b>	<b>£92,403</b>
<b>[GI9].</b>	<b>Digitally Enabling the DfMA &amp; Maintenance of Bridges</b> <i>Sponsor: InnovateUK</i> Cambridge Co-I: Prof Campbell Middleton External PI: Laing O'Rourke Plc: Mr Adam Locke External Co-I: Tony Gee Llp: Mr Neil Farmer	<i>Aug 2015 – Nov 2017</i> <b>Grant Total: £1,199,983</b>	<b>£364,934</b>
<b>[GI10].</b>	<b>The Airship Drone</b> <i>Sponsor: EPSRC, Centre for Smart Infrastructure and Construction</i> Cambridge PI: Dr Dongfang Liang; Other Cambridge Co-Is: Prof Campbell Middleton	<i>Oct 2017 – Sep 2018</i>	<b>£9,500</b>

<b>[GI11]. A Robot for Flexible Re-Prefabrication</b>	<b>£18,500</b>
<i>Sponsor: Trimble Fund</i>	
<i>Oct 2017 – Sep 2018</i>	
Cambridge PI: Dr Fumiya Iida	
<b>[GI12]. Automatic Construction Monitoring Through Semantic Information Modelling</b>	<b>£204,016</b>
<i>Sponsor: Discovery Grants, Australian Research Council</i>	
<i>Apr 2017 - Mar 2020</i>	
External PI: Prof Xiangyu Wang, Curtin University	
<b>[GI13]. Data and Analytics Facility for National Infrastructure (DAFNI) Hardware</b>	<b>£88,094</b>
<i>Sponsor: EPSRC through the University of Oxford</i>	
<i>Feb 2020 - Mar 2021</i>	
Cambridge PI: Dr Ruchi Choudhary	
Cambridge Co-Is: Dr Mike Bithell; Dr Ying Jin; Dr Li Wan; Prof Tom Spencer; Prof Simon Guest; Dr John Orr; Dr Jennifer Schooling	
<b>[GI14]. AI-Optimised Pathways for Schedule Execution</b>	<b>£274,178</b>
<i>Sponsor: InnovateUK</i>	
<i>Mar 2019 – May 2021</i>	
External PI: nPlan Ltd: Mr Dev Amratia	
<b>Grant Total: £871,144</b>	
External Co-I: Kier Plc: Mrs Chloe Anfield	
<b>[GI15]. CBIM: Cloud Building Information Modelling European Training Network</b>	<b>£770,778</b>
<i>Sponsor: MSCA, European Commission, EU</i>	
<i>Mar 2020 - Feb 2024</i>	
External PI: Prof Rafael Sacks, Technion IIT	
<b>Grant Total: £3,430,782</b>	
Cambridge Co-I: Dr Ajith Parlikad	
External Co-Is: UCL: Dr Dimitrios Rovas; UCD: Dr James O'Donnell; TUB: Prof Timo Hartmann; Trimble: Mr Kim Nyberg; CARTIF: Mr Cesar Valmaseda; LocLab: Dr Ilka May	
Partners: AEC3, Stanford University, DB Netz, PCSG, BAM, Bentley, Arcadis, LOR, DLR, Contech	
<b>[GI16]. BIM2TWIN: Optimal Construction Management &amp; Production Control</b>	<b>£419,984</b>
<i>Sponsor: H2020, European Commission, EU</i>	
<i>Nov 2020 - Mar 2024</i>	
External PI: Dr Marc Bourdeau, CSTB	
<b>Grant Total: £5,217,378</b>	
External Co-Is: Technion: Prof Rafael Sacks; TUM: Prof Andre Borrmann; INRIA: Dr Pierre Alliez; Technalia: Dr-Ing. Asier Mediavilla ; Univpm: Prof. Gian Marco Revel; Acciona: Dr Miguel A. Paris; RUB: Prof Markus Koenig; Spada: Mr Florent Noiray; USMART: Dr Stefano Carosio; Orange: Dr Sébastien Bolle; Siemens: Dr Hermann Mayer; IDP: Mr Eduard Loscos; Fira: Dr Otto Alhava; Aarhus: Prof Jochen Teizer; Intsite: Dr Mor Ram-On	
<b>2. <u>Current external research grants</u></b>	<b>Total: £44,009,113</b>
<b><u>Grants for which I am the Lead Investigator (GL)*:</u></b>	<b>Subtotal: £15,755,158</b>
*including PI of subcontracts of grants led by other institutions. Co-Investigators (Co-Is) are noted in multi-investigator grants.	
<b>[GL28]. Semantic Segmentation of Reality Capture Data for Generating Digital Twins of Existing Roads</b>	<b>£136,825</b>
<i>Sponsor: Eng. &amp; Physical Sciences Res. Council &amp; National Highways</i>	
<i>Mar 2021 – Mar 2026</i>	
<b>[GL29]. FUTUREROADS: Future Roads Fellowships</b>	<b>£6,678,169</b>
<i>Sponsor: MSCA, European Commission, EU</i>	
<i>Oct 2021 – Sep 2026</i>	
Co-Is: Prof Abir Al Tabbaa; Dr Fumiya Iida; Dr Kristen MacAskill; Dr Phillip Stanley Marbell	
External Co-Is: Costain: Mr Tim Embley; National Highways: Mr Phillip Proctor	
<b>[GL30]. Digital Roads Prosperity Partnership</b>	<b>£8,652,164</b>
<i>Sponsor: EPSRC, Costain, National Highways</i>	
<i>Apr 2022 – Mar 2027</i>	
Co-Is: Prof Abir Al Tabbaa; Prof Mark Girolami; Dr Fumiya Iida	
External Co-Is: Costain: Mr Tim Embley; National Highways: Mr Phillip Proctor	
<b>[GL31]. Road Digital Twin Design Automation</b>	<b>£140,000</b>
<i>Sponsor: EPSRC, National Highways</i>	
<i>Oct 2024 – Sep 2028</i>	

<b>[GL32].</b>	<b>Highways Maintenance &amp; Renewal Scheduling Exploiting New Data Sources &amp; DTs</b>	<b>£148,000</b>
	<i>Sponsor: EPSRC, Amey</i>	<i>Oct 2024 – Sep 2028</i>
<b>Grants for which I am a Co-Investigator (GI):</b>		<b>Subtotal: £28,253,955</b>
<b>[GI17].</b>	<b>OMICRON: Towards a more automated and optimised maintenance, renewal, and upgrade of roads by means of robotised technologies and intelligent decision support tools</b>	<b>£322,168</b>
	<i>Sponsor: H2020, European Commission, EU</i>	<i>May 2021 - Oct 2024</i>
	External PI: Dr Noemi Jiménez-Redondo, CEMOSA	<b>Grant Total: £4,559,449</b>
	External Co-Is: Tekniker: Dr Iñaki Maurtua; Aiscat Servizi SRL: Mr Federico Di Gennaro; Strada dei Parchi: Mr Luca Bartoccini; Andaluza para el Desarrollo Aeroespacial: Dr Antidio Viguria; Universidad de Sevilla: Prof Anibal Ollero; Panepistimio Patron: Prof. George Chryssoulouris; Universita Degli Studi di Genova: Ms Alice Consilvio; Eiffage Ifraestructuras SA: Ms Elena Hidalgo; Pavasal Empresa Constructora SA: Mr José Ramón Lopez Marco; INDRA Sistemas SA: Mr Martín Rivas Caneiro; Regens Informatikai Zartkoruen Mukodo Reszvenytarsasag: Mr András Juszt; European Science Communication Institute GMBH: Mr Elmar Bartlmae; Armando Rito Engenharia SA: Mr Pedro Cabral; Teixeira Duarte Engenharia E Construcoes SA: Ms Rita Maria Diogo de Carvalho de Moura	
<b>[GI18].</b>	<b>RESTOR: Reuse of Structural Steel in Construction</b>	<b>£701,634</b>
	<i>Sponsor: Eng. &amp; Physical Sciences Res. Council, UK</i>	<i>Oct 2022 - Oct 2025</i>
	External PI: Dr Samir Dirar, University of Birmingham	<b>Grant Total: £1,628,310</b>
	External Co-Is: University of Birmingham: Dr Marios Theofanous; Dr Asaad Faramarzi	
<b>[GI19].</b>	<b>BUILDSPACE: Enabling Innovative Space-driven Services for Energy Efficient Buildings and Climate Resilient Cities</b>	<b>£312,521</b>
	<i>Sponsor: Horizon Europe, European Commission, EU</i>	<i>Jan 2023 - Dec 2025</i>
	External PI: Dr Stamatia Rizou, Singular Logic	<b>Grant Total : £2,550,975</b>
	External Co-Is: 12 industrial and academic partners	
<b>[GI20].</b>	<b>D-HYDROFLEX: Digital Solutions for Improving the Sustainability Performance and Flexibility Potential of Hydropower Assets</b>	<b>£211,052</b>
	<i>Sponsor: Horizon Europe, European Commission, EU</i>	<i>Sep 2023 - Aug 2026</i>
	External PI: Dr John Markopoulos, Nova Telecommunications	<b>Grant Total : £4,014,858</b>
	External Co-Is: 16 industrial and academic partners	
<b>[GI21].</b>	<b>AEGIR: Digital &amp; Physical Incremental Renovation Packages/Systems Enhancing Environmental and Energetic Behaviour and Use of Resources</b>	<b>£376,220</b>
	<i>Sponsor: Horizon Europe, European Commission, EU</i>	<i>Jan 2023 - Dec 2026</i>
	External PI: Dr Julen Astudillo Larraz, Tecnalia	<b>Grant Total : £9,395,041</b>
	External Co-Is: 28 industrial and academic partners	
<b>[GI22].</b>	<b>M-TABS: Muon Tomography for Assessing Bridge Structures</b>	<b>£299,916</b>
	<i>Sponsor: InnovateUK, UK</i>	<i>Jan 2025 - Dec 2026</i>
	External PI: Dr Andi Hektor, GScan	<b>Grant Total : £788,800</b>
<b>[GI23].</b>	<b>Centre for Doctoral Training in Future Infrastructure and Built Environment-2 (FIBE2)</b>	<b>£8,747,084</b>
	<i>Sponsor: Eng. &amp; Physical Sciences Res. Council, UK</i>	<i>Oct 2019 - Mar 2027</i>
	Cambridge PI: Prof Abir Al-Tabbaa	
	Cambridge Co-Is: Prof Lord Robert Mair; Prof Janet Lees; Prof Allan McRobie; Dr Giovanna Biscontin	
	Centre Partners: 27 industrial partners and 5 international academic centres	
<b>[GI24].</b>	<b>Laing O'Rourke Centre for Construction Engineering and Technology – Phase 2</b>	<b>£8,836,192</b>
	<i>Sponsor: Laing O'Rourke, UK</i>	<i>Apr 2020 - Mar 2030</i>
	Cambridge PI: Prof Campbell R. Middleton	
<b>[GI25].</b>	<b>Centre for Doctoral Training in Future Infrastructure and Built Environment-3 (FIBE3)</b>	<b>£8,747,084</b>

Sponsor: *Eng. & Physical Sciences Res. Council, UK* Oct 2024 - Mar 2032  
 Cambridge PI: Prof Abir Al-Tabbaa  
 Cambridge Co-Is: Dr Brian Sheil; Prof Janet Lees; Prof Julian Allwood; Prof Dongfang Liang;  
 Dr Jurgen Becque  
 Centre Partners: 27 industrial partners and 5 international academic centres

**Centre Grants for which I am a member of the core team (GM):** **Total: £36,077,135**

**[GM1]. Centre for Doctoral Training in Future Infrastructure and Built Environment (FIBE) £4,414,135**

Sponsor: *Eng. & Physical Sciences Res. Council, UK* Oct 2014 - Mar 2022  
 Cambridge PI: Prof Robert Mair  
 Cambridge Co-Is: Dr Janet Lees; Prof Abir Al Tabbaa  
 Centre Partners: 17 industrial partners and 5 international academic centres

**[GM2]. Centre for Doctoral Training Equipment grant for FIBE £663,000**

Sponsor: *Eng. & Physical Sciences Res. Council, UK* Oct 2014 - Mar 2022  
 Cambridge PI: Prof Robert Mair  
 Cambridge Co-Is: Dr Janet Lees; Prof Abir Al Tabbaa  
 Centre Partners: 17 industrial partners and 5 international academic centres

**[GM3]. Core Innovation Hub £31,000,000**

Sponsor: *Department for Business, Energy & Industrial Strategy, UK* Aug 2019 - Sep 2023  
 External PI: Manufacturing Technology Centre: Mr Keith Waller **Grant Total: £72,000,000**  
 Cambridge PI: Prof Andy Neely

**[GM4] Carbon-neutral Practices in Recycled Concrete-based Materials Through Sequestration of Anthropogenic CO<sub>2</sub> £50,789**

Sponsor: *Public Policy Research Funding Scheme, Hong Kong* Feb 2025 – Feb 2026  
 External PI: Ray Runyang Zhong

**[GM5]. Research Centre for Nature-based Urban Infrastructure Solutions £775,973**

Sponsor: *Hong Kong Polytechnic University, Hong Kong* Jul 2024 – Jun 2028  
 External PI: Yuhong Wang

**[GM6]. Network+ for Digital Twins £5,000,000**

Sponsor: *Eng. & Physical Sciences Res. Council, UK* Jun 2023 - Jun 2028  
 Cambridge PI: Dr Jennifer Schooling  
 External PI: Prof David Wagg  
 Partners: Over 50 industry and academic partners

**1. Conferences**

- [TC1]. "Remote Wireless Site – Office Communications", *Invited Public Talk at 3rd Annual Workshop on Information Technologies to Support Better Construction Management*, Transportation Research Board Annual Meeting, 21-25 January 2007, Washington, DC
- [TC2]. "Object Model Capture in Buildings", *Keynote Address at the Digital Building Laboratory Symposium*, 14 June 2010, Atlanta, GA
- [TC3]. "Achievements and Challenges in Recognizing and Reconstructing Civil Infrastructure", *Invited Paper Presentation at Dagstuhl Seminar on Outdoor and Large-Scale Real-World Scene Analysis*, 15th Workshop on Theoretic Foundations of Computer Vision (11261), 26 June – 1 July 2011, Wadern, Germany
- [TC4]. "As-Built Modelling and Assessment", *Invited Talk at Future Infrastructure Forum IV*, Eng. & Physical Sciences Res. Council, 5 – 6 September 2012, Cambridge, UK
- [TC5]. "Virtualizing Existing Infrastructure and Construction Processes", *Invited Talk at SPAR Europe*, 8-10 December 2014, Amsterdam, Netherlands
- [TC6]. "Computer Vision Applications: Over-height Warning Systems for Reducing Bridge-Truck Collisions", *Keynote Lecture on "Fast Forward 10 Years: How Information Technology is Changing Transportation Planning, Engineering and Operations"*, Transportation Research Board Annual Meeting, 11-15 January 2015, Washington, DC
- [TC7]. "Digital Engineering for Bridges", *Invited Talk at ICE Bridges Conf.*, 5 June 2015, London, UK
- [TC8]. "Virtualizing Bridges", *Keynote Lecture at Joint FIATECH and COMIT Conf.*, 10 November 2015, London, UK
- [TC9]. "Virtualizing Infrastructure", *Invited Lecture at GEO Business Conf.*, 25 May 2016, London, UK
- [TC10]. "Virtualizing Infrastructure", *Keynote Lecture at the 2016 Creative Construction Conf.*, 27 June 2016, Budapest, Hungary
- [TC11]. "As-is Modelling of Infrastructure Assets", *Invited Lecture at the 2016 Asia-Pacific-Euro Summer School on Smart Structures Technology*, 5 July 2016, Cambridge, UK
- [TC12]. "Virtualizing Infrastructure", *Keynote Lecture at the 11th European Conf. on Product & Process Modelling*, 9 September 2016, Limassol, Cyprus
- [TC13]. "Virtualizing Infrastructure", *Keynote Lecture at the 2nd Construction Planning & Scheduling Summit*, 7 December 2016, Berlin, Germany
- [TC14]. "Mixed Reality in AEC", *Keynote Lecture at the FIATECH ETDP Conf.*, 31 May 2017, London, UK
- [TC15]. "Bridge-strike Protection from Overheight Vehicles", *Award Keynote Lecture at the Construction Research Congress*, 4 April 2018, New Orleans, LA
- [TC16]. "Making and Exploiting Digital Twins of Infrastructure & Buildings", *Keynote Lecture at Future Technologies in the Construction Industry Workshop*, 24 April 2018, Omagh, Ireland
- [TC17]. "The Future of Informatics in the Construction Sector", *Invited Talk at BIM Breakfast Workshop, Department of Civil Engineering, Aalto University*, 9 June 2018, Helsinki, Finland
- [TC18]. "SeeBridge", *Invited Talk at European Commission INFRAVATION Workshop, ANAS Engineering and Inspection Department, ANAS SpA*, 17 September 2018, Rome, Italy
- [TC19]. "Virtualising Infrastructure", *Invited Talk at Conclave on Automating Construction Projects*, ETH Zurich, 28 February 2019, Zurich, Switzerland
- [TC20]. "Generating & Exploiting Digital Twins", *Keynote Lecture at the 5th European BIM Summit*, 11 April 2019, Barcelona, Spain
- [TC21]. "Digital Twinning for the Built Environment", *Keynote Lecture at the International Workshop on "Emerging Machine Learning, Computer Vision and Pattern Recognition Methodologies and Their Applications"*, 27 November 2019, Keele, UK
- [TC22]. "Digital Twinning for the Built Environment", *Keynote Lecture at the 2020 Construction Virtual Reality (CONVR) International Conference*, 2 October 2020, Online
- [TC23]. "Generating & Exploiting Digital Twins", *Keynote Lecture at the 3rd International conference on Building Information Modelling*, 20 October 2020, Online
- [TC24]. "Generating & Exploiting Digital Twins", *Keynote Lecture at the Forum of BIM Applications in Transport Infrastructure, 2020 World Transport Convention (WTC2020)*, 9 November 2020, Online
- [TC25]. "Digital Twinning for the Built Environment", *Keynote Lecture at the 8th International Conference on Innovative Production and Construction (IPC 2020) joint with the 8th International Conference on Construction Engineering and Project Management (ICCEPM 2020)*, 7 December 2020, Online
- [TC26]. "Digital Transition in Construction", *Keynote Lecture at the Foresight VET 2035 Expert Panel of the European Vocational Skills Week 2020*, 8 December 2020, Online
- [TC27]. "Construction with Digital Twin Information Systems", *Keynote Lecture at the 2021 Building Digital Twin Congress*, 27 May 2021, Online
- [TC28]. "Digital Twins for Transportation", *Keynote Lecture at the Forum of BIM Applications in Transport Infrastructure, 2021 World Transport Convention (WTC2021)*, 16 June 2021, Online

- [TC29]. "Smart Construction and Buildings", *Panel lecture at the IEEE International Conference on Communications (IEEE-ICC2021)*, 21 June 2021, Online
- [TC30]. "Twinning the Built Environment", *Keynote Lecture at the 9th World Construction Symposium 2021 (WCS2021)*, 9 July 2021, Online
- [TC31]. "Virtualising Infrastructure", *Keynote Lecture at the 12th International Congress on Civil Engineering*, 12 July 2021, Online
- [TC32]. "Digital Twinning for the Built Environment", *Invited Lecture at the 2<sup>nd</sup> TEE BIM Conference*, 12 October 2021, Athens, Greece (delivered online) <https://bousias.wistia.com/medias/zctw9ll96v>
- [TC33]. "Spatial Digitisation in the era of Artificial Intelligence", *Keynote Lecture at the Conference on Ecclesiastical Cultural Wealth - Digital Imaging Methodologies and Optimizations*, 20 December 2021, Lemesos, Cyprus (delivered online)
- [TC34]. "Digital Twins for the Built Environment", *Keynote Lecture at the 3rd Digital Twin Global Forum*, 15 April 2022, (delivered online)
- [TC35]. "Digital Twins for the Built Environment", *Keynote Lecture at the 3rd International Conference on Natural Hazards & Infrastructure*, 5 July 2022, Athens, Greece
- [TC36]. "Digital Twins for the Built Environment", *Keynote Lecture at the CSCE Conference on Transforming Construction with Reality Capture Technologies: The Digital Reality of Tomorrow*, 25 August 2022, Fredericton, Canada
- [TC37]. "Digital Twinning for the Built Environment", *Invited Talk at the Digital Twin Hub Gemini Call, Connected Places Catapult*, 6 September 2022, UK (delivered online)
- [TC37]. "Digital Twinning for the Built Environment", *Invited Talk at the IPA Learning Hour*, Infrastructure Projects Authority, 7 September 2022, UK (delivered online)
- [TC37]. "Digital Twins for the Built Environment", *Keynote Lecture at the Conference on "Thinking the future LNEC, reflecting on its past"*, National Laboratory of Civil Engineering, 26 September 2022, Lisbon, Portugal
- [TC38]. "Digital Twinning for the Built Environment", *Invited Lecture at the 3<sup>rd</sup> TEE BIM Conference*, 12 October 2022, Athens, Greece (delivered online)
- [TC39]. "Exploring How Digital Twins, Smart Materials Data Science and Robotic Monitoring Can Develop A Connected Physical And Road Infrastructure System", *Keynote Lecture at the Digital Highways: Preparing for Smart Road Infrastructure event*, Institute of Government and Public Policy, 1 November 2022, London, UK
- [TC40]. "Digital Twins for the Built Environment", *Keynote Lecture at the "SophIA summit" international symposium on recent advances in artificial intelligence and its applications*, 24 November 2022, Sophia Antipolis, France
- [TC41]. "Digital Twinning for the Built Environment", *Keynote Lecture at the Construction Digital Twin Summit, Digital Construction & Innovation Days*, Sapienza University of Rome – CDT&AI and the Presidency of the Italian Republic, 24 March 2022, Rome, Italy
- [TC42]. "Digital Twinning for the Built Environment", *Keynote Lecture at the 30<sup>th</sup> European Group for Intelligent Computing Workshop*, University College London, 5 July 2023, London, UK
- [TC43]. "Digital Twinning for the Built Environment", *Keynote Lecture at the 2<sup>nd</sup> International Conference on Maintenance and Rehabilitation of Constructed Infrastructure Facilities (MAIREINFRA2)*, 17 August 2023, Honolulu, Hawaii
- [TC44]. "Digital Twinning for Highways", *Panellist at the 2023 Roundtable on Digital Twins*, Chartered Institute of Highways and Transportation (CIHT), 19 September 2023, London, UK
- [TC45]. "Digital Twinning for the Built Environment", *Keynote Lecture at the 2023 International Conference on Computer Vision (ICCV23)*, 2 October 2023, Paris, France
- [TC46]. "Digital Twinning for the Built Environment", *Keynote Lecture at the 4th Construction Blockchain Conference (CBC 2023)*, 7 November 2023, Hong Kong
- [TC47]. "How is technology being integrated into construction practices for current and future workforces?", *Panellist at the "The fourth industrial revolution: The future of the construction workforce" webinar*, RICS, 6 December 2023, online
- [TC48]. "Digital Twinning for the Built Environment", *Keynote Lecture at the siBIM 2024 Conference*, Slovenian Association for Building Information Modelling, 16 May 2024, online
- [TC49]. "Digital Twinning for the Built Environment", *Keynote Lecture at the 2024 Smart Construction Conference*, 30 May 2024, Beijing, China
- [TC50]. "Digital Twinning for the Built Environment", *Keynote Lecture at the 8th International Project and Construction Management Conference*, 6 June 2024, Istanbul, Turkey
- [TC51]. "Digital Twinning for the Built Environment", *Keynote Lecture at the 2024 ENTAC*, 9 October 2024, Maceio, Brazil
- [TC52]. "Digital Twins", *Panel presentation at the HighwaysUK Conference and Exposition*, 16 October 2024, Birmingham, UK
- [TC53]. "The Roads Research Alliance", *Panel presentation at the HighwaysUK Conference and Exposition*, 17 October 2024, Birmingham, UK
- [TC54]. "AI-based Digital Twinning the Built Environment", *Keynote Lecture at the Opening of NCTI-DC Hong Kong Branch & International Conference on Digitalization in Construction*, 23 October 2024, Hong Kong

- [TC55]. "AI-based Digital Twinning the Built Environment", *Keynote Lecture at the 1st National Infrastructure Conference*, 14 December 2024, Nanjing
- [TC56]. "AI-based Digital Twinning the Built Environment", *Keynote Lecture at the 6th International Conference on Civil and Building Engineering Informatics*, 9 January 2025, Hong Kong
- [TC57]. "AI-based Digital Twinning the Built Environment", *Keynote Lecture at the International Academicians Hong Kong Forum*, 21 March 2025, Hong Kong
- [TC58]. "AI-based Digital Twinning the Built Environment", *Keynote Lecture at the Building Digital Twin Scientific Conference (BDTSC2025)*, 15 May 2025, Kaunas, Lithuania
- [TC59]. "AI-based Digital Twinning the Built Environment", *Keynote Lecture at the Symposium on Innovative Development of New Urban Infrastructure*, 16 May 2025, Beijing, China
- [TC60]. "AI-based Digital Twinning the Built Environment", *Keynote Lecture at the International Conference on Digital Frontiers in Buildings and Infrastructure (DFBI 2025)*, 12 June 2025, Delft, The Netherlands
- [TC61]. "AI-based Digital Twinning the Built Environment", *Keynote Lecture at the 21st International Symposium of the Macedonian Association of Structural Engineers (MASE)*, 25 September 2025, Ohrid, North Macedonia
- [TC62]. "AI-based Digital Twinning the Built Environment", *Keynote Lecture at the Future of UK Infrastructure Symposium*, 3 October 2025, London, UK
- [TC63]. "AI-based Digital Twinning the Built Environment", *Keynote Lecture at the CIB W116 International Conference on Smart and Sustainable Built Environment (SASBE 2025)*, 4 November 2025, Lille, France

## 2. Universities & Academies

- [TU1]. "Content Based Integration of Construction Site Images in AEC/FM Model Based Systems", *Invited Talk at the Department of Civil and Environmental Engineering*, University of Michigan, 6 December 2004, Ann Arbor, MI
- [TU2]. "Visual Pattern Recognition for Civil Engineering Applications", *Invited Talk at the Department of Civil, Environmental, and Construction Engineering*, Iowa State University, 24 March 2006, Ames, IA
- [TU3]. "Visual Sensing for Civil Infrastructure Development", *Invited Talk at the Department of Civil and Environmental Engineering*, University of Maryland, 12 March 2008, Maryland, MD
- [TU4]. "Visual Sensing for Civil Infrastructure Development", *Invited Talk at the Department of Building Construction, Georgia Institute of Technology*, 7 April 2008, Atlanta, GA
- [TU5]. "Visual Sensing for Civil Infrastructure Development", *Invited Talk at the Department of Civil and Environmental Engineering*, Georgia Institute of Technology, 14 April 2008, Atlanta, GA
- [TU6]. "Visual Sensing for Civil Infrastructure Development", *Invited Talk at the Department of Construction Management*, University of Washington, 30 April 2008, Seattle, WA
- [TU7]. "Automated, Vision-based Tracking of Construction Entities", *Invited Talk at the Department of Civil Engineering*, Aristotle University of Thessaloniki, 25 June 2008, Thessaloniki, Greece
- [TU8]. "Visual Pattern Recognition Models of Construction Projects", *Invited Talk at the Technical University of Crete*, 31 May 2010, Chania, Greece
- [TU9]. "Visual Pattern Recognition Models of Construction Projects", *Invited Talk at the Department of Civil Engineering*, University of Patras, 3 June 2010, Patra, Greece
- [TU10]. "Writing a Successful NSF CAREER Grant Proposal", *Invited Seminar at the Department of Civil and Environmental Engineering*, Purdue University, 17 June 2010, Lafayette, IN
- [TU11]. "Visual Pattern Recognition Models for Infrastructure Sensing", *Invited Talk at the Department of Civil and Environmental Engineering*, Purdue University, 17 June 2010, Lafayette, IN
- [TU12]. "Applications of Machine Vision in the Construction, Inspection, and Management of Infrastructure and Construction Projects", *Invited Talk at the Department of Civil Engineering*, University of Patras, 13 December 2010, Patra, Greece
- [TU13]. "Infrastructure Recognition and Reconstruction", *Invited Talk at the Department of Civil and Environmental Engineering*, Stanford University, 31 March 2011, Palo Alto, CA
- [TU14]. "Infrastructure Modelling and Applications with Computer Vision", *Invited Talk at the Faculty of Civil and Environmental Engineering*, Ruhr-Universität Bochum, 5 July 2011, Bochum, Germany
- [TU15]. "Geometric Reverse Engineering of Infrastructure Products and Processes", *Invited Talk at the Faculty of Civil Engineering*, Bauhaus-Universität Weimar, 30 January 2012, Weimar, Germany
- [TU16]. "Recognition and Reconstruction for Life-Cycle Monitoring and Assessment of Infrastructure", *Invited Talk at the Department of Civil and Environmental Engineering*, Stanford University, 2 February 2012, Palo Alto, CA
- [TU17]. "Automation and Virtualization Solutions for Infrastructure Life-Cycle Monitoring and Assessment", *Invited Talk at the School of Sustainable Engineering and the Built Environment*, Arizona State University, 16 March 2012, Phoenix, AZ
- [TU18]. "Geometric Reverse Engineering for Construction Automation and Whole-Life Performance Monitoring", *Invited Talk at the Department of Engineering*, University of Cambridge, 30 April 2012, Cambridge, UK
- [TU19]. "Infrastructure Life-Cycle Automation Solutions with Visual Pattern Recognition and Reconstruction", *Invited Talk at the Department of Civil and Environmental Engineering*, University of Alberta, 9 May 2012, Edmonton, Canada

- [TU20]. "Virtualizing Built Infrastructure to Automate Construction and Maintenance", *Invited Talk at Trinity College, University of Cambridge*, 28 May 2012, Cambridge, UK
- [TU21]. "Generating As-Built Geometry for Construction, Monitoring, and Assessment", *Invited Talk at the Department of Civil Engineering, University of Nottingham*, 27 February 2013, Nottingham, UK
- [TU22]. "Smarter Infrastructure and Construction", *Invited Talk at Department of Civil, Architectural and Environmental Engineering, University of Texas*, 20 June 2013, Austin, TX
- [TU23]. "Augmented Reality in Architecture, Engineering and Construction", *Invited Talk at the School of Construction Management and Engineering, University of Reading*, 3 December 2014, Reading, UK
- [TU24]. "Future Tech for Asset Management & Construction", *Invited Talk at the Cambridge Real Estate Principal Investor Club, Trinity Hall College, University of Cambridge*, 7 July 2015, Cambridge, UK
- [TU25]. "Mixed Reality in Construction", *Invited Talk at the School of Construction Management and Engineering, University of Reading*, 2 December 2015, Reading, UK
- [TU26]. "Reinforcement Inspection using Augmented Reality", *Invited Talk at the School of Construction Management and Engineering, University of Reading*, 30 November 2016, Reading, UK
- [TU27]. "The Digital Worksite", *Invited Talk at the Chair of Civil and Building Systems, Technical University of Berlin*, 8 December 2016, Berlin, Germany
- [TU28]. "Virtualizing Infrastructure", *Invited Talk at the Department of Civil and Environmental Engineering, Imperial College London*, 27 September 2017, London, UK
- [TU29]. "Virtualizing Infrastructure", *Invited Talk at the School of Engineering, University of Cardiff*, 28 September 2017, Cardiff, UK
- [TU30]. "Virtualizing Infrastructure", *Invited Talk at the Joint Research Centre – Ispra, European Commission*, 29 November 2017, Ispra, Italy
- [TU31]. "Sustainable Metro Development in India: towards a Digital Worksite", *Invited Talk at the Department of Civil Engineering, India Institute of Technology - Madras*, 7 March 2018, Chennai, India
- [TU32]. "Virtualising Infrastructure", *Invited Talk at the Department of Civil Engineering, University of Patras*, 30 May 2018, Patras, Greece
- [TU33]. "Generating Infrastructure Digital Twins", *Invited Talk at the Faculty of Civil Engineering, Istanbul Technical University*, 16 October 2018, Istanbul, Turkey
- [TU34]. "Generating & Exploiting Digital Twins", *Leonhard Obermeyer Keynote Lecture, Technical University of Munich*, 9 November 2018, Munich, Germany
- [TU35]. "Virtualising Infrastructure", *Invited Talk at the Computer Science & Artificial Intelligence Laboratory, Massachusetts Institute of Technology*, 28 November 2018, Boston, MA  
<https://www.youtube.com/watch?v=fe472OnxgBk&feature=youtu.be>
- [TU36]. "Virtualising Infrastructure", *Invited Talk at the Department of Civil and Environmental Engineering, Purdue University*, 30 November 2018, West Lafayette, IN
- [TU37]. "Mixed Reality in Construction", *Invited Talk at the School of Construction Management and Engineering, University of Reading*, 4 December 2018, Reading, UK
- [TU38]. "Digital Twinning for the Built Environment", *Invited Talk at the School of Design and the Built Environment, Curtin University*, 14 May 2019, Perth, Australia
- [TU39]. "Digital Twinning for the Built Environment", *Invited Talk at the Department of Civil Engineering, University of Newcastle*, 16 May 2019, Sydney, Australia
- [TU40]. "Digital Twinning for the Built Environment", *Invited Talk at the Department of Civil and Environmental Engineering, Pusan National University*, 11 June 2020, Pusan, Korea (delivered online)
- [TU41]. "Digital Twinning for the Built Environment", *Keynote Talk at the 24<sup>th</sup> Annual Research Seminar, Faculty of Engineering, Built Environment and Information Technology, Central University of Technology*, 26 October 2021, Bloemfontein, South Africa (delivered online)
- [TU42]. "Digital Twinning for the Built Environment", *Invited Talk at Workshop on Civil Digital Transformation and Beyond, Department of Civil and Environmental Engineering, Korea Advanced Institute of Science and Technology*, 19 November 2021, Daejeon, South Korea (delivered online)
- [TU43]. "Digital Twinning for the Built Environment", *Invited Talk at OHMC Seminar, Information Engineering Division, Department of Engineering, University of Cambridge*, 10 June 2022, Cambridge, UK
- [TU44]. "Digital Twinning for the Built Environment", *Invited Talk at the Department of Civil and Environmental Engineering, Imperial College London*, 20 June 2023, London, UK
- [TU44]. "Digital Twinning for the Built Environment", *Invited Talk at the Computer Science and Technology Department, Minzu University of China*, 22 May 2023, Beijing, China
- [TU44]. "Commercialising Technology", *Invited Talk at the Computer Science and Technology Department, Minzu University of China*, 23 May 2023, Beijing, China
- [TU44]. "Research Methodology", *Invited Talk at the Computer Science and Technology Department, Minzu University of China*, 24 May 2023, Beijing, China
- [TU44]. "Studying Abroad", *Invited Talk at the Computer Science and Technology Department, Minzu University of China*, 25 May 2023, Beijing, China

- [TU45]. "Digital Twinning for the Built Environment", *Invited Talk at the Civil Engineering and Construction Management Departments*, Tsinghua University, 26 May 2023, Beijing, China
- [TU46]. "Digital Twinning for the Built Environment", *Invited Talk at the Digital Twin in the AEC Industry Workshop, École Centrale de Lille*, University of Lille, 5 June 2023, Lille, France
- [TU47]. "Digital Twinning for the Built Environment", *Invited Talk at the Department of Civil and Environmental Engineering*, Imperial College London, 20 June 2023, London, UK
- [TU48]. "Digital Twinning for the Built Environment", *Lecture at Seminar Series in Architecture and the Built Environment*, University of Huddersfield, 27 September 2023, UK
- [TU49]. "Digital Twinning for the Built Environment", *The Future of Infrastructure, Today! Webinar Series, Center for Smart Infrastructure*, University of California at Berkeley, 19 January 2024, Berkeley, CA (delivered online)
- [TU50]. "Digital Twins", *Construction Informatics and Digital Enterprise (CIDEL) Lecture Series*, Leeds Beckett University, 22 January 2024, Leeds, UK (delivered online)
- [TU51]. "Digital Twinning for the Built Environment", *PAIR Distinguished Lecture at the PolyU Academy for Interdisciplinary Research*, 10 March 2024, Hong Kong
- [TU52]. "Digital Twinning for the Built Environment", *Invited Talk at the Department of Transportation Engineering*, Tongji University, 15 March 2024, Shanghai, China
- [TU53]. "Digital Twinning for the Built Environment", *Invited Talk at School of Instrument Science and Engineering*, Southeast University, 18 March 2024, Nanjing, China
- [TU54]. "Digital Twinning for the Built Environment", *Invited Talk*, Jiangsu University, 19 March 2024, Zhenjiang, China
- [TU55]. "Digital Twinning for the Built Environment", *Invited Talk at Faculty of Architecture, Civil, and Transportation Engineering*, Beijing University of Technology, 21 March 2024, Beijing, China
- [TU56]. "Digital Twinning for the Built Environment", *Invited Talk at School of Art*, Minzu University of China, 22 March 2024, Sanya, China
- [TU57]. "Digital Twinning for the Built Environment", *Invited Talk at School of Civil Engineering*, Tsinghua University, 25 March 2024, Beijing, China
- [TU58]. "Digital Twinning for the Built Environment", *Invited Talk at College of Future Transportation*, Chang 'An University, 28 March 2024, Xi'an, China
- [TU59]. "Digital Twinning for the Built Environment", *Invited Talk at School of Management*, Guangzhou University, 29 March 2024, Guangzhou, China
- [TU60]. "Digital Twinning for the Built Environment", *Invited Talk at School of Engineering*, Cardiff University, 22 April 2024, Cardiff, UK
- [TU61]. "Digital Twinning for the Built Environment", *Invited Talk at the Chinese Academy of Surveying and Mapping*, 28 May 2024, Cambridge, UK
- [TU62]. "Digital Twinning for the Built Environment", *2nd Peter and Janet Wolf Lecture*, City University of London, 13 June 2024, London, UK
- [TU63]. "AI-based Digital Twinning the Built Environment", *Invited Talk at the Departments of Industrial and Manufacturing Systems Engineering and Real Estate and Construction*, Hong Kong University, 6 August 2024, Hong Kong
- [TU63]. "AI-based Digital Twinning the Built Environment", *Invited Talk at Department of Civil and Environmental Engineering*, Hong Kong University of Science and Technology jointly sponsored with the Institution of Civil Engineers – Hong Kong branch, 8 August 2024, Hong Kong
- [TU64]. "AI-based Digital Twinning the Built Environment", *Invited Talk at the Department of Civil Engineering*, Tsinghua University (Shenzhen Campus), 20 September 2024, Shenzhen, China
- [TU65]. "AI-based Digital Twinning the Built Environment", *Invited Talk at the Department of Civil Engineering*, Harbin Institute of Technology (Shenzhen Campus), 21 September 2024, Shenzhen, China
- [TU66]. "AI-based Digital Twinning the Built Environment", *Invited Talk at the Department of Civil Engineering*, Nanchang University, 1 November 2024, Nanchang, China
- [TU67]. "AI-based Digital Twinning the Built Environment", *Invited Talk at the Department of Civil Engineering*, Huazhong University of Science and Technology, 6 December 2024, Wuhan, China
- [TU68]. "AI-based Digital Twinning the Built Environment", *Invited Talk at the Thrust of Internet of Things*, Hong Kong University of Science and Technology (Guangzhou campus), 9 December 2024, Guangzhou, China
- [TU69]. "AI-based Digital Twinning the Built Environment", *Invited Talk at the Department of Civil Engineering*, Southeast University, 13 December 2024, Nanjing, China

### 3. Private Sector & Podcasts

- [TP1]. "Machine Vision for Object Recognition, and what it Means for BIM", *Invited Seminar for Industry BIM Breakfast*, College of Architecture, Georgia Institute of Technology, 26 May 2009, Atlanta, GA
- [TP2]. "Computer Vision in Support of Civil Infrastructure Management", *Invited Seminar for Lord, Aeck & Sargent Architecture*, 25 October 2011, Atlanta, GA

- [TP3]. "A Path for Automating Construction, Assessment and Maintenance", *Invited Webinar for Technology Tuesday Webinar Series*, FIATECH, 12 June 2012, Online
- [TP4]. "Virtualizing and Automating Construction", *Invited Seminar for Engineering Excellence Group Seminar Series*, Laing O'Rourke Inc., 26 February 2013, London, UK
- [TP5]. "Computer Vision", *Invited Seminar for Laing O'Rourke Innovation & Invention Graduate Training Seminar*, Clare College, 9 December 2013, Cambridge, UK
- [TP6]. "Achievements & Opportunities in As-Built Modelling", *Invited Seminar for AVEVA Ltd.*, 21 January 2014, Cambridge, UK
- [TP7]. "Achievements & Opportunities in As-Built Modelling", *Invited Seminar for China Vanke Co. Ltd.*, Pembroke College, 28 February 2014, Cambridge, UK
- [TP8]. "Machine Vision-Based Automation in On-Site Construction", *Invited Seminar for Trimble Inc.*, Trimble Headquarters, 26 September 2014, Denver, CO
- [TP9]. "As-Built Infrastructure Data Capture for BIM and Condition Monitoring", *Invited Seminar for High Speed Two (HS2) Limited*, 12 July 2016, London, UK
- [TP10]. "Virtualizing Infrastructure Assets", *Lecture*, Trimble Dimensions Conference, 7 November 2016, Las Vegas, NV
- [TP11]. "Mixed Reality in AEC", *Invited Seminar*, Collusion VR/AR Workshop, 16 May 2017, Cambridge, UK
- [TP12]. "Mixed Reality in AEC", *Invited Webinar for ConnDOT*, 16 June 2017, Online
- [TP13]. "Virtualising Infrastructure", *Invited Seminar*, Bentley Research Conference, 1 March 2018, London, UK
- [TP14]. "Virtualising Infrastructure", *Invited Seminar*, Fira Oy, 7 June 2018, Helsinki, Finland
- [TP15]. "Virtualising Infrastructure", *Invited Seminar*, Trimble Solutions Oy, 8 June 2018, Helsinki, Finland
- [TP16]. "Virtualizing Infrastructure", *Invited Seminar*, BIM and beyond: Digital Transition in Construction Symposium, Prota Engineering, 12 October 2018, Istanbul, Turkey
- [TP17]. "Computer Vision and Beyond in Construction" *Beyond BIM Podcast*, Apple Podcasts, 3 July 2020, <https://podcasts.apple.com/gb/podcast/computer-vision-and-beyond-in-construction/id1497267441?i=1000482299580>
- [TP18]. "Robotics, Construction and Smart Buildings" *Cyber Society Podcast*, ITSP Magazine, 30 September 2020, [https://itspmagazine.simplecast.com/episodes/advanced-technology-in-the-construction-industry-we-have-come-a-long-way-since-the-shovel-and-we-still-use-it-with-ioannis-brilakis-and-tim-embley-0mS8lfzo?utm\\_source=itspmagazine&utm\\_medium=web](https://itspmagazine.simplecast.com/episodes/advanced-technology-in-the-construction-industry-we-have-come-a-long-way-since-the-shovel-and-we-still-use-it-with-ioannis-brilakis-and-tim-embley-0mS8lfzo?utm_source=itspmagazine&utm_medium=web)
- [TP19]. "AI in infrastructures: Transforming the future of the Built Environment" *Global Greek Influence Podcast*, 1 March 2023
- [TP20]. "AI-based Digital Twinning of the Built Environment " *ASCE Region 10 Distinguished Lecture*, 21 August 2024

**1. List of Research Staff (R)****At the Georgia Institute of Technology**

[R1]. Dr Christian Koch Jan 2010 – Aug 2010

Role: Research Associate

Last degree: Dr.-Ing. in Civil Engineering, Bauhaus University, Weimar, Germany, Dec 2008

Sponsor: DAAD; Research: Condition Assessment of Pavement Surfaces with Digital Image Processing

Publications: J19; J29; J35; J38; B5; C28; C46; C49; C50; C62; C63; C67; CP8

Current position: Professor, Chair of Intelligent Technical Design, Civil Engineering, Bauhaus University Weimar

[R2]. Dr Fei Dai Aug 2010 – Jun 2012

Role: Research Associate

Last degree: Ph.D. in Civil Engineering, Hong Kong Polytechnic University, China, Nov 2010

Sponsor: [GL4, GL6]; Research: Reciprocal Reconstruction and Recognition for As-Built Modelling of Infrastructure

Publications: J32; J33; J34; J42; C42; C51; C56; C57; C60; C77 ; CP11 ; N9

Current position: Associate Professor, University of West Virginia

**At the University of Cambridge**

[R3]. Dr Viorica Patraucean Jul 2014 – Sep 2016

Role: Research Associate

Last degree: Ph.D. in Computer Science, Institut de Recherche en Informatique de Toulouse, France, Jan 2012

Sponsor: [G16]; Research: Machine Vision-Based As-Built Bridge Modelling

Publications: J44; C91; C103

Co-supervised with: Prof Campbell Middleton, Prof Roberto Cipolla

Current position: Senior Researcher, Google DeepMind

[R4]. Dr Juan Manuel Davila Delgado Oct 2014 – Sep 2016

Role: Research Associate

Last degree: Ph.D. in Structural Design & Computation, Eindhoven University of Technology, Netherlands, Sep 2014

Sponsor: [G17]; Research: IFC IFRA standards for sensor data integration into Bridge BIM models

Publications: J58; J61; C95; C102; C106

Co-supervised with: Prof Campbell Middleton

Current position: Associate Professor, University of Bristol

[R5]. Dr Min Koo Kim Aug 2015 – Jul 2017

Role: Research Associate

Last degree: Ph.D. in Civil Engineering, Korean Advanced Institute of Science & Technology, Seoul, Korea, Feb 2015

Sponsor: [G19]; Research: Bridge Types and Components Suitable for Design for Manufacturing and Assembly

Publications: J47; J53; J59; J60; J81; JO2; C104; C115; C124

Co-supervised with: Prof Campbell Middleton

Current position: Assistant Professor, Architectural Engineering, Chungbuk National University

[R6]. Dr Michael Belsky Aug 2015 – Jul 2017

Role: Research Associate

Last degree: Ph.D. in Civil Engineering, Israel Institute of Technology, Haifa, Israel, Jul 2015

Sponsor: [G19]; Research: IFC IFRA standards for Bridge Design for Manufacturing and Assembly

Publications: J53; J54; C80; C104; C110

Co-supervised with: Prof Campbell Middleton

Current position: Lecturer, Department of Civil Engineering, Ariel University

[R7]. Prof Haiyan (Sally) Xie Aug 2019 – Jul 2020

Role: Research Associate

Last degree: Ph.D. in Design, Construction and Planning, University of Florida, Gainesville, FL, Apr 2005

Sponsor: [G14]; Research: AI-Optimised Pathways for Schedule Execution

Publications: J79; J80; J87; J89; J96; JO5; B10; JO4; C141; C147

Current position: Professor, Dept of Technology, College of Appl. Science & Technology, Illinois State University

[R8]. Dr Ying Hong *Aug 2019 – May 2021*  
Role: Research Associate  
Last degree: Ph.D. in Civil and Environmental Engineering, University of New South Wales, Sydney, Australia, Jul 2018  
Sponsor: [GI14]; Research: AI-Optimised Pathways for Schedule Execution  
Publications: J80; J84; J87; J89; J96; JO5; JO4; C138; C141; C147  
Current position: Assistant Professor, Dept of Civil and Environmental Engineering, Griffith University

[R9]. Dr Yiqing Liu *May 2021 – Nov 2021*  
Role: Research Associate  
Last degree: Ph.D. in Civil Engineering, National University of Singapore, Singapore, Mar 2021  
Sponsor: [GI16]; Research: Optimal Construction Management & Production Control  
Current position: Postdoctoral Associate, Harvard-MIT Biomedical Engineering Centre, Massachusetts Institute of Technology

[R10]. Dr Juergen Hackl *Jun 2022 – Jul 2022*  
Role: Senior Research Associate  
Last degree: Ph.D. in Civil Engineering Science, ETH Zurich; Jun 2019  
Sponsor: [GL30]; Research: Digital Twins for Highways Maintenance  
Current position: Assistant Professor, Dept of Civil and Environmental Engineering, Princeton University

[R11]. Dr Yasmin Fathy *May 2021 – Aug 2022*  
Role: Research Associate  
Last degree: Ph.D. in Communication Systems, University of Surrey, Surrey, UK, Aug 2018  
Sponsor: [GI16]; Research: Optimal Construction Management & Production Control  
Publications: J93; J95; C149; C150; C156  
Current position: Associate Vice President for Data Science, Barclays Inc.

[R12]. Dr Weiwei Chen *Sep 2021 – Oct 2022*  
Role: Research Associate  
Last degree: Ph.D. in Civil Engineering, HK University of Science & Technology; Mar 2019  
Sponsor: [GI17]; Research: Automated and Optimised Maintenance, Renewal, and Upgrade of Roads  
Publications: J90; C151; C155; C160; C161; C162; C180; C182; C194; C203  
Current position: Assistant Professor, Bartlett School of Sustainable Construction, UCL

[R13]. Dr Thomas George Thuruthel *Apr 2022 – Feb 2023*  
Role: Senior Research Associate  
Last degree: Ph.D. in Biorobotics, Scuola Superiore Sant' Anna; Feb 2019  
Sponsor: [GL30]; Research: Automation and Robotics for Highways Maintenance  
Current position: Assistant Professor, Computer Science, UCL

[R14]. Dr Georgios Hadjidemetriou *Apr 2022 – Oct 2023*  
Role: Senior Research Associate  
Last degree: Ph.D. in Civil Engineering, University of Cyprus; Dec 2018  
Sponsor: [GL30]; Research: Data Science for Highways Maintenance  
Publications: J103; J109; JO3  
Current position: Assistant Professor, Loughborough University

[R15]. Dr Yiming Zhang *Sep 2022 – Dec 2023*  
Role: Research Associate  
Last degree: Ph.D. in Civil Engineering, Monash University; Nov 2021  
Sponsor: [GL29]; Research: Digital twin-driven Bayesian dynamic linear model and reinforcement learning for predictive maintenance of pavements  
Publications: J103  
Current position: Young Chair Professor, Southeast University, China

- [R16]. Dr Munkhbaatar Buuveibaatar *Jun 2023 – Apr 2024*  
 Role: Research Associate  
 Last degree: Ph.D. in Geoinformatics, University of Seoul; Dec 2019  
 Sponsor: [GL29]; Research: Planning Digital Twins  
 Publications: J114  
 Current position: Assistant Professor, Kyungpook National University, South Korea
- [R17]. Dr Shuyan Li *Nov 2022 – Apr 2024*  
 Role: Research Associate  
 Last degree: Ph.D. in Computer Vision, Tsinghua University, Nov 2022  
 Sponsor: [GI16]; Research: Digital Twin-based Progress Monitoring in Construction  
 Publications: J100; J104; C164; C165; C183  
 Current position: Assistant Professor in Artificial Intelligence, EECS Department, Queen's University Belfast
- [R18]. Dr Ran Wei *Dec 2022 – Jun 2024*  
 Role: Senior Research Associate  
 Last degree: Ph.D. in Computer Science, York University; Dec 2018  
 Sponsor: [GL30]; Research: Digital Twins for Highways Maintenance  
 Publications: J108; J109; J120; J119; C171; C179; C184; C188; C199; C200  
 Current position: Associate Professor in Computer Science, Lancaster University
- [R19]. Dr Tom Kelly *Jun 2024 – Dec 2024*  
 Role: Senior Research Associate  
 Last degree: Ph.D. in Procedural Graphics, University of Glasgow  
 Sponsor: [GL30]; Research: Digital Twins for Highways Maintenance  
 Publications: J118; J123; C201
- [R20]. Dr Judith Fauth *Jan 2023 – Mar 2025*  
 Role: Research Associate  
 Last degree: Ph.D. in Engineering, Bauhaus-Universität Weimar; Dec 2021  
 Sponsor: [GL29]; Research: Advanced Planning and Building Permits through Road Digital Twins  
 Publications: C196
- [R21]. Dr Mudan Wang *May 2023 – Dec 2026*  
 Role: Research Associate  
 Last degree: Ph.D. in Construction Management, University of New South Wales, Apr 2023  
 Sponsor: [GI21]; Research: Digital Twin Construction  
 Publications: J108; J110; J115; C179; C180; C182; C185; C188; C190; C192; C193
- [R22]. Dr Damian Palin *Apr 2022 – Jul 2025*  
 Role: Senior Research Associate  
 Last degree: Ph.D. in Civil Engineering, Delft University of Technology; May 2017  
 Sponsor: [GL30]; Research: Smart Materials for Highways Maintenance  
 Publications: J109
- [R23]. Dr Hamidreza Alavi *May 2023 – Jan 2026*  
 Role: Research Associate  
 Last degree: Ph.D. in Construction Engineering, University Polytechnic of Catalunya, Jan 2023  
 Sponsor: [GI17; GI21]; Research: Digital Twins  
 Publications: J105; C180; C182; C190; C192
- [R24]. Dr Guangming Wang *Jul 2023 – Jul 2025*  
 Role: Research Associate  
 Last degree: Ph.D. in Automation, Shanghai Jiao Tong University, Jun 2023  
 Sponsor: [GI16; GI17; GI21]; Research: Visual LiDAR Odometry and Mapping  
 Publications: J105; C188; C192; C193

- [R25]. Dr Stephen Leonard Green *Dec 2023 – Jul 2025*  
 Role: Senior Research Associate  
 Last degree: Ph.D. in Mathematics, University of Leicester; Dec 2019  
 Sponsor: [GL30]; Research: Data Science for Highways Maintenance  
 Publications: C202
- [R26]. Dr Jerry Xu *May 2023 – May 2025*  
 Role: Senior Research Associate  
 Last degree: Ph.D. in Civil Engineering, Loughborough University; Feb 2019  
 Sponsor: [GL30]; Research: Automation and Robotics for Highways Maintenance  
 Publications: J109
- [R27]. Dr Jinying Xu *Sep 2022 – Aug 2025*  
 Role: Research Associate  
 Last degree: Ph.D. in Construction Management, Hong Kong University, Apr 2021  
 Sponsor: [GL29]; Research: Data science and advanced technologies for sustainability orientated decision making  
 Publications: J118; C198; C199
- [R28]. Dr Arsen Abdulali *Sep 2022 – Aug 2025*  
 Role: Research Associate  
 Last degree: Ph.D. in Computer Science and Engineering, Kyung Hee University; Feb 2021  
 Sponsor: [GL29]; Research: Human-Robot Cooperation for Maintenance and Construction of Future Roads
- [R29]. Dr Soheila Kookalani *Apr 2023 – Oct 2025*  
 Role: Research Associate  
 Last degree: Ph.D. in Civil & Structural Engineering, Shanghai Jiao Tong University; Dec 2022  
 Sponsor: [GL18]; Research: Generative Design of Steel Structures  
 Publications: J111; C172; C173; C174; C178; C180; C182; C185; C189; C190; C192; C193; C195
- [R30]. Dr Chapa Sirithunge Hewa Pelendage *Jun 2023 – Jun 2026*  
 Role: Research Associate  
 Last degree: Ph.D. in Electrical Engineering, University of Moratuwa; Dec 2020  
 Sponsor: [GL29]; Research: A multi-agent system for heavy machinery operation through context aware sensor fusion
- [R31]. Dr Varun Kumar Reja *Jun 2023 – Aug 2025*  
 Role: Research Associate  
 Last degree: Ph.D. in Civil Engineering, India Institute of Technology - Madras; Jun 2023  
 Sponsor: [GL29]; Research: Towards the development of a resilient highway digital twin: Requirements, Specifications and Standards  
 Publications: J105; J112; J116; J119; C171; C181; C184
- [R32]. Dr Linjun Lu *Jun 2023 – Jun 2026*  
 Role: Research Associate  
 Last degree: Ph.D. in Construction Engineering, University of West Virginia; Mar 2023  
 Sponsor: [GL29]; Research: How can we build a trustworthy Digital Twin?  
 Publications: J108; J115; J119; J124; C191
- [R33]. Dr Mengtian Yin *Jun 2023 – Jun 2026*  
 Role: Research Associate  
 Last degree: Ph.D. in Real Estate and Construction Management, University of Hong Kong; Mar 2023  
 Sponsor: [GL29]; Research: What are the minimum data requirements for a valuable Digital Twin?  
 Publications: J115; J119; J120; J123; C171; C184; C198; C199; C200; C201
- [R34]. Dr Yuandong Pan *Jun 2023 – Jun 2026*  
 Role: Research Associate

Last degree: Ph.D. in Civil Engineering, Technical University of Munich; Mar 2023  
Sponsor: [GL29]; Research: Data fusion and data structure design in creating and updating digital twins  
Publications: J88; J92; J105; J108; J115; J117; J124; C143; C154; C158; C182; C187; C191; C193

[R35]. Dr Yue Xie *Jun 2023 – Jun 2026*

Role: Research Associate

Last degree: Ph.D. in Computer Science, University of Adelaide; Dec 2021

Sponsor: [GL29]; Research: Highway intelligent traffic control system based on vehicle-road coordination and multi-agent technology

Publications: J115

[R36]. Dr Erika Parn *Oct 2022 – Jun 2026*

Role: Senior Research Associate

Last degree: Ph.D. in Building Information Modelling, Birmingham City University; May 2019

Sponsor: [G118]; Research: Generative Design Solutions for Reuse of Structural Steel in Construction

Publications: J111; C172; C178; C185; C186; C189; C190; C195

[R37]. Dr Alwyn Mathew *Feb 2022 – Dec 2026*

Role: Research Associate

Last degree: Ph.D. in Computer Science and Engineering, Indian Institute of Technology Patna

Sponsor: [G120]; Research: 3D mobile mapping solutions for large-scale infrastructure assets

Publications: J105; C183; C192

[R38]. Dr Junxiang Zhu *Jan 2023 – Jan 2026*

Role: Research Associate

Last degree: Ph.D. in Computer Science, University of Adelaide; Dec 2021

Sponsor: [GL29]; Research: Highway intelligent traffic control system based on vehicle-road coordination and multi-agent technology

Publications: J118; J120; C198; C199; C200; C201

[R39]. Dr Shirin Malihi *Jan 2023 – Jan 2026*

Role: Research Associate

Last degree: Ph.D. in Photogrammetry Engineering & Computer Vision, KNTU, HFT Stuttgart, and TUB; Dec 2019

Sponsor: [GL29]; Research: How can we construct and maintain a Road Digital Twin?

Publications: J105

[R40]. Dr Zhaojie Sun *Jan 2023 – Jan 2026*

Role: Research Associate

Last degree: Ph.D. in Pavement Engineering, Delft University; Aug 2022

Sponsor: [GL29]; Research: Digital twin-driven structural health monitoring of roads by using physics-based model and machine learning

Publications: J124

[R41]. Dr Xiang Wang *Jan 2023 – Jan 2026*

Role: Research Associate

Last degree: Ph.D. in Optical Instrumentation, Delft University; Aug 2023

Sponsor: [GL29]; Research: Explainable artificial intelligence assistant low-cost autonomous-vehicle-mounted inertial measurement unit sensors-based road surface condition monitoring system

Publications: J105

[R41]. Dr Ya Wen *Aug 2023 – Nov 2026*

Role: Research Associate

Last degree: Ph.D. in BIM, Smart Facility Management, and Smart Cities, University of Hong Kong; Jul 2023

Sponsor: [G119]; Research: Enabling Innovative Space-driven Services for Energy Efficient Buildings and Climate Resilient Cities

Publications:

[R42]. Dr Alix Marie D'Avigneau *Feb 2022 – Mar 2027*

Role: Embedded Industrial Research Fellow  
Last degree: Ph.D. in Engineering, University of Cambridge; Aug 2019  
Sponsor: [GL30]; Research: Digital Roads  
Publications: J103; J109; J116; J119; J122; J124

[R43]. Dr Lilia Potseluyko *Feb 2022 – Mar 2027*  
Role: Embedded Industrial Research Fellow  
Last degree: Ph.D. in Building Information Modelling, Teesside University; Aug 2022  
Sponsor: [GL30]; Research: Digital Roads  
Publications: J105; J116

[R44]. Dr Lavindra De Silva *Nov 2022 – Mar 2027*  
Role: Research Professor  
Last degree: Ph.D. in Computer Science, RMIT University; Aug 2010  
Sponsor: [GL30]; Research: Digital Roads  
Publications: J103; J109; J116; J122; C166; C194; C203

[R45]. Dr Svetlana Besklubova *Apr 2025 – Mar 2027*  
Role: Assistant Research Professor  
Last degree: Ph.D. in Civil & Environmental Engineering, Hong Kong Uni. Of Science & Tech.; Jan 2020  
Sponsor: [GL30]; Research: Digital Roads  
Publications:

## 2. List of Management Staff (M)

### At the University of Cambridge

[M1]. Ms Richenda Whitehead *Aug 2018 – Apr 2019*  
Sponsor: [GL20]; Role: Executive Assistant

[M2]. Ms Anna Hajduk *Sep 2021 – Mar 2022*  
Sponsor: [GL29]; Role: Future Roads Programme Manager

[M3]. Mrs Rachel Judson *Apr 2022 – Mar 2027*  
Sponsor: [GL30]; Role: DRF Project Manager (via Costain)

[M4]. Dr Mahendrini Fernando Ariyachandra *Jul 2022 – Mar 2027*  
Sponsor: [GL30]; Role: DRF Programme Manager

[M5]. Mrs Sanjana Bushra *Jun 2022 – Aug 2023*  
Sponsor: [GL29]; Role: Future Roads Programme Coordinator

[M6]. Dr Nevena Vajdic *Nov 2022 – Mar 2027*  
Sponsor: [GL29]; Role: Future Roads Senior Project Manager

[M7]. Ms Wan Ting (Aimee) Yang *Nov 2023 – Mar 2027*  
Sponsor: [GL29]; Role: Future Roads Programme Coordinator

[M8]. Dr Xiaoqing Sally Shi *Jun 2024 – Mar 2027*  
Sponsor: [GL30]; Role: DRF Programme Manager  
Publications: C201

## 3. List of Visiting Scholars (V)

### At the Georgia Institute of Technology

[V1]. Ms Bahriye Ilhan *Aug 2011 – Dec 2011*  
Last degree: M.S. in Proj. & Con. Man., Istanbul Technical University, Istanbul, Turkey, Feb 2008

Sponsor: ITU; Research: IFC Schema Mining for Visual Pattern Recognition Properties Selection  
Publications: C65  
Current position: Assistant Professor, Building Science, Istanbul Technical University

**At the University of Cambridge**

[V2]. Mr Christopher Kropp *Oct 2013 – Dec 2013*

Last degree: Diploma in Applied Computer Science, Ruhr University Bochum, Bochum, Germany, Feb 2013

Sponsor: RUB; Research: BIM-based Camera Registration for Augmented Reality

Publications: C63

Current position: Research Associate, Chair of Computing in Civil Engineering, Ruhr University Bochum

[V3]. Mr Thomas Lindemann *Feb 2015 – Jul 2015*

Last degree: BS in Engineering, Aachen University of Applied Sciences, Aachen, Germany, Jul 2013

Sponsor: UDE; Research: IFC Energy Standards Extension for Integrating Energy Modelling in BIM

Current position: Senior Consultant, Turner & Townsend, UK

[V4]. Ms Maria Gkovedarou *Nov 2016 – Feb 2017*

Last degree: Diploma in Civil Engineering, Aristotle University, Thessaloniki, Greece, Dec 2014

Sponsor: Erasmus; Research: Mixed Reality-based Progress Monitoring

Current position: Associate Account Manager, Bentley Systems, UK

[V5]. Ms Jun Wang *Jan 2017 – May 2017*

Last degree: MS in Civil Engineering, Dalian University of Technology, China, Jul 2013

Sponsor: Vanier Scholarship; Research: Construction Safety Risk Management

Publications: C116

Current position: Assistant Professor, Mississippi State University

[V6]. Mr Jian Chai *Feb 2017 – May 2017*

Last degree: MS in Engineering, Wuhan University, China, Jun 2013

Sponsor: [G12]; Research: Automated Modelling of Existing Industrial Facilities

Current position: Geomatics Engineer, Terra Drone Australia

[V7]. Mr Georgios Hadjidemetriou *Sep 2016 – Jul 2017*

Last degree: MS in Project Management, University College London, London, UK, Jul 2013

Sponsor: University of Cyprus; Research: Pavement Condition Diagnostics

Publications: JO3; J103; J110

Current position: Research Associate, University of Cambridge, UK

[V8]. Mr Johannes Masino *Apr 2017 – Jul 2017*

Last degree: MS in Industrial Engineering, Karlsruhe Institute of Technology, Karlsruhe, Germany, Apr 2014

Sponsor: Bosch and Audi; Research: Automated Detection and Measurement of Road Defects

Publications: JO3

Current position: PhD Candidate, Karlsruhe Institute of Technology

[V8]. Mr Alonso Urbina Sanchez *Jan 2018 – Mar 2018*

Last degree: MS in Civil Engineering, Pontifical Catholic University of Peru, Lima, Peru, Apr 2018

Sponsor: Pontifical Catholic University of Peru scholarship; Research: Lean and BIM using 6D BIM concepts

Current position: Founder, D3 Constructores

[V9]. Mr Xiao (Shell) Li *Jul 2018 – Jan 2019*

Last degree: MS in Management Science & Engineering, Chongqing University, China, Jun 2016

Sponsor: Hong Kong Polytechnic University; Research: An SWP-enabled Predictive System to Monitor and Improve the Space Constraints of Site Buffer in the Prefabrication Housing Production

Current position: PhD student, Hong Kong Polytechnic University

[V10]. Ms Katrin Jahr *Jan 2020 – Feb 2020*

Last degree: M.Sc. Civil Engineering, Bauhaus University, Weimar, Germany, Apr 2015

Sponsor: TUM Chair for Computational Modelling and Simulation; Research: Automated Construction Site Planning  
Current position: PhD student, Technical University of Munich

[V11]. Prof Rafael Sacks *Sep 2019 – Aug 2020*

Last degree: D.Sc. Civil Engineering, Technion - Israel Institute of Technology, Israel, Jun 1998

Sponsor: Centre for Digital Built Britain; Research: Establishing the Digital Construction agenda in the UK

Publications: J13; J54; J62; J63; J78; J79; B6; B7; C24; C65; C80; CP5

Current position: Professor, Technion - Israel Institute of Technology

[V12]. Ms Duygu Utkuku *May 2022 – Jun 2022*

Last degree: MS Energy Science and Technology, Istanbul Technical University, Jun 2019

Sponsor: [GI15]; Research: Building Performance Ontology to Serve Multiple Performance Simulation Domains

Current position: PhD student, Technion – Israel Institute of Technology

[V13]. Mr Zijian Wang *May 2022 – Jun 2022*

Last degree: MS Computer and Machine Vision, Cranfield University, Sep 2020

Sponsor: [GI15]; Research: GNNs for Generating Relationships Between BIM Objects

Current position: PhD student, Technion – Israel Institute of Technology

[V14]. Prof Min Liu *Jan 2022 – Jul 2022*

Last degree: PhD Civil Engineering, University of California – Berkeley, Jun 2007

Sponsor: NC State University; Research: Optimizing Construction Resource Allocation and Utilization with Digital Twins

Current position: Professor, Syracuse University

[V15]. Dr Chrysoula Litina *Jan 2022 – Dec 2022*

Last degree: PhD Civil Engineering, University of Cambridge, Jun 2015

Sponsor: National Highways; Research: Establishing the National Highways Research Alliance at Cambridge

Current position: Senior Research Engineer, National Highways

[V16]. Dr Karen Blay *Jul 2023 – Aug 2023*

Last degree: PhD in Construction Management, Loughborough University; Jun 2017

Sponsor: [GL29]; Research: Digital Twinning of Roads

Current position: Senior Lecturer, Loughborough University

[V17]. Ms Rongyan Li *Mar 2023 – Aug 2023*

Last degree: MS in Management Science and Engineering, Chongqing University; Jun 2020

Sponsor: CSC; Research: Deep learning-enable automatic tower crane planning system

Current position: Ph.D. in Building and Real Estate, HK Polytechnic University

Publications: C195

[V18]. Ms Ning Pan *Oct 2022 – Oct 2023*

Last degree: M.S. in Transportation Engineering, Tongji University; Jun 2020

Sponsor: CSC; Research: Spatial-temporal Evolution Analysis of Road Performance for Road Digital Twin and Intelligent Asset Management

Current position: Ph.D. in Transportation Engineering, Tongji University

Publications: C185

[V19]. Dr Weiwei Chen *Nov 2022 – Dec 2023*

Last degree: Ph.D. in Civil Engineering, HK University of Science & Technology; Mar 2019

Sponsor: [GI17]; Research: Automated and Optimised Maintenance, Renewal, and Upgrade of Roads

Publications: J90; C151; C155; C160; C161; C162; C180; C182

Current position: Assistant Professor, UCL

[V20]. Mr Yuexiong Ding *Aug 2023 – Dec 2023*

Last degree: M.S. in Computer Technology, Shantou University; Jun 2020

Sponsor: CityUHK; Research: Automated Construction Management using AI

Current position: Ph.D. in Civil Engineering, City University of Hong Kong

[V21]. Mr Yingying Zhang

*Dec 2023 – Feb 2024*

Last degree: M.S. in Building Technology and Science, Southeast University; Jun 2019

Sponsor: RWTH; Research: Federated Data Pattern for Semantic Digital Twins

Current position: Ph.D. in Design Computation, RWTH Aachen University

[V22]. Mr Hongbing Shang

*Sep 2023 – Aug 2024*

Last degree: B.S. in Mechanical Engineering, Northwest A&F University; Jul 2019

Sponsor: CSC; Research: Deep networks meet physical models and beyond: towards interpretable and trustworthy damage detection models

Current position: Ph.D. in Mechanical Engineering, Xi'an Jiaotong University

[V23]. Dr Qiuchen Lu

*Sep 2023 – Sep 2024*

Last degree: PhD. in Mechanical Engineering, Northwest A&F University; Jul 2019

Sponsor: UCL; Research: Linking layers of information in Digital Twins

Publications: J106

Current position: Associate Professor, UCL

[V24]. Dr Junjie Chen

*Apr 2024 – Jun 2024*

Last degree: Ph.D. in Hydraulic Engineering, Tianjin University; Jul 2020

Sponsor: HKU; Research: Holistic defect detection with computer vision

Publications: J102

Current position: Research Assistant Professor, University of Hong Kong

[V25]. Mr Leonardo Binni

*Apr 2024 – Sep 2024*

Last degree: M.Sc. in Building Engineering and Architecture, Marche Polytechnic University; Aug 2021

Sponsor: UNIVPM; Research: Updating and retrieving actual damage-related information in DT models of road transportation infrastructure

Publications: J105

Current position: Ph.D. in Civil, Environmental, and Building Engineering, Marche Polytechnic University

[V26]. Dr Gozde Basak Ozturk

*Dec 2023 – Dec 2024*

Last degree: Ph.D. in Architecture, Izmir Institute of Technology; Aug 2010

Sponsor: AMU; Research: Ontology Development for the Semantic Digital Road Twins

Publications: C173; C174; C175; C176; C177

Current position: Associate Professor, Adnan Menderes University

I created and taught several times in their entirety 4 new modules at the University of Michigan, and 5 new modules at Georgia Tech during my 7 years at those institutions; a table of them follows. I consistently received high marks in the student evaluations. These evaluations are public, and easily accessible online. Further details are available upon request.

Course Codes	Topic	No of students	Lecture hours	Times taught	Years
<b>At the Georgia Institute of Technology</b>					
BC8100 / CEE8813A	Research Methodology	19	43	1	2012
CEE4120 / CEE6190	Construction Operations	68-70	43	4	2009-2011
BC6650	Advanced Project Management	13, 30	43	2	2009, 2011
CEE8813E	Spatial and Visual Sensing for Civil Infrastructure Development	7	43	1	2010
BC4600	Project Management II	55	43	1	2009
<b>At the University of Michigan, Ann Arbor</b>					
CEE638	Sensing for Civil Infrastructure Development	3-4	40	3	2006-2008
CEE538	Concrete Construction	7, 23	40	2	2005, 2007
CEE534	Construction Engineering, Equipment and Methods	36	40	1	2007
CEE830	Construction Engineering and Management Seminar	5	15	1	2006

**1. Undergraduate & Graduate Courses**

Details of teaching at Cambridge are in Table 1 below:

**Table 1: Courses**

Year	Course	No of students	Lecture (L) or contact (C) hrs	12	13	14	15	16	17	18	19	20	21	22	Additional responsibilities
				-13	-14	-15	-16	-17	-18	-19	-20	-21	-22	-23	
IA	1CW: Structural Design	30	L4, C6		✓										Project marking
IB	2CW: S1. Plastic Collapse	309-312	C8	✓	✓										Lab leader
IB	2P8: Civil/Structural Engineering	100-130	L4		✓	✓	✓								Assessor (setting & marking)
IIA	3EAD: Surveying Course	12-44	L1, C19	✓	✓										EAA leader; marking
IIA	3PR: GD1 Constructionarium	~30	C40					✓	✓		✓				Project leader; demonstrating; marking
IIA	3PR: GD6. Surveying	17	L11, C45	✓											Project leader; marking
IIA	3PR: GD5 Engineering Geology & Surveying	24	C30 (together with GD6)	✓											Project marking
IIB	4D4: Construction Engineering	25-36 + grad students	L5		✓	✓	✓	✓	✓		✓	✓	✓		Module leader; Principal assessor
IIB	4D16: Construction Management	65-80 + grad student	L8			✓		✓					✓		Module leader; Assessor (setting &

		s													marking)
GR	FIBE MRes	8-12	L2-5			✓	✓	✓	✓		✓	✓	✓	✓	Assessor (setting & marking); Partner engagement leader; Dissertation marker; Admissions
GR	Construction Engineering Masters Programme	12-27	L4-8, C50	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	Module leader; project assessor, thesis examiner, admissions, new module development	
<b>Total annual hours of teaching</b>				<b>13</b>	<b>10</b>	<b>77</b>	<b>69</b>	<b>11</b>	<b>10</b>	<b>6</b>	<b>10</b>	<b>63</b>	<b>63</b>	<b>66</b>	
				<b>6</b>	<b>5</b>			<b>3</b>	<b>5</b>		<b>3</b>				

## 2. Supervisions

While at the University of Michigan and at Georgia Tech, I supervised the undergraduate senior year projects of 42 students in total, some of which led to publications and awards. Examples include paper [C69] which received the Best Paper Award, as well as [C14; CP2; CP8]. Details of all 42 projects are available upon request.

At Cambridge, I supervise fourth year (Part IIB) projects every year, taking 4 students in 13-14, 3 in 14-15, 5 in 15-16, 4 in 16-17, 1 in 17-18, 3 in 19-20, 1 in 20-21, and 3 in 21-22. Some of their work is getting published in journal papers [J59; J60; J81; JO2], conference papers [C115; C130; C161] and posters [CP12; CP13]. Some continued for a PhD through the FIBE Centre for Doctoral Training (e.g. M14; M18; M19).

## 3. Examining Responsibilities

At Cambridge, my individual module/paper examination responsibilities are presented in Table 2 below. On an annual basis I have marked individual papers, projects, and coursework. I have had responsibilities in each of the undergraduate years as well as for graduate students (i.e. internal examiner for 1 PhD thesis). I have also served as the external examiner for 12 PhD theses and 5 MSc theses. Further details are available upon request.

**Table 2: Examining**

Year	Course	No of students	12-13	13-14	14-15	15-16	16-17	17-18	18-19	19-20	20-21	21-22	22-23	Details of examining & assessment
IA	1CW: Structural Design	30		✓										Assessed laboratory report & oral presentations
IB	2CW: S1. Plastic Collapse	309-312	✓	✓										Marked the lab reports
IB	2P8: Civil/Structural Engineering	100-130		✓	✓	✓								In charge of Civil section of the exam paper; set 1 exam question and marked all 3
IIA	3EAD: Surveying Course	12-44	✓	✓										Marked the project reports
IIA	3PR: GD1 Constructionarium	~30						✓						Marked the project reports
IIA	3PR: GD6. Surveying	17	✓											Marked the project reports
IIA	3PR: GD5 Engineering Geology & Surveying	24	✓											Marked the project reports
IIB	4D4: Construction Engineering	25-36 + grad		✓	✓	✓	✓	✓		✓	✓	✓		Set and marked assignment 1 and half of

		students											assignment 3, out of a total of 3 assignments
IIB	4D16: Construction Management	65-80 + grad students			✓		✓					✓	Assessor, setting and marking exam
GR	FIBE MRes	8-12			✓	✓	✓	✓		✓	✓	✓	Assessor, setting and marking CM2 coursework
G	Construction Engineering Masters Programme	12-25	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	For one third of the students in each cohort (11 cohorts so far): marking of case study, essay 1 & essay 2; internal examiner of thesis; director of studies

#### 4. Teaching Points

The department of Engineering has a teaching points system that allocates points to individual teaching activities: lectures, coursework, managing modules, examining, fourth year projects, group assessment duties etc. My total teaching points and how this compared to the Civil Engineering Divisional average is presented in Table 3. As can be seen, I had one of the highest teaching loads in the division for most years due to my sizable teaching duties for both the Engineering undergraduate and the MST in CE programmes.

**Table 3: Teaching Points**

	12-13	13-14	14-15	15-16	16-17*	17-18	18-19	19-20	20-21*
My total teaching points	1167	1063	1203	1006	974.3	1133.3	147.5	1008	778
Average for Division D (Civil Engineering) (number of teaching staff in parenthesis)	681 (29)	611 (30)	512 (30)	749 (27)	693 (28)	800 (23)	Sabbatical	751 (27)	738 (27)
Ranking in Division (highest being 1)	3	4	1	4	8	5		7	12

\* Some of the point categories have not been allocated yet (e.g. demonstrations, marking, etc.).

#### 5. College & Executive Education Teaching

- Jesus College, supervisions for IB Paper 2: Structures (3 hours/week, 13 students) 2012-2013
- Churchill College, revision supervisions for IB Paper 2: Structures (8 hours, 10 students) Easter 2013
- Computing in Construction Summer School (Italy), School Director, 3 lectures July 2019
- CBIM Building Information Modelling School (Cambridge), School Director, 3 lectures December 2020
- European Council for Computing in Construction Summer School (Online), 2 lectures July 2021
- Harbour Education (online), Module Leader, 6 lectures August 2021
- Harbour Education (online), Module Leader, 6 lectures January 2021

#### 6. Postgraduate students

The lists of all supervised postgraduate students are below in Tables 4, 5, 6 and 7.

**Table 4: Directly supervised PhD Students (S)**

No.	Name	From (Gender)	Sponsor	Thesis Title	Publications	Dates	Currently at
<b>At Cambridge</b>							
S24	JMHA Jayasinghe	Sri Lanka (M)	GI23	Digitising Industrial Facilities	C167; C168; C197	2022-Date	2 <sup>nd</sup> year
S23	D Davletshina	Russia (F)	GL28	Semantic segmentation of reality capture data for generating digital twins of existing roads	J101; J112; J113; J116; J121; J122; C159; C169; C171; C181	2021-Date	3 <sup>rd</sup> year
S22	J Ding	Norway (F)	GI15	Infrastructure Digitisation and Gamification	C163	2020-Date	4 <sup>th</sup> year
S21	Z Hu	China (F)	GI15	Updating Model Geometry from Registered Point Cloud and	J95; J98; C149; C157; C187; C195	2020-Date	4 <sup>th</sup> year

				Image Datasets			
S20	V Drobnyi	Russia (M)	GI15	Infrastructure objects detection based on cascaded deep learning architectures enhanced with design priors	J100; J104; C150; C164; C165	2020-Date	4 <sup>th</sup> year
S19	M Trzeciak	Poland (M)	GL25	Interactive Point Cloud and Image Data Generation in Infrastructure Scenes	J93; J94; C142; C148; C152; C156	2019-2024	SLAM Engineer, Bonsai Robotics
S18	Y Pan*	China (M)	GL24	Digital Twinning for the Built Environment	J88; J92; J108; J115; J117; RE10; C143; C154; C158; C182; C187; C191; C193	2019-2023	MSCA Fellow, University of Cambridge
S17	M Ariyachandra	Sri Lanka (F)	GL22; Cambridge Overseas Trust	Automated Generation of Geometric Digital Twins of Existing Rail Infrastructure	J77; J97; C135; C137; C139; C140; C144; C146; C179; C188	2017-2021	Assistant Professor, UCL
S16	E Agapaki	Greece (F)	GL21	Automated Object Segmentation in Existing Industrial Facilities	J69; J76; J81; J82; J83; JO5; C120; C123; C126; C130; C145	2016-2020	Founder & CEO, Hatch Labs
S15	P Huethwohl	Germany (M)	GL19	Bridge Damage Detection and BIM Mapping	J62; J63; J66; J73; C109; CP14; SO2; RE8	2014-2018	Computer Vision Engineer, Carl Zeiss AG
S14	S Vick	USA (M)	USAF Academy; Cambridge Overseas Trust	Automated Spatial Progress Monitoring for Asphalt Road Construction Projects	J67; C111; C119	2014-2018	Civil Engineering Officer, United States Air Force
S13	R Lu	France (F)	GI8; DTA	Automated Generation of Geometric Digital Twins of Existing Reinforced Concrete Bridges	J65; J70; J73; J74; J84; B9; C109; C118; C125; C128; C134; C136; CP14	2014-2018	Lecturer, Loughborough University
S12	E Konstantinou	Greece (F)	GL18	Vision-Based, Construction Worker Task Productivity Monitoring	J64; J71; J72; J86; C101; C127	2013-2017	Post-Doc, University of Cambridge
S11	M Kopsida	Greece (F)	GL15; GL17; GI8	Automated Progress Monitoring Using Mixed Reality	J60; J75; C94; C112; C114; RE8	2013-2017	Advanced Solutions Manager, Trimble Inc.
S10	B Nguyen	Canada (F)	GL12; GL15; Cambridge Overseas Trust	Vision-Based Over-Height Vehicle Detection for Warning Drivers	J52; J57; J68; C96; C97; C117; C121; RE9	2013-2017	Sustainability Program Manager, Amazon Inc.
S9	I Anagnostopoulos	Greece (M)	GL15; GL17; GI8	Generating As-Is BIMs of existing buildings: From Planar Segments to Spaces	C93; C103; C110	2013-2017	Product Manager, Trimble Inc.
S8	S Radopoulou	Greece (F)	GL9; GL13; GL14	A Framework for Automated Road Condition Monitoring	J32; J45; J56; C57; C79; C89; C92; C98; C99; C108; CP11	2011-2016	Portfolio Manager, Trimble Inc.
<b>At the Georgia Institute of Technology / University of Michigan</b>							
S7	G Zhang	China (M)	GL10; GL14	Primitives Extraction & Bridge Component Detection in Point Cloud Data for As-Built Modelling	J41; C58; C74; C84	2011-2015	Senior Quantitative Researcher, Citadel Llc
S6	A Rashidi	Iran (M)	GL2; GL8; GL14	Improved Monocular Videogrammetry for Generating 3D Dense Point Clouds of Built Infrastructure	J17; J26; J28; J33; J34; J38; J48; C37; C42; C51; C56; C60; C67; C69; C73; C81; C100	2009-2014	Assistant Professor, University of Utah, USA
S5	H Fathi	Iran (M)	GL2; GL7; GL8; GI3; GL11	Videogrammetric Roof Surveying Using a Hybrid Structure from Motion Approach	J22; J23; J26; J28; J36; J51; C34; C37; C43; C54; C59; C64; C65; C75; C78; C83; P1; SO2; CP10	2009-2013	CSO, Pointivo Inc.
S4	JS Jeon	Korea (M)	GI4	Time Dependent Fragility Curves for Reinforced Concrete Buildings	J37; J43; J46; J50; C53; C66; C71; C72	2009-2013	Associate Professor, Hanyang University,

							Seoul, Korea
S3	S German	USA (F)	GL10; GI4	Automated Damage Assessment of RC Columns for Post-Earthquake Evaluations	J16; J20; J25; J30; J37; J38; J46; B2; B5; C25; C26; C31; C35; C36; C38; C39; C44; C45; C52; C67; C87; C88; CP9	2011-2013	Associate Professor, Texas A&M, USA
S2	MW Park	Korea (M)	GL4	Automated 3D Vision-Based Tracking of Construction Entities	J21; J27; J29; J31; J40; J42; J49; J55; C27; C28; C33; C40; C48; C55; C61; C70; C77; C82; C85; C86; C90; C113	2008-2012	Professor, Myongji University, Korea
S1	Z Zhu	China (M)	GL10; Tishman Fellowship	Column Recognition & Concrete Health Measurement for Rapid Infrastructure Assessment & Rehabilitation Using Machine Vision	J10; J11; J12; J14; J15; J16; J20; J24; J25; J37; J38; B5; C9; C10; C13; C16; C18; C23; C26; C29; C30; C31; C32; C35; C36; C39; C44; C67; C88; CP2; CP4; CP6; CP7; SO2	2006-2011	Mortenson Assistant Professor, University of Wisconsin Madison

\*I am Y Pan's primary PhD supervisor at the Technical University of Munich, via GL24

**Table 5: PhD Students co-supervised with members of my group (SR)**

No.	Name	From (Gender)	Sponsor	Thesis Title	Publications	Dates	Co-supervised with
<b>At Cambridge</b>							
SR4	P Luo	China (M)	GI23	Highway Metaverse Construction	J124; C161; C190	2023-Date	E. Parn
SR3	F Mok	Macao (M)	GI23	The Scalable Fulfilment of Road Digital Twin Data Requirements Through Task Reformulation.	C161	2022-Date	L. de Silva
SR2	R Kang	China (F)	CSC / Cambridge Overseas Trust	Digital Twin Controlled Robotic Highway Maintenance	C202	2022-Date	L. de Silva
SR1	PH Lam	Hong Kong (M)	GI23	Highway Condition-Enhanced Digital Twin Construction	J116; C194; C203	2022-Date	L. de Silva

**Table 6: Thesis-Based MPhil/ MRes/ MSt /MSc Students (M)**

No.	Name	From (Gender)	Sponsor	Thesis Title	Publications	Dates	Currently at
<b>At Cambridge</b>							
M20	NT Larsson	Sweden (M)	Trimble	Benefits of a digital approval process in the Norwegian Road Authorities		2022-2024	Senior Director (Marketing), Trimble
M19	F Mok	Macao (M)	GI23	Legacy Data Fusion into Highway Digital Twins	C161	2022-2023	1 <sup>st</sup> year
M18	P Luo	China (M)	GI23	Highway Metaverse Construction	C161	2022-2023	1 <sup>st</sup> year
M17	PH Lam	Hong Kong (M)	GI23	Highway Condition-Enhanced Digital Twin Construction	C162	2021-2022	PhD student (see table 5)
M16	JMHA Jayasinghe	Sri Lanka (M)	GI23	Digitising Industrial Facilities	C167; C168; C197	2021-2022	PhD student (see table 5)
M15	I Heitel	Spain (F)		Methodology for the development of a digital twin for performance-based design and structural assessment in bridge asset		2020-2022	2 <sup>nd</sup> year

				management			
M14	KM White	UK (M)	GI23	Identifying User Requirements for Digitally Enabling Off-Site Fabrication with Mixed Reality and Gamification	C153	2020-2021	PhD student
M13	MAI Mohamed	Egypt (M)		Integration between BIM and GIS techniques		2018-2020	PhD student, TU Berlin
M12	JP Fitzsimmons	UK (M)	Laing O'Rourke	Improving Construction Project Schedules before Execution	J84; C138	2017-2019	Principal Planner, Laing O'Rourke
M11	A Almagor	Israel (M)	Trimble	Using Neurofeedback to Identify Meaningful Events During the Early Design Evaluation Stage		2017-2019	Senior Director, Trimble
M10	M Gkovedarou	Greece (F)		Road Drainage Localisation & Condition Data Capture	C131; C133	2017-2018	Research Assistant, Bentley Systems
M9	M Broekmaat	Netherlands (M)	Trimble	Exploiting Music and Dance Notation to Improve Visualisation of BIM Data	C129	2016-2018	Chief Product Officer, Assignar
M8	S Mananghaya	Australia (F)	Laing O'Rourke	Training for a Successful Career in the UK Construction Industry		2015-2017	Project Delivery Lead, BHP
M7	T Bradley	UK (M)	Laing O'Rourke	Human Equipment Interaction During Lifting Operations		2014-2016	Project Director, Stanhope Plc
M6	J Thorpe	UK (M)	Laing O'Rourke	Pre-pour Reinforcement Inspection through Automated Point Cloud / BIM Comparison		2014-2016	Senior Engineer, Laing O'Rourke
M5	S Hand	UK (M)	Laing O'Rourke	Barriers to Implementing Off Site Manufacturing in the Water Sector		2012-2014	Preconstruction Director, Graham Group
M4	L Hui	Hong Kong (F)	GL9	Automated In-Place Brick Counting for Façade Construction Progress Estimation	J49; C76; C85	2011-2013	Assistant Engineer, Highways, Hong Kong SAR
M3	A O'Reilly	UK (M)	Laing O'Rourke	The Feasibility of Government Soft Landings in the English Healthcare Sector by 2016: An Industry Perspective		2011-2013	Founder, Productivity Plus
<b>At the Georgia Institute of Technology / University of Michigan</b>							
M2	E Palinginis	Greece (M)	GDOT	Recognition & Tracking of Vehicles for Highway Congestion Measurements	C55; C68; C70; C82; C86	2011-2012	PhD Student, Georgia Tech
M1	M Sandidge	USA (M)	Private	Truck Height Detection for Real Time Bridge Bashing Avoidance	J42; C77	2011-2012	PMO Director, RIB Americas

**Table 7: Project-Based MSc Students at Georgia Tech & U of Michigan (MS)**

No.	Name	From (Gender)	Sponsor	Research Topic	Publications	Dates	Currently at
MS7	Y Guo	China (F)	Private	Computer Vision Research Platform: Handling Errors		2010-2011	Assistant Engineer, Turner
MS6	S German	USA (F)	GL3	Machine Vision based Damage Properties Measurement		2009-2011	Assistant Professor, Texas A&M, USA
MS5	G Jog	India (F)	GL1; GL4	Calibration Methods for Videogrammetric Applications	J18; J21; J22; J35; J39; C20; C22; C40; C41; C48; C50; C62; C79; CP3; RE4; RE5	2008-2009	Course Manager, Udacity
MS4	F Cordova	Puerto Rico (M)	GL4; GL5	3D Vision Tracking at Egnatia Odos	C12; C14; C15; C17; C19	2007-2008	Director, Arecibo Observatory,

							UCF
MS3	C Wang	China (M)	GL4	Hardhat recognition for Vision Tracking of Construction Personnel		2006-2007	Planner, Kiewit
MS2	CC Huang	Taiwan (M)	UM Startup	Radio Frequency and Vision-based Positioning for Progress Tracking		2006-2007	Senior Engineer, PMA Consultants
MS1	A Arvelo	Venezuela (M)	Construction Cost Systems Inc.	Advanced System for Estimating Construction Costs		2006-2007	Senior Director, PMA Consultants

Other postgraduate students

I served as the academic advisor of 5 PhD students (T. Hillel; D. Brackenbury [C132]; J. Heaton; J. Chang; A. Yuan) and 1 MRes student (F. O'Hanlon). For the MSt Construction Engineering programme I supervise one third of the MSt students in each cohort (11 cohorts so far) as a) a Director of Studies; b) supervisor of their first case study, and c) for an additional 3-4 students each year, as supervisor of their essays. Before coming to Cambridge, I have also served as the academic advisor of 5 MSc students. Further details are available upon request.

**1. Contributions within the University**At Cambridge:

Member, Oversight Group for the Large Grant Contributions Fund, <i>U. of Cambridge</i>	2024-Date
Senior Research Fellow, Churchill College	2024-Date
Member, Executive Board, National Res. Facility for Infra. Sensing (NRFIS), <i>Dept. of Engineering</i>	2019-Date
Postdoctoral Mentor, OPdA mentoring scheme, <i>U. of Cambridge</i>	2016-Date
Member (12-Date) & Secretary (16-18), Civil Eng. Subject Group, <i>Dept. of Engineering</i>	2012-Date
Director, Construction Information Technology Laboratory, <i>Dept. of Engineering</i>	2012-Date
<i>Overseeing the annual procurement, maintenance, operation, and recycling of £1 mil in equipment value (drones, laser scanners, cameras, servers, and 70 PCs) and experiment space allocation as per NRFIS rules.</i>	
Director, Digital Roads of the Future initiative, <i>U. of Cambridge</i>	2021-2027
<i>Duties include: 1) At proposal stage, led the authoring of proposals: (i) EPSRC Digital Roads Prosperity Partnership (GL30), and (ii) EU MSCA FUTURE ROADS Fellowships programme (GL29), and secured £6.2 mil in financial support from Costain and National Highways; 2) At award stage, negotiated and facilitated the signing of joint agreements with the cash contributing partners and secured space for the initiative's 50 staff members (4 programme managers, 5 senior research associates, 4 industrial researchers, 27 post-doctoral research associates, and 10 PhD students) with divisional support; 3) At execution stage, leading the: (a) management board of the initiative in setting/Updating the initiative's overall strategic plan, both in the short and long term; (b) fundraising process to attract additional industry partners to the FUTURE ROADS programme; (c) 7 recruitment processes and subsequent steps to recruit the initiative's staff members; (d) setting and executing the partner engagement procedures for both teaching and research related engagement, leveraging both their in kind and cash support.</i>	
Partner Engagement Director, EPSRC FIBE2 CDT, <i>Dept. of Engineering</i>	2019-2027
<i>Duties include: 1) At proposal stage, secured support from 27 industry partners contributing £12 mil in kind support, plus an additional £2 mil financial support from 17 of them; 2) At award stage, negotiated and facilitated the signing of joint agreements with the cash contributing partners; 3) At execution stage, assisting the Centre Director in: (a) setting/Updating the Centre's overall strategic plan, both in the short and long term; (b) setting and executing the partner engagement procedures for both teaching and research related engagement, leveraging both their in kind and cash support; (c) marketing and recruitment for the Centre; (d) deputising for the Centre Director as needed in preparation for leading the FIBE3 CDT proposal in 2023.</i>	
Observer (representing Engineering FB), Faculty Board, <i>Faculty of Mathematics</i>	2024-2026
Member (class c), Faculty Board, <i>Dept. of Engineering</i>	2023-2026
Member, Grant Management Support Consultation Group, <i>U. of Cambridge</i>	2023-2024
Member, Degree Committee, <i>Dept. of Engineering</i>	2021-2024
Mentor, ACP CV Scheme, <i>U. Of Cambridge</i>	2021-2022
Deputy Director for Research, <i>LOR Centre for Construction Engineering</i>	2015-2022
<i>Duties include: 1) Monitoring and reporting on the research initiatives of the Centre; 2) Assisting the Centre Director in setting/ updating the Centre's overall strategic plan, both in the short and long term; 3) Assisting the Centre Manager in setting the centre administration procedures including marketing, finance and recruitment for the Centre and the CEM MSt programme; 4) Assisting the CEM MSt Course Director (CD) in curriculum development and planning; 5) Assisting the CD in marketing of the course, recruitment of applicants and during the admissions process; 6) At phase 2 renewal stage (2019-2020), in co-developing the proposal and authoring the research section.</i>	
Member, Management Advisory Group & Core Team, Centre for Digitally Built Britain, <i>U. of Cambridge</i>	2018-2019
Construction Group representative, Civil Eng. Building Project Management Board, <i>Dept. of Engineering</i>	2016-2018
Division D Member, IT Steering Committee, <i>Dept. of Engineering</i>	2015-2018
Member, Academic / Research Staff Joint Committee, <i>Dept. of Engineering</i>	2013-2018
Member (class b), Faculty Board, <i>Dept. of Engineering</i>	2016-2017
Member, Division D Move to West Cambridge Planning Sub-committee, <i>Dept. of Engineering</i>	2014-2015
<u>At the Georgia Institute of Technology:</u>	
Member, Building Construction Faculty Search Committee, <i>School of Building Construction</i>	2011-2012
Member, Diversity Committee, <i>College of Architecture</i>	2011-2012
Member, Curriculum Committee, <i>College of Architecture</i>	2010-2012

Elected School Representative of School of Civil & Environmental Engineering, <i>General Faculty Assembly</i>	2009-2012
Torchbearer of School of Building Construction, <i>Undergraduate Research Opportunities Program (UROP)</i>	2009-2012
Founding Member, Digital Building Laboratory, <i>College of Architecture</i>	2009-2012
Director, Construction Information Technology Laboratory, <i>School of Architecture</i>	2005-2012
Member, High Performance Buildings Faculty Search Committee, <i>School of Architecture</i>	2009
Judge, 4th Annual Undergraduate Research Spring Symposium	2009
Member, Ph.D. Committee, <i>College of Architecture</i>	2009
Member, Technology Committee, <i>College of Architecture</i>	2008-2009

*At the University of Michigan:*

Member, Graham Environmental Sustainability Institute	2006-2008
Member, Assessment Committee, <i>Dept. of Civil &amp; Environmental Engineering</i>	2005-2008
Director, Construction Information Technology Laboratory, <i>Dept. of Civil &amp; Env. Engineering</i>	2005-2008
Member, Curriculum Committee, <i>Dept. of Civil &amp; Env. Engineering</i>	2005-2007

*At the University of Illinois, Urbana Champaign:*

Member (01-04) & President (03-04), <i>Hellenic Student Association</i>	2001-2004
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## **2. Contributions outside the University**

### ***Membership of Professional Bodies and Learned Societies***

Senior Research Fellow, Churchill College, University of Cambridge	Since 2024
Fellow, Durham Institute of Research, Development, and Invention, Durham University	Since 2024
Honorary Member, Italian Society of Science, Technology, Engineering for Architecture (ISTEA)	Since 2023
Fellow (Reg. #PR239343), Higher Education Association, UK	Since 2022
Chartered Engineer (Reg. # 691404), Engineering Council, UK	Since 2022
Member, Institution of Civil Engineers (ICE)	Since 2022
Honorary Member, Indian Building Information Modelling Association (IBIMA)	Since 2018
Member, Association of Researchers in Construction Management (ARCOM)	Since 2017
Member, UK Engineering Professors' Council (EPC)	Since 2015
Member, International Association for Automation and Robotics in Construction (IAARC)	Since 2010
Member, ASCE CI Construction Research Council (CRC)	Since 2006
Member, European Group for Intelligent Computing in Engineering (EG-ICE)	Since 2006
Member, American Society for Engineering Education (ASEE)	Since 2005
Member (09-Date) & Associate Member (03-09), American Society of Civil Engineers (ASCE)	Since 2003
Chartered Engineer (Reg. # 94823), Technical Chamber of Greece (TEE)	Since 2003
Affiliate, Transportation Research Board (TRB)	2006-2012
Member, Society for Business and Management in Engineering (SBME)	2001-2005

### ***Membership of Advisory Bodies – Board Level***

Member, Advisory Board <i>International Joint Research Laboratory of Smart Construction (IJRL-SC), Wuhan, China</i>	2024-Date
Member, Advisory Board <i>National Centre of Technology Innovation for Digital Construction (NCTI-DC), Hong Kong</i>	2024-Date
Member, Advisory Board <i>Digital Twin Masterclass programme, Construction Industry Council, Hong Kong</i>	2023-Date
Member, Advisory Board <i>Digital Twin International Journal, Taylor &amp; Francis</i>	2022-Date
Member, International Scientific Board <i>Transport BIM Research Centre, Chang'an University</i>	2019-Date
Member (13-Date), Board of Directors <i>International Association for Automation &amp; Robotics in Construction</i>	2013-Date
Member, ARUP – AECOM & Amey – SYSTRA Consortia <i>Specialist Professional and Technical Service 3 (SPATS3) Framework, UK</i>	2025-2030
President (25-28), Incoming President (24-25), VP for Publications (19-24), Board of Directors <i>International Association for Automation &amp; Robotics in Construction</i>	2019-2028

Member, Scientific Advisory Group <i>I3P Utility Strikes Avoidance Project, National Highways, Costain</i>	2021-2022
Member, External Advisory Board <i>Digital Aposphragisma of Hagionymous Islands Project, INTERREG-VA European Commission</i>	2020-2022
Member, External Advisory Board <i>SPHERE, H2020 European Commission</i>	2019-2022
Past Chair (19-21), Founder & Chair (17-19), Management Board <i>European Council for Computing in Construction</i> <i>Duties included: (i) Authoring the council's charter; (ii) Establishing the first management board; (iii) Founding the council as a non-profit association established in Belgium; (iv) Establishing the technical and administrative committees of the council; (v) Attracting sponsorship by the UK Institution of Civil Engineers and equivalents in Turkey and Israel; (vi) Negotiating memorandums of understanding with three related international associations; (vii) Establishing and endowing three named and one best paper awards, plus overseeing the selection process for the 2021 (inaugural) awards; (viii) Establishing the European Conference on Computing in Construction conference and summer school series; (ix) Fundraising and establishing annual calls for proposals for white papers on European Policy for Computing in Construction.</i>	2017-2021
Member, Strategic Direction Committee <i>FIATECH</i>	2012-2016
Vice-President for Internal Affairs <i>American Federation of Hellenic Student Associations, Hartford, CT</i>	2003-2004
<b>Membership of Advisory Bodies – Committee Level</b>	
Member, Scientific Committee <i>International Society for Smart Construction and Production</i>	2024-Date
Member, Cambridge Robotics and Autonomous Systems Team <i>EPSRC UK Robotics and Autonomous Systems Network</i>	2016-Date
Member, Visualization, Information Modelling & Simulation Committee <i>Computing Division, American Society of Civil Engineers</i>	2010-Date
Member, International Scientific Committee <i>Georg Nemechek Institute, Technical University of Munich</i>	2023-2026
Member, AED30(2) Technology Strategic Leadership Subcommittee <i>Transportation Research Board (TRB), US National Research Council (NRC) of the National Academies</i>	2020-2025
Member, AED30 Information Systems and Technology Committee <i>Transportation Research Board (TRB), US National Research Council (NRC) of the National Academies</i>	2007-2025
Member, Best Paper Awards Editorial Committee <i>Journal of Computing in Civil Engineering, American Society of Civil Engineers</i>	2019-2025
Member, Awards Committee <i>European Council for Computing in Construction</i>	2022-2023
Member, Selection Committee, Two Lectureships in Construction and Project Engineering <i>Polytechnical University of Catalonia</i>	2021-2022
Member, Selection Committee, Lectureship in Project & Construction Engineering <i>Polytechnical University of Catalonia</i>	2020-2021
Member, Selection Committee, Two Lectureships in Project & Construction Engineering <i>Polytechnical University of Catalonia</i>	2019-2020
Member, Policy & Finance Committee <i>International Association for Automation &amp; Robotics in Construction</i>	2016-2020
Member, Workshops & Summer School Committee <i>International Association for Automation &amp; Robotics in Construction</i>	2016-2020
Member (09-19), Founder & Chair (09-14), AKC10(1) Info. Sys. in Con. Management Subcommittee <i>Transportation Research Board (TRB), US National Research Council (NRC) of the National Academies</i>	2009-2019
Member, Academic BIM European Network	2016-2018
Member, AR Learning Experience Model (IEEE P1589) Working Group <i>Institute of Electrical and Electronics Engineers</i>	2015-2018

Member, Global Centre for Excellence in Computing <i>Computing Division, American Society of Civil Engineers</i>	2012-2018
Member (10-Date), Founder & Chair (10-11) & Past Chair (11-13), Data Sensing & Analysis Committee <i>Computing Division, American Society of Civil Engineers</i> Committee work led to publications [J39; C41; RE4; N5; N6; N7]	2010-2018
Member, New Technologies Strategy Implementation Work Group <i>FIATECH</i>	2014-2016
Member, W119 Customized Industrial Construction Commission <i>CIB &amp; International Association for Automation &amp; Robotics in Construction</i>	2011-2014
Member (06-14) & Chair (06-12), Best Paper Awards Committee <i>Journal of Construction Engineering and Management, American Society of Civil Engineers</i>	2006-2014
Member, Academic Committee <i>FIATECH</i>	2010-2012
Member, Constructability Committee <i>Construction Institute, American Society of Civil Engineers</i>	2007-2010
Secretary (05-07), Vice-Chair (07-09) & Chair (09-10), Intelligent Computing Committee, CD, ASCE <i>Technical Council on Computing &amp; Information Technology, American Society of Civil Engineers</i>	2005-2010
Member, Database & Information Management Committee <i>Technical Council on Computing &amp; Information Technology, American Society of Civil Engineers</i>	2005-2010
Member, Academic Committee, Construction Industry Institute	2006-2009
Member, Review Committee, Infrastructure Report Card task group <i>American Society of Civil Engineers – Michigan Section</i>	2007-2008

### **Organization of Conferences, Workshops, Schools, and Technical Sessions**

#### **As organiser**

- Chairman, *Smart Highway Committee, World Transport Convention*, 26-29 June 2024, Qingdao, China
- Organiser, Mini Symposium on *Digital Bridge Monitoring: Integration of NDTs and Visualization Tools for Structural and Durability Assessment*, 2<sup>nd</sup> Conference of the European Association on Quality Control of Bridges and Structures – EUROSTRUCT2023, 27–29 September 2023, Austria
- Chair, *CBIM Building Information Modelling School*, 7-11 December 2020, Cambridge UK  
*Duties: (i) setting the curriculum; (ii) selecting & appointing instructors; (iii) creating website and advertising the school; (iv) receiving and evaluating 100 applications; (v) accepting 39 students and providing student support; (vi) lecturing classes; (vii) hosting all other lectures.*
- Director, *EC3/IAARC Computing in Construction Summer School*, 14-19 July 2019, Senigallia, Italy  
*Duties: (i) setting the curriculum; (ii) selecting & appointing instructors; (iii) advertising the school; (iv) lecturing classes; (v) hosting all other lectures.*
- Chair, *Digitising Bridges Workshop*, 18 September 2017, Cambridge, UK
- Chair, *Lean and Computing in Construction Congress (LC3)*, comprised of 1) the 34th CIB W78 Int. Conf. on Applications of IT in the AEC Industry, 2) the 17th Int. Conf. on Construction Applications of Virtual Reality and 3) the 25th Global Lean Construction Conf., 4-12 July 2017, Crete, Greece  
*This Congress combined three conference series into one and attracted 550 papers and over 700 attendees. It was the largest event in the world in its thematic area that year. It was also the first in its thematic area to (i) record and post all sessions on YouTube; (ii) be entirely paperless; (iii) rank papers on quality to decide on awards, keynotes, and assigned presentation format.*
- Chair, *ASCE Int. Workshop on Computing in Civil Engineering*, 23-25 June 2013, Los Angeles, CA  
*This workshop attracted 40% more papers (from 81 to 112 in proceedings) and attendees compared to its previous iterations and was the first in 15 years to have a breadth of papers from all Civil Engineering areas. I also introduced several innovations that increased the overall quality of the event.*
- Presiding Officer, *6th Annual Workshop on Information Technologies to Support Better Construction Management, 89th NRC Transportation Research Board Annual Meeting*, 10 January 2010, Washington, DC
- Presiding Officer, *5th Annual Workshop on Information Technologies to Support Better Construction Management, 88th NRC Transportation Research Board Annual Meeting*, 11 January 2009, Washington, DC
- Organizational Committee Member and Chairperson, *12th Int. Conf. on Computing in Civil and Building Engineering and 2008 Int. Conf. on Information Technology in Construction*, 15-17 October 2008, Beijing, China

- Presiding Officer, 4th Annual Workshop on Information Technologies to Support Better Construction Management, *87th NRC Transportation Research Board Annual Meeting*, 13 January 2008, Washington, DC

- Assistant Technical Chair, *ASCE Int. Conf. on Computing in Civil Engineering*, 12-15 July 2005, Cancun, Mexico

**As committee member**

- International Scientific Committee Member, *TUM GNI International Symposium on Artificial Intelligence for the Built World*, 10-12 September 2024, Munich, Germany
- International Scientific Committee Member, *39th Int. Symp. on Automation and Robotics in Construction*, 16-19 November 2022, Seoul, Korea
- Scientific Committee Member, *29th EG-ICE Annual Workshop on Intelligent Computing in Engineering*, 6-8 July 2022, Aarhus, Denmark
- Programme Committee Member, *21st Int. Conf. on Construction Applications of Virtual Reality*, 8-10 December 2021, Middlesbrough, UK
- Scientific Committee Member, *28th EG-ICE Annual Workshop on Intelligent Computing in Engineering*, 30 June – 2 July 2021, Berlin, Germany
- International Scientific Committee Member, *18th Int. Conf. on Computing in Civil and Building Engineering joint with 37th CIB W78 Int. Conf. on Applications of IT in the AEC Industry*, 2-4 June 2020, Sao Paulo, Brazil
- Local Planning Committee Member, *2nd International Conference on Smart infrastructure and Construction*, 8-10 July 2019, Cambridge, UK
- Technical Committee Member, *2019 ASCE Construction Research Congress*, 12-15 June 2019, Montreal, Canada
- Scientific Committee Member, *36th CIB W78 Int. Conf. on Applications of IT in the AEC Industry*, 18-20 September 2019, Newcastle, UK
- Scientific Committee Member, *36th Int. Symp. on Automation and Robotics in Construction*, 21-24 May 2019, Banff, Canada
- Scientific Committee Member, *35th CIB W78 Int. Conf. on Applications of IT in the AEC Industry*, 1-3 October 2018, Chicago, IL
- Chair (Panel on Future of Computing in Civil Engineering) & Scientific Committee Member, *25th EG-ICE Annual Workshop on Intelligent Computing in Engineering*, 10-13 June 2018, Lausanne, Switzerland
- Technical Committee Member, *2018 ASCE Construction Research Congress*, 2-5 April 2018, Seattle, WA
- Scientific Committee Member, *34th Int. Symp. on Automation and Robotics in Construction*, 28 June – 1 July 2017, Taipei, Taiwan
- Technical Committee Member, *2017 ASCE Int. Workshop on Computing in Civil Engineering*, 25-27 June 2017, Seattle, WA
- International Scientific Committee Member, *9th Int. Conf. on Construction in the 21st Century*, 5-7 March 2017, Dubai, UAE
- Scientific Committee Member, *16th Int. Conf. on Construction Applications of Virtual Reality*, 12-13 December 2016, Hong Kong, China
- Best Paper Award Committee Member, *11th European Conf. on Product and Process Modelling*, 7-9 September 2016, Limassol, Cyprus
- Technical Committee Member, *33rd Int. Symp. on Automation and Robotics in Construction*, 18-21 July 2016, Auburn, AL
- Scientific Committee Member, *32nd CIB W78 Int. Conf. on Applications of IT in the AEC Industry*, 27-29 October 2015, Eindhoven, Netherlands
- Technical Committee Member, *6th Int. Conf. on Construction Engineering and Project Management*, 11-14 October 2015, Busan, Korea
- International Scientific Committee Member, *4th Creative Construction Conf.*, 21-24 June 2015, Krakow, Poland
- International Scientific Committee Member, *32nd Int. Symp. on Automation and Robotics in Construction*, 8-12 June 2015, Oulu, Finland
- Technical Committee Member, *CSCE Int. Construction Specialty Conf.*, 8-10 June, 2015, Vancouver, Canada
- International Scientific Committee Member, *8th Int. Conf. on Construction in the 21st Century (CITC-8)*, 27-30 May 2015, Thessaloniki, Greece

- Scientific Committee Member, *14th Int. Conf. on Construction Applications of Virtual Reality*, 16-18 November 2014, Sharjah, UAE
- Scientific Committee Member, *21th EG-ICE Annual Workshop on Intelligent Computing in Engineering*, 16-18 July 2014, Cardiff, UK
- International Scientific Committee Member & Track Leader, *31st Int. Symp. on Automation and Robotics in Construction*, 9-11 July 2014, Sydney, Australia
- International Scientific Committee Member, *15th Int. Conf. on Computing in Civil and Building Engineering joint with 31st CIB W78 Int. Conf. on Applications of IT in the AEC Industry*, 23-25 June 2014, Orlando, FL
- Scientific Committee Member, *3rd Creative Construction Conf.*, 21-24 June 2014, Prague, Czech Republic
- Scientific Committee Member, *13th Int. Conf. on Construction Applications of Virtual Reality*, 30-31 October 2013, London, UK
- International Scientific and Advisory Committee Member, *30th Int. Symp. on Automation and Robotics in Construction*, 11-15 August 2013, Montreal, Canada
- Scientific Committee Member, *2nd Creative Construction Conf.*, 6-9 July 2013, Budapest, Hungary
- Scientific Committee Member, *20th EG-ICE Annual Workshop on Intelligent Computing in Engineering*, 1-3 July 2013, Vienna, Austria
- Advisory Committee Member, *5th Int. Conf. on Construction Engineering and Project Management*, 9-11 January 2013, Anaheim, CA
- Scientific Committee Member, *12th Int. Conf. on Construction Applications of Virtual Reality*, 1-2 November 2012, Taipei, Taiwan
- International Scientific Committee Member, *29th CIB W78 Int. Conf. on Applications of IT in the AEC Industry*, 17-19 October 2012, Beirut, Lebanon
- Technical Committee Member, *ASCE Int. Conf. on Construction and Real Estate Management (2012 ICCREM)*, 1-2 October 2012, Kansas City, MO
- Scientific Committee Member, *19th EG-ICE Annual Workshop on Intelligent Computing in Engineering*, 4-6 July 2012, Munich, Germany
- Editorial Committee Member, *2012 Int. Conf. on Architecture and Civil Engineering*, 28-30 June 2012, Jeju, Korea
- International Scientific Committee Member, *14th Int. Conf. on Computing in Civil and Building Engineering*, 27-29 June 2012, Moscow, Russia
- Technical Committee Member, *ASCE Int. Workshop on Computing in Civil Engineering*, 17-20 June 2012, Clearwater Beach, FL
- Technical Committee Member & Track Chair, Data Sensing and Analysis Track, *ASCE Construction Research Congress*, May 2012, Lafayette, IN
- Scientific Committee Member, *Int. Conf. on Construction Applications of Virtual Reality (CONVR)*, 3-4 November 2011, Weimar, Germany
- Scientific Committee Member, *18th EG-ICE Annual Workshop on Intelligent Computing in Engineering*, 6-8 July 2011, Enschede, Netherlands
- Technical Committee Member, *ASCE Int. Workshop on Computing in Civil Engineering*, 19-22 June 2011, Miami, FL
- Technical Session Chairman, IT and Computer Applications II, *ASCE Construction Research Congress*, 14-17 June 2011, Ottawa, Canada
- Tours Committee Member, *NSF CMMI Research and Innovation Conf.*, 4-7 January 2011, Atlanta, GA
- International Scientific Committee Member, *27th CIB W78 Int. Conf. on Applications of IT in the AEC Industry*, 16-18 November 2010, Cairo, Egypt
- International Scientific Committee Member, *13th Int. Conf. on Computing in Civil and Building Engineering and XVII Workshop on Intelligent Computing in Engineering*, 30 June - 2 July, 2010, Nottingham, UK
- Scientific Committee Member, *6th Int. Conf. on Innovation in Architecture, Engineering and Construction (AEC)*, 9-11 June 2010, State College, PA
- International Scientific Committee Member, *5th Int. Conf. in Project Management*, 29-31 May 2010, Iraklion, Greece

- Track/Technical Coordinator, Information Technology and Computer Applications, *ASCE Construction Research Congress*, 8-11 May 2010, Banff, AB
- Scientific Committee Member, *16th CD/EG-ICE Annual Workshop on Intelligent Computing in Engineering*, 14-17 July 2009, Berlin, Germany
- Technical Session Chairman, Cutting Edge Development, *ASCE Int. Workshop on Computing in Civil Engineering*, 24-27 June 2009, Austin, TX
- Panellist, Tomorrow's Faculty Panel Workshop, *ASCE Construction Research Congress*, 4-7 May 2009, Seattle, WA
- Scientific Committee Member, *15th Annual CD/EG-ICE Workshop on Intelligent Computing in Engineering*, 2-4 July 2008, Plymouth, UK
- Organizational Committee Member, *12th Symp. on Construction Engineering & Management*, 3 July 2008, Kaohsiung, Taiwan
- Technical Committee Member, *ASCE Int. Workshop on Computing in Civil Engineering*, 24-27 July 2007, Pittsburgh, PA
- Technical Committee Member & Track Chair, *ASCE Construction Research Congress*, 26-29 June 2007, Freeport, Bahamas
- Technical Committee Member & Technical Session Chair, *ASCE Joint Int. Conf. on Computing & Decision Making in Civil & Building Engineering*, 14-16 June 2006, Montreal, QC

### **Editorships**

<b>Editorships</b>	<b>Papers/annum</b>	<b>Dates</b>
• <u>Editorial Board Member, Journal of Civil Engineering Sciences</u> <i>China Civil Engineering Society, Tsinghua University, AAAS</i>	5	2025-Date
• <u>Advisory Board Member, Journal of Smart Construction</u> ELSP	2	2025-Date
• <u>Editorial Advisory Board Member, Journal of Smart and Sustainable Environment</u> Emerald	2	2025-Date
• <u>Editorial Board Member, Korean Journal of Construction Engineering and Management</u> Korea Institute of Construction Engineering and Management	2	2024-Date
• <u>Associate Editor, Journal of AI in Civil Engineering</u> Springer Nature	2	2021-Date
• <u>Advisory Editor (23-Date) &amp; Consultant Editor (19-22), Engineering Reports</u> Wiley	2	2019-Date
• <u>Section Editor, Construction Technologies, Technologies Journal</u> MDPI	2	2018-Date
• <u>Editorial Review Board Member, J. of Engineering, Construction and Arch. Management</u> Emerald Group Publishing	2	2015-Date
• <u>Editorial Board Member, Journal of Automation in Construction</u> Elsevier	10	2013-Date
• <u>Editorial Board Member, Journal of Advanced Engineering Informatics</u> Elsevier	9	2008-Date
• <u>Associate Editor, Journal of Computing in Civil Engineering</u> American Society of Civil Engineers	18	2008-Date
• <u>Specialty Editor (09-Date) &amp; Assistant SE (06-09), Journal of Con. Eng. and Management</u> <i>Information Technology Specialty, American Society of Civil Engineers</i>	60	2006-Date
• <u>Special Issue Editor, International Journal of Transportation Science and Technology</u> Elsevier	2 (total)	2024-2025
• <u>Special Issue Editor, Journal of Computers in Industry</u> Elsevier	2 (total)	2023-2024
• <u>Associate Editor, Journal of Engineering</u> The Institution of Engineering and Technology	3	2017-2018
• <u>Editorial Board Member, Computing for the Built Environment</u> Springer	2	2016-2017

• <u>Editorial Board Member, Journal of Construction Engineering Science and Engineering Publishing Company</u>	2	2012-2017
• <u>Editorial Board Member, Journal of Frontiers in Construction Engineering World Academic Publishing</u>	2	2012-2015
• <u>Co-Editor, Journal of Advanced Engineering Informatics Special Issue on Infrastructure Computer Vision, Elsevier</u>	15 (total)	2014-2015
• <u>Editorial Board Member, Journal of Architecture and Civil Engineering Science and Engineering Research Support Society</u>	2	2012-2014
• <u>Co-Editor, Journal of Computing in Civil Engineering Special Issue on IT/AIS: Information Technology Support to Advance Infrastructure Systems Management American Society of Civil Engineers</u>	15 (total)	2009-2011
• <u>Co-Editor, Journal of Computing in Civil Engineering Special Issue on IT Support for Advanced Infrastructure Systems, American Society of Civil Engineers</u>	14 (total)	2006-2009

#### **Peer Review**

#### **Reviews/annum**

#### **Dates**

#### Promotion and probation/tenure packages

Associate Professor, Probation, <i>University of Catalonia, Spain</i>		2021-2022
Reader, Promotion, <i>University of Edinburgh, UK</i>		2021-2022

#### Grant proposals & awards

Nominator, VinFuture Prize Council	1	2024-Date
Member, Peer Review College (20-Date) & Associate College (14-20), <i>EPSRC</i>	2	2014-Date
Discovery Grants, <i>Natural Sciences and Engineering Research Council of Canada</i>	1	2009-Date
<i>Israel Science Foundation</i>	1	2021-2022
Domain Science, <i>Dutch Research Council (NWO)</i>	1	2021-2022
Building, Construction & Real Estate Programme, <i>Research Council of Norway</i>	5	2021-2022
Starting Grants Program, <i>Phys. Sci. &amp; Eng., European Research Council</i>	1	2021-2022
Consolidator Grants Program, <i>Phys. Sci. &amp; Eng., European Research Council</i>	10	2020-2021
Research and Sponsored Projects Office, <i>UAE University</i>	1	2020-2021
Ireland Postgraduate Scholarship scheme, <i>Irish Research Council</i>	10	2016-2020
Engineering & Technology Sciences Committee, <i>Hellenic Foundation for Research &amp; Innovation</i>	10	2018-2019
CETI Awards Jury, <i>FIATECH</i>	20	2015-2016
ENGINEERING 1 Study Group, <i>Chilean National Science and Technology Commission</i>	2	2015-2016
Israeli Ministry of Science, Technology and Space	1	2015-2016
National Centre for Science & Tech. Evaluation, <i>Kazakhstan Ministry of Education &amp; Science</i>	2	2014-2015
National Research Network for Low Carbon Energy & the Environment, <i>Welsh government</i>	1	2014-2015
Qatar National Research Foundation	2	2013-2016
Civil Infrastructure Systems Program, <i>CMMI Division, US National Science Foundation</i>	10	2009-2012

#### Journals

Transactions on Image Processing, <i>IEEE</i>	1	<u>Since</u> 2019
Journal of Smart Infrastructure & Construction, <i>Institution of Civil Engineers</i>	1	2017
Journal of Engineering Structures, <i>Elsevier</i>	1	2016
Journal of Performance of Constructed Facilities, <i>American Society of Civil Engineers</i>	1	2016
Journal of Engineering, Construction and Architectural Management, <i>Emerald</i>	1	2016
Journal of Structural Health Monitoring, <i>Sage</i>	1	2015
Journal of Materials and Design, <i>Elsevier</i>	1	2015
Journal of Mathematical Problems in Engineering, <i>Hindawi</i>	2	2015
Journal of Engineering Science and Technology, <i>Elsevier</i>	1	2015
Journal of Bridge Engineering, <i>American Society of Civil Engineers</i>	2	2015
Structures Journal, <i>Elsevier</i>	1	2014
Scientific World Journal, <i>Hindawi</i>	1	2014
Architectural Engineering and Design Management, <i>Taylor &amp; Francis</i>	1	2013
Intelligent Transportation Systems Magazine, <i>IEEE</i>	1	2013
Transactions on Intelligent Transportation Systems, <i>IEEE</i>	1	2013
Journal of Advanced Robotic Systems, <i>INTECH</i>	1	2013
Journal of Aerospace Engineering, <i>American Society of Civil Engineers</i>	2	2013
Transactions on Mechatronics, <i>IEEE/ASME</i>	1	2012
Sensors – Open Access Journal, <i>MDPI AG</i>	2	2012
Journal of Construction & Building Materials, <i>Elsevier</i>	1	2012
Journal of Computer-Aided Civil and Infrastructure Engineering, <i>Wiley-Blackwell</i>	6	2011
Journal of Civil Engineering and Management, <i>Taylor &amp; Francis</i>	1	2011
Journal of Soil Dynamics and Earthquake Engineering, <i>Elsevier</i>	2	2011

Journal of Transportation Engineering, <i>American Society of Civil Engineers</i>	1	2010
Earthquake Spectra, <i>Earthquake Engineering Research Institute</i>	2	2010
Journal of Management in Engineering, <i>American Society of Civil Engineers</i>	1	2010
Journal of Advances in Civil Engineering, <i>Hindawi Publishing</i>	1	2010
Lean Construction Journal, <i>International Group for Lean Construction</i>	1	2008
Canadian Journal of Civil Engineering, <i>NRC Research Press</i>	1	2007
Journal of Information Technology in Construction, <i>Open Access Journal</i>	1	2007
Journal of Automation in Construction, <i>Elsevier</i>	9	2007
Journal of AI for Engineering Design, Analysis & Manufacturing, <i>Cambridge Univ. Press</i>	1	2007
Transportation Research Record, <i>Transportation Research Board</i>	2	2007
Journal of Information Sciences, <i>Elsevier</i>	1	2006
Journal of Construction Engineering & Management, <i>American Society of Civil Engineers</i>	10	2005
Journal of Computing in Civil Engineering, <i>American Society of Civil Engineers</i>	5	2003

### Books

Construction Engineering and Management Books, <i>John Wiley &amp; Sons</i>	1	2009
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### Conference Proceedings\*

Transportation Research Board Annual Meeting, <i>National Academy of Sciences</i> , (3-5 papers annually)	2012-Date
European Conference on Computing in Construction, <i>European Council on Computing in Construction</i>	2020
Computer-Human Interaction Conference, <i>ACM SIGCHI</i>	2009
13th EG-ICE Workshop, <i>European Group on Intelligent Computing in Engineering</i>	2006
IL-IN and North Central Joint Section Conference, <i>American Soc. for Eng. Education</i>	2006
PM Conference on Constr. in the 21st Century, <i>Intl. Project Management Association</i>	2005

\*Ad-hoc reviews; not as member of a technical committee.

### **3. Outreach Activities**

- Academic tutor, Cambridge University Teams, CIOB Global Student Challenge 2016-2018  
 The GSC is the worldwide student competition organized by the Chartered Institute of Building based on the well-known construction business game called MERIT. Each year, over 100 teams compete. I assembled and managed teams of 3<sup>rd</sup> and 4<sup>th</sup> year undergraduate Engineering Department students that take the construction modules (4D16, 4D4). Specifically (teams / final rank):
  - CUBE (2<sup>nd</sup>), CUEDconstruct (9<sup>th</sup>) 2016-2017
  - CURB (4<sup>th</sup>) 2017-2018
- Organizer, Automating Construction Outreach Activity 2014-2016  
 A demonstration event for local primary schools repeated annually during Easter term. It engages 4<sup>th</sup> year and graduate students in demonstrating their projects to a very young audience and allowing them to participate in the demo through hands-on exercises.
- ACE Mentor Program, Atlanta 2009-2012  
 My involvement at ACE was:
  - Co-Chair, Mentoring Committee 2011-2012
  - Co-Chair, Curriculum Committee 2011-2012
  - Member, Governing Board 2010-2012
  - Co-organizer, Collaborating in Construction Outreach Activity 2010-2012
  - Co-organizer, Building Bridges Outreach Activity 2009-2012
- Creator, Column Recognition Exhibition 2009-2010  
*CAREER EXPO, Construction Education Foundation of Georgia*
- Creator, Vision Based Resources Tracking Exhibition 2007-2008  
*Just-Built-It EXPO, Washtenaw Contractors Association*
- Co-organizer, Building Bridges Outreach Activity 2005-2008  
*Bates elementary School, Dexter, MI*
- Outreach Mentor, GIFT Fellowship Program 2009-2012  
*Centre for Education Integrating Science, Mathematics and Computing*  
 Each summer: hosted a team of 1 high school teacher and 2-4 high school students of an underrepresented background at the CIT laboratory. Topics:
  - Pavement Modelling & Camera- GPS Communication for Detection of Pavement Distresses 2012
  - Test-bed & Hardware Design for Data Collection and Testing of 3D Reconstruction Algorithms 2011
  - Robotic Car Sensor Platform for Roadway Condition Data Collection 2010

**Atlanta High Schools Science Fair 2010, 1<sup>st</sup> Prize; Fulton County High Schools Science Fair 2011, 1<sup>st</sup> Prize; Georgia State High Schools Science Fair 2011, 2<sup>nd</sup> Prize**

➤ Commercial Port Modelling for Naval Research Controlled Experiments  
**Atlanta High Schools Science Fair 2009, 1<sup>st</sup> Prize**

*2009*

