Matthew J. DeJong

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EMPLOYMENT

Academic

Associate Professor in Structural Engineering (July 2020 - present)
Department of Civil & Environmental Engineering**,** *University of California, Berkeley*

Assistant Professor in Structural Engineering (July 2018 – June 2020)
Department of Civil & Environmental Engineering**,** *University of California, Berkeley*

Senior Lecturer in Structural Engineering (September 2015 - July 2018)
Department of Engineering**,** *University of Cambridge*, UK

Lecturer in Structural Engineering (August 2009 – August 2015)
Department of Engineering**,** *University of Cambridge*, UK

Engineering Fellow (October 2010 – July 2018)
St. Catharine's College**,** Cambridge, UK

Visiting Researcher & Fulbright Scholar (August 2007 – August 2008)
Faculty of Civil Engineering & Geosciences, *Delft University of Technology*, The Netherlands

Research Assistant (2003 –2007)
Massachusetts Institute of Technology, Cambridge, MA, USA

Industry

Founding Partner (2009 - present)
Ochsendorf DeJong and Block, LLC **-** Structural Engineering Consultants (www.odb-engineering.com)
Consultant regarding the assessment of existing masonry structures and the design of novel structures.

Project Engineer (April 2001 - June 2003)
Buehler & Buehler Associates, Structural Engineers, Inc., Sacramento, California (www.bbse.com)
Designed timber, masonry, concrete and steel buildings, including a residential complex, school, and surgery center. Developed design models using RAM, SAP, ETABS, and AutoCAD.

EDUCATION

Doctor of Philosophy, Building Technology: Structures - Massachusetts Institute of Technology (June 2009)
Dissertation: Seismic assessment strategies for masonry structures
Advisor: John A. Ochsendorf, Professor, MIT

Master of Science, Civil and Environmental Engineering - Massachusetts Institute of Technology (June 2005)
Thesis: Sources of high temperature degradation of cement-based materials: Nanoindentation and microporoelastic analysis.
Advisor: Franz-Josef Ulm, Professor, MIT

Bachelor of Science, Civil and Environmental Engineering - University of California, Davis (March 2001)
Department Citation Award (highest department award given to one or more graduates)

TEACHING AND ADVISING

Current Teaching (Structural Engineering, University of California, Berkeley) ``
CE 225 - Dynamics of Structures
CE 120 - Structural Engineering

Previous Teaching (University of Cambridge)

Part 1A: Structural Mechanics, lecturer
Part 1A: Structural Design, lecturer
Part 1A: Dimensional Analysis – Structures, lab leader
Module 4D6: Dynamics in Civil Engineering (MEng course)
Module 5R19: Earthquake Engineering (graduate course)

Research Supervision

Leader of a research group focused on earthquake engineering, structural dynamics, soil-structure interaction, structural health monitoring, masonry structures, and computational modelling.

PUBLICATIONS AND PRESENTATIONS

(post-docs and students working under my supervision are underlined)

Journal Publications

[62] Acikgoz S, Pascariello MN, Luciano A, Aguilar JP, Dewhirst M, Bilotta E, **DeJong** MJ, Mair R (in press). Innovative monitoring of the response of a heritage masonry building to nearby tunnelling in London Clay, *Geotechnique*.

[61] Zhang S, Liu H, **DeJong** MJ (in press) A mechanical model to interpret distributed fiber optic strain measurement at displacement discontinuities, *Structural Health Monitoring*.

[60] Acikgoz S, Franza A, **DeJong** MJ, Mair R (in press). Cracked equivalent beam models for assessing tunnelling-induced damage in masonry buildings, *ASCE Journal of Geotechnical and Geoenvironmental Engineering.*

[59] Alexakis C, Liu H, **DeJong** MJ. (in press) Damage identification of brick masonry under cyclic loading based on acoustic emissions, *Engineering Structures*.

[58] Franza A, Deck O, **DeJong** MJ (2020) Charts for the mining-induced deflection of buildings, *Canadian Geotechnical Journal.* DOI: 10.1139/cgj-2019-0041

[57] Mehrotra A, **DeJong** MJ (2020). A methodology to account for interface flexibility and crushing effects in multi-block masonry collapse mechanisms, *Meccanica*, 55, 1237-1261. DOI: 10.1007/s11012-020-01161-x

[56] Malomo D, **DeJong** M, Penna A (2020). Influence of bond pattern on the in-plane behaviour of brick masonry piers, *International Journal of Architectural Heritage*. DOI: 10.1080/15583058.2019.1702738

[55] Franza A, Acikgoz S, **DeJong** MJ (2020) Timoshenko beam models for the coupled analysis of building response to tunnelling, *Tunnelling and Underground Space Technology.* DOI: 10.1016/j.tust.2019.103160

[54] Ritter S, Giardina G, Franza A, **DeJong** MJ (2020). Building deformation caused by tunnelling: centrifuge modelling, *ASCE Journal of Geotechnical and Geoenvironmental Engineering*, 146(5), 1-17. DOI: 10.1061/(ASCE)GT.1943-5606.0002223

[53] Giardina G, Losacco N, **DeJong** MJ, Viggiani G, Mair RJ (2020). Influence of soil modelling on the assessment of tunnelling-induced deformations of structures. *Proc of the ICE – Geotechnical Engineering,* 173(5):39-397. DOI: 10.1680/jgeen.18.00127

[52] Malomo D, **DeJong** MJ, Penna A (2019). Distinct element modelling of the in-plane cyclic response of full-scale URM walls subjected to shear-compression, *Earthquake Engineering & Structural Dynamics,* 48(12), 1322-1344. DOI: 10.1002/eqe.3178

[51] Porter D, Mehrotra A, **DeJong** MJ, Bass A, Guebard M (2020). Material and seismic assessment of the Great House at Casa Grande Ruins National Monument, Arizona, *ASCE Journal of Architectural Engineering*, 26(1), 1-10. DOI: 10.1061/(ASCE)AE.1943-5568.0000371

[50] Cocking S, Acikgoz S, **DeJong** MJ (2020). Interpretation of the dynamic response of a masonry arch rail viaduct using finite element modelling, *ASCE Journal of Architectural Engineering*, 26(1), 1-10. DOI: 10.1061/(ASCE)AE.1943-5568.0000369

[50] Ritter S, **DeJong** MJ, Giardina G (2019). Experimental evaluation of analytical methods to assess building response to tunnelling subsidence, Geomechanics and Tunnelling 12(5), 499-504. DOI: 10.1002/geot.201900025

[49] **DeJong** MJ, Giorgia G, Chalmers B, Lazarus D, Ashworth D, Mair RJ (2019). Impact of the Crossrail tunnelling project on masonry buildings with shallow foundations*, Proc of the ICE – Geotechnical Engineering.* 172(5), 402–416. DOI: 10.1680/jgeen.18.00178

[48] Franza A, Ritter S, **DeJong** MJ (2020). Continuum solutions of tunnel-building interaction and a modified framework for deformation prediction, *Geotechnique*, 70(2), 108-122. DOI: 10.1680/jgeot.17.P.279

[47] Pelekis I, Madabhushi GSP, **DeJong** MJ (2019). Soil behaviour beneath buildings with structural and foundation rocking. *Soil Dynamics & Earthquake Engineering*, 123, 48–63.

[46] Michiels T, Adriaenssens S, **DeJong** MJ (2019) Form-finding of corrugated shell structures for seismic design and validation using nonlinear pushover analysis, *Engineering Structures*, 181, 362-373.

[45] Franza A, **DeJong** MJ (2019). Elastoplastic solutions to predict tunnelling-induced load redistribution and deformation of surface structures, *ASCE Journal of Geotechnical and Geoenvironmental Engineering,* 145(4), 1-14. doi: 10.1061/(ASCE)GT.1943-5606.0002021.

[44] Giardina G, Milillo P, **DeJong** MJ, Perissin D, Milillo G (2019). Evaluation of InSAR monitoring data for post-tunnelling settlement damage assessment, *Structural Control and Health Monitoring*, 26(2), 1-19. doi: 10.1002/stc.2285

[43] Mehrotra A, **DeJong** MJ (2018). The influence of interface geometry, stiffness and crushing on the dynamic response of masonry collapse mechanisms, *Earthquake Engineering & Structural Dynamics,* 47, 2661–2681, doi: 10.1002/eqe.3103

[42] Pelekis I, Madabhushi GSP, **DeJong** MJ (2018). Seismic performance of buildings with structural and foundation rocking in centrifuge testing, *Earthquake Engineering & Structural Dynamics,* 47, 2390-2409*,* doi: 10.1002/eqe.3089

[41] Ye C, Acikgoz S, Pendrigh S, Riley E, **DeJong** MJ (2018). Mapping deformations and inferring movements of masonry arch bridges using point cloud data, *Engineering Structures*, 173, 530-545.

[40] Mehrotra A, **DeJong** MJ (2018). A CAD-based analytical modelling tool for the dynamic analysis of masonry collapse mechanisms, *Engineering Structures*, 172, 833-849.

[39] Misseri G, **DeJong** MJ, Rovero L (2018). Experimental and numerical investigation on the collapse of pointed masonry arches under quasi-static horizontal loading, *Engineering Structures*, 173, 180-190.

[38] Giardina G, **DeJong** MJ, Ormond B, Chalmers B, Mair RJ (2018). A comparison of current analytical methods for predicting soil-structure interaction due to tunnelling, *Tunnelling and Underground Space Technology*, 79, 319-335.

[37] Acikgoz S, Kechavarzi C, Soga K and **DeJong** MJ (2018). Dynamic response of a damaged masonry railway viaduct: Measurement and Interpretation, *Engineering Structures*, 168, 544-558.

[36] Acikgoz S and **DeJong** MJ, Soga K (2018). Sensing dynamic displacements in masonry rail bridges using 2D digital image correlation, *Structural Control and Health Monitoring*, 25(8), e2187. doi: 10.1002/stc.2187

[35] Milillo P, Giardina G, **DeJong** MJ, Perissin D, Milillo G (2018). Multi-temporal InSAR Structural Health Monitoring Via Relative Stiffness Method: The London Crossrail case study, *Remote Sensing*, 10(2), 287. doi:10.3390/rs10020287

[34] Block P, Van Mele T, Liew A, **DeJong** MJ, Escobedo D, Ochsendorf J (2018) Structural design, fabrication and construction of the Armadillo vault, *The Structural Engineer,* 96(5), 10-20.

[33] Severini L, Cavalagli N, **DeJong** MJ, Gusella V (2018). Dynamic response of masonry arch with geometrical irregularities subjected to a pulse-type ground motion, *Nonlinear Dynamics*, 91(1), 609-624. doi: 10.1007/s11071-017-3897-z

[32] Acikgoz S, **DeJong** MJ (2018). A simple model to quantify rocking isolation, *Bulletin of the New Zealand Society of Earthquake Engineering*, 51(1), 12-22.

[31] Mehrotra A, **DeJong** MJ (2017). The performance of slender monuments during the 2015 Gorkha earthquake, *Earthquake Spectra*, 33(S1), S321-S343. doi: 10.1193/120616EQS223M

[30] Ritter S, **DeJong** MJ, Giardina G, Mair RJ (2017). The effect of surface structures on soil deformations due to tunnelling in sand, *Rivista Italiana di Geotecnica*, 51(4), 7-21. doi: 10.19199/2017.4.0557-1405.07

[29] Ritter S, **DeJong** MJ, Giardina G, Mair RJ (2017). Influence of building geometry on tunnelling-induced ground movements, *Geotechnique* 67(10), 926-937.

[28] Acikgoz S, **DeJong** MJ (2017). Vibration modes and equivalent models for flexible rocking structures, *Bulletin of Earthquake Engineering*, 15(10), 4427–4452. doi: 10.1007/s10518-017-0128-4

[27] Ritter S, **DeJong** MJ, Giardina G, Mair RJ (2017). Centrifuge modelling of building response to tunnel excavation, *International Journal of Physical Modelling in Geotechnics (ICE),* 18(3), 146-161. doi: 10.1680/jphmg.16.00053

[26] Cocking SH, Price S, **DeJong** MJ (2017). The effects of wind on the loading and vibration of stone pinnacles, *Masonry International*, 29(2), 53-60.

[25] Block P, Van Mele T, Rippmann M, **DeJong** MJ, Ochsendorf J, Escobedo M, Escobedo D (2016). Armadillo Vault - An extreme discrete stone shell, *DETAIL,* 10, 940-942. (not peer reviewed)

[24] Tallett-Williams S., et al. (2016) Site Amplification in the Kathmandu Valley during the 2015 M7.6 Gorkha, Nepal Earthquake, *Bulletin of Earthquake Engineering*, 14(12), 3301–3315.

[23] Acikgoz S, **DeJong** MJ (2016). Analytical modelling of multi-mass flexible rocking structures, *Earthquake Engineering & Structural Dynamics*, 45(13), 2061–2238.

[22] Acikgoz S, **DeJong** MJ (2016). Experimental identification of the dynamic characteristics of a flexible rocking structure, *Journal of Earthquake Engineering*, 20(8), 1199-1221.

[21] Riveiro B, **DeJong** MJ, Conde B (2016). Automated processing of large point clouds for structural health monitoring of masonry arch bridges, *Automation in Construction*, 72(3), 258-268.

[20] Tondelli M, Beyer K, **DeJong** MJ (2016). Influence of boundary conditions on the out-of-plane response of brick masonry walls in buildings with RC slabs, *Earthquake Engineering & Structural Dynamics* , 45(8), 1337–1356.

[19] Giardina G, **DeJong** MJ, Mair RJ (2015). Interaction between surface structures and tunnelling in sand: centrifuge and computational modelling. *Tunnelling and Underground Space Technology*, 50, 465-478.

[18] McInerney J, **DeJong** MJ (2015). Discrete Element Modelling of Groin Vault Displacement Capacity, *International Journal of Architectural Heritage*, 9(8): 1037-1049.

[17] Mauro A, de Felice G, **DeJong** MJ, (2015). The relative dynamic resilience of masonry collapse mechanisms, *Engineering Structures*, 85, 182-194.

[16] **DeJong** MJ, Dimitrakopoulos EG (2014). Dynamically equivalent rocking structures, *Earthquake Engineering and Structural Dynamics*, 43(10), 1543-1564.

[15] Acikgoz MS, **DeJong** MJ (2014). The rocking response of large flexible structures to earthquakes, *Bulletin of Earthquake Engineering*, 12(2), 875-908.

[14] Dimitrakopoulos EG, **DeJong** MJ (2012). Revisiting the rocking block: Closed form solutions and similarity laws, *Proceedings of the Royal Society A,* 468(2144), 2294-2318.

[13] **DeJong** MJ (2012). Seismic response of stone masonry spires: Analytical Modeling, *Engineering Structures*, 40, 556-565.

[12] **DeJong** MJ, Vibert C (2012). Seismic response of stone masonry spires: Computational and Experimental Modeling, *Engineering Structures*, 40, 566-574.

[11] Acikgoz MS, **DeJong** MJ (2012). The interaction of elasticity and rocking in flexible structures allowed to uplift, *Earthquake Engineering & Structural Dynamics*, 41(15), 2177-2194.

[10] Dimitrakopoulos EG, **DeJong** MJ (2012). Overturning of retrofitted rocking structures under pulse-type excitations, *ASCE Journal of Engineering Mechanics,* 138(8), 963–972.

[9] **DeJong** MJ (2012). Amplification of rocking due to horizontal ground motion, *Earthquake Spectra,* 28(4), 1405-1421.

[8] **DeJong** MJ, Ochsendorf JA (2010). Dynamics of in-plane arch rocking: An energy approach, *Proceedings of the ICE - Engineering and Computational Mechanics,* 163(3), 179-186.

[7] Block P, **DeJong** MJ, Davis L, Ochsendorf JA (2010). Tile vaulted systems for low-cost construction in Africa, *ATDF7Journal*, 7, 4-13.

[6] **DeJong** MJ, Belletti B, Hendriks MAN, Rots JG (2009). Shell elements for sequentially linear analysis: Failure of masonry structures under lateral loading, *Engineering Structures*, 31, 1382-1392.

[5] **DeJong** MJ, Hendriks MAN, Rots JG (2008). Sequentially linear analysis of fracture under non-proportional loading, *Engineering Fracture Mechanics*, 75, 5042-5056.

[4] **DeJong** MJ, De Lorenzis L, Adams S, Ochsendorf J (2008). Rocking stability of masonry arches in seismic regions, *Earthquake Spectra*, 24(4), 847-865.

[3] De Lorenzis L, **DeJong** MJ, Ochsendorf J (2007). Failure of masonry arches under impulse base motion, *Earthquake Engineering and Structural Dynamics*, 36, 2119-2136.

[2] **DeJong** MJ, Ulm F-J (2007). The nanogranular behavior of C-S-H at elevated temperatures (up to 700^{o} C), *Cement and Concrete Research*, 37(1), 1-12.

[1] Block P, **DeJong** MJ, Ochsendorf JA (2006). As hangs the flexible line: Equilibrium of masonry arches, *The Nexus Network Journal*, 8(2), 9-19.

Book Chapters

DeJong MJ, Penna A. (2016) Design of masonry structures, In: *Seismic design of buildings to Eurocode 8*, AY Elghazouli (ed), Spon Press, London.

Ochsendorf JA, **DeJong** MJ. (2014) Structure and Construction of King's College Chapel, In: *King's College Chapel 1515-2015*, JM Massing, N Zeeman (eds.), London/Turnhout: Harvey Miller.

Dimitrakopoulos EG, **DeJong** MJ (2013). Seismic Overturning of Rocking Structures with External Viscous Dampers, In: *Computational Methods in Earthquake Engineering, Vol. 2*, M. Papadrakakis, M. Fragiadakis, V. Plevris (eds.), Springer.

Conference Publications

Malomo D, **DeJong** MJ (2020) A novel macro-distinct element model for the in-plane analysis of unreinforced masonry structures, *17th World Conf on Earthquake Engineering (17WCEE),* Sendai, Japan.

DeJong MJ, Pelekis I, McKenna F, Madabhushi G (2020) A comparison of structural and foundation rocking using a modified nonlinear Winkler foundation model, *17th World Conf on Earthquake Engineering (17WCEE),* Sendai, Japan.

Zhang S, Liu H, Darwish E, Mosalam KM, **DeJong** MJ (2020) Detection of damage propagation in a reinforced concrete beam-column connection using distributed fiber-optic strain sensing, *17th World Conf on Earthquake Engineering (17WCEE),* Sendai, Japan.

Malomo D, **DeJong** MJ, Penna A (2020) Meso-scale distinct element modeling of in-plane loaded unreinforced brick masonry walls, *12th Int Conf on Structural Analysis of Historical Constructions (SAHC)*, Barcelona, Spain.

Cocking S, **DeJong** MJ (2019) Measurement of the flow of force in a skewed masonry arch bridge using fibre optic sensing, *9th Int Conf on Structural Health Monitoring of Intelligent Infrastructure (SHMII)*, St Louis, MO, USA.

Alexakis H, Franza A, Acikgoz S, **DeJong** MJ (2019) A multi-sensing monitoring system to study deterioration of a railway bridge, *9th Int Conf on Structural Health Monitoring of Intelligent Infrastructure (SHMII)*, St Louis, MO, USA.

Malomo D, **DeJong** MJ, Penna A (2019) A Homogenized Distinct Macro-block (HDM) model for simulating the in-plane cyclic response of URM walls, *13th North American Masonry Conference (NAMC)*, Salt Lake City, UT, USA.

Malomo D, Morandini C, Penna A, **DeJong** MJ (2019) Assessing the reliability of the equivalent-frame idealization of URM facades with irregular opening layouts by comparison with discrete micro-models, *Society for Earthquake and Civil Engineering Dynamics (SECED) Conference*, London, UK.

Brackenbury D, Brilakis I, **DeJong** MJ (2019) Automated defect detection for masonry arch bridges, *Int Conf on Smart Infrastructure and Construction (ICSIC)*, Cambridge, UK.

Cocking S, Ye C, **DeJong** MJ (2019) Damage assessment of a railway bridge using fibre optic sensing and lidar data, *Int Conf on Smart Infrastructure and Construction (ICSIC)*, Cambridge, UK.

Alexakis H, Franza A, Acikgoz S, **DeJong** MJ (2019) Monitoring bridge degradation using dynamic strain, acoustic emission and environmental data, *Int Conf on Smart Infrastructure and Construction (ICSIC)*, Cambridge, UK.

Acikgoz S, Franza A, **DeJong** MJ, Mair RJ (2019) Tunnelling under a heritage structure: Distributed sensing data and cracked equivalent beam models, *Int Conf on Smart Infrastructure and Construction (ICSIC)*, Cambridge, UK.

Macchiarulo D, Giardina G, Milillo P, Gonzalez Marti J, Sanchez J, **DeJong** MJ (2019) Settlement-induced building damage assessment using MT-InSAR data for the Crossrail case study in London, *Int Conf on Smart Infrastructure and Construction (ICSIC)*, Cambridge, UK.

Cocking S, Thompson D, **DeJong** MJ (2019) Comparative evaluation of monitoring technologies for a historic skewed masonry arch railway bridge, *9th Int Conf on Arch Briges (ARCH)*, Porto, Portugal.

Morandini C, Caserini M, Malomo D, Penna A, **DeJong** MJ (2019) Equivalent-frame models idealisation of laterally-loaded URM façades with irregular opening distributions, XVIII ANIDIS Conf, Ascoli, Italy.

Xu J, Marshall AM, Franza A, Boldini D, Amorosi A, **DeJong** MJ (2019) The response of framed buildings on raft foundations to tunnelling: a centrifuge and numerical modelling study, *XVII European Conf on Soil Mech & Geotech Engineering (ECSMGE)*, Reykjavik, Iceland.

Alexakis C, Franza A, Acikgoz A, **DeJong** MJ (2019) Structural health monitoring of a masonry viaduct with Fibre Bragg Grating sensors, *Int Assoc of Bridge and Structural Eng (IABSE) Symposium*, Guimarães, Portugal.

Acikgoz A, **DeJong** MJ, Soga K (2019) Measurement errors in vision-based displacement monitoring of masonry bridges, *Int Assoc of Bridge and Structural Eng (IABSE) Symposium*, Guimarães, Portugal.

Michiels T, **DeJong** MJ, Adriaenssens S, (2018) The optimal form of corrugated shells designed to withstand earthquakes, *IASS Symposium*, Boston, USA.

Brackenbury D, **DeJong** MJ (2018) Mapping Mortar Joints in Image Textured 3D Models to Enable Automatic Damage Detection of Masonry Arch Bridges, *17th Int Conf Computing in Civil & Building Engineering (ICCCBE)*, Tampere, Finland.

Malomo D, **DeJong** MJ, Penna, A (2018). Distinct element modelling of the in-plane failure mechanisms of URM walls, *10th International Masonry Conference*, Milan, Italy.

Cocking S, Acikgoz S, **DeJong** MJ (2018). The importance of modelling assumptions when analysing the dynamic response of a masonry rail viaduct, *10th International Masonry Conference*, Milan, Italy.

Giardina G, Milillo P, **DeJong** MJ, Perissin D, Milillo G (2018). Example applications of satellite monitoring for post-tunnelling settlement damage assessment for the Crossrail project in London, *11th Int Conf on Structural Analysis of Historical Constructions (SAHC)*, Cusco, Peru.

Mehrotra A, **DeJong** MJ (2018). A methodology to account for crushing effects during out-of-plane collapse of masonry, *11th Int Conf on Structural Analysis of Historical Constructions (SAHC)*, Cusco, Peru.

Baraccani S, Palermo M, Trombetti T, **DeJong** MJ (2018). Seismic modelling of a masonry monument including the interaction of the vaults, longitudinal walls and soil, *11th Int Conf on Structural Analysis of Historical Constructions (SAHC)*, Cusco, Peru.

Pelekis I, Madabhushi G, **DeJong** MJ (2018). Modelling of rocking structures in centrifuge tests, *9th International Conference on Physical Modelling in Geotechnics*, London, UK.

Ritter S, **DeJong** MJ, Giardina G, Mair RJ (2018). 3D printing of masonry structures for centrifuge modelling, *9th International Conference on Physical Modelling in Geotechnics*, London, UK.

Pelekis I, Madabhushi G, **DeJong** MJ (2018). Experimental identification of frequency content for a rocking structure on dense sand, *16th European Conference on Earthquake Engineering*, Thessaloniki, Greece.

Dichorou E, **DeJong** MJ (2018). The Effect of Geometric Imperfections on the Buckling Response of a Thin Masonry Shell Structure Subjected to Earthquake Loads, *16th European Conference on Earthquake Engineering*, Thessaloniki, Greece.

Franza A, Acikgoz S, **DeJong** MJ (2018). Linear models for the evaluation of the response of beams and frames to tunnelling, *9th European Conference on Numerical Methods in Geotechnical Engineering*, Porto, Portugal.

Franza A, **DeJong** MJ, Morici M, Carbonari S, Dezi F (2018). Artificial neural networks for the evaluation of impedance functions of inclined pile groups, *9th European Conference on Numerical Methods in Geotechnical Engineering*, Porto, Portugal.

Chaiyasarn K, Khan W, Ali L, Brackenbury D, **DeJong** MJ (2018). Crack detection in Masonry Structures using Convolutional Neural Networks and Support Vector Machines, *35th International Symposium on Automation and Robotics in Construction (ISARC 2018)*, Berlin, Germany.

Franza A, **DeJong** MJ (2017). A simple method to evaluate the response of structures with continuous or separated footings to tunnelling-induced ground movements, *Congress on Numerical Methods in Engineering,* Valencia, Spain.

Pelekis I, Madabhushi G, **DeJong** MJ (2017). A centrifuge investigation of two different soil-structure systems with rocking and sliding on dense sand. *COMPDYN2017 (Comp. Methods in Structural Dynamics and Earthquake Engineering)*, Rhodes, Greece.

Dichorou E, Giardina G, **DeJong** MJ (2017). Finite element modelling to predict cracking and seismic collapse of a thin masonry shell structure, *Proceedings of the IASS Annual Symposium*, Hamburg, Germany.

Severini L, **DeJong** MJ, Cavalagli N, Gusella V (2017). Effect of geometric irregularities on the dynamic response of masonry arches, *10th International Conference on Structural Dynamics (EURODYN)*, Salerno, Italy.

Severini L, Cavalagli N, **DeJong** MJ, Gusella V (2017). Fragility analysis of masonry arches with geometrical uncertainties under sine pulse base motion, *23rd Conf of the Italian Association of Theoretical and Applied Mechanics (AIMETA)*, Salerno, Italy.

DeJong MJ, Ritter S, Pelekis I, Fleming C (2017). Examples of Centrifuge Testing for Experimental Structural Engineering, *7th International Conference on Advances in Experimental Structural Engineering*, Pavia, Italy.

Ritter S, Giardina G, **DeJong** M J, Mair R J. (2017). Influence of building geometry on bending and shear deformations of buildings subject to tunnelling subsidence: experimental testing, *Euro:TUN*, Innsbruck, Austria.

Giardina G, Ritter S, **DeJong** M J, Mair R J. (2017). Influence of building geometry on bending and shear deformations of buildings subject to tunnelling subsidence: numerical modelling, *Euro:TUN*, Innsbruck, Austria.

Ritter S, Giardina G, **DeJong** M J, Mair R J. (2017). The role of building dimensions and position on the response of buildings to tunnelling subsidence: centrifuge modelling. *9th International Symposium on Geotechnical Aspects of Underground Construction in Soft Ground*, Sao Paulo, Brazil.

Giardina G, Ritter S, **DeJong** M J, Mair R J. (2017). The role of building position on the response of buildings to tunnelling subsidence: numerical modelling. *9th International Symposium on Geotechnical Aspects of Underground Construction in Soft Ground*, Sao Paulo, Brazil.

Mehrotra A, **DeJong** MJ (2017). A modelling tool for dynamic analysis of masonry collapse mechanisms, 16th *World Conference on Earthquake Engineering*, Santiago, Chile.

DeJong MJ (2016). Settlement damage to masonry structures, keynote paper, *10th Int Conf on Structural Analysis of Historical Constructions (SAHC)*, Leuven, Belgium.

Giardina G, Ritter S, **DeJong** MJ, Mair RJ (2016). Modelling the 3D brittle response of masonry buildings to tunnelling, *10th Int Conf on Structural Analysis of Historical Constructions (SAHC)*, Leuven, Belgium.

Mehrotra A, **DeJong** MJ (2016). Analysis of historical monuments damaged by the 2015 Nepal earthquake, *10th Int Conf on Structural Analysis of Historical Constructions (SAHC)*, Leuven, Belgium.

Tarrio I, **DeJong** MJ (2016). Two approaches to modelling the stability of the basilica of Vézelay, *10th Int Conf on Structural Analysis of Historical Constructions (SAHC)*, Leuven, Belgium.

Riveiro B, **DeJong** M, Conde B (2016) An automatic method for geometric segmentation of masonry arch bridges for structural engineering purposes, *ISPRS*, Prague, Czechoslovakia.

Ritter S, Giardina G, **DeJong** MJ, Mair RJ (2016). Experimental challenges of modelling structure response to tunnelling, *3rd European Conference on Physical Modelling in Geotechnics*, Nantes, France.

Ritter S, Giardina G, **DeJong** MJ, Mair RJ (2016). Centrifuge modelling of tunneling-induced settlement damage to 3d-printed surface structures, *World Tunnelling Conference*, San Francisco, CA, USA.

Wilkinson S, et al (2015). Earthquake Impacts on Mountain Communities – Observations and Lessons from the Mw 7.8 Gorkha Earthquake of 25 April, 2015. *10th Pacific Conference on Earthquake Engineering*, Sydney, Australia.

Mehrotra A, Arede A, **DeJong** MJ (2015). Discrete element modelling of a post-tensioned masonry arch, *15th Int Conf on Civil, Structural and Environmental Engineering Computing*, Prague, Czechoslovakia.

DeJong MJ, Giardina G, Plunkett W, Ochsendorf JA (2015). Seismic design of a stone vault, *Society for Earthquake and Civil Engineering Dynamics (SECED) Conference*, Cambridge, UK.

Acikgoz MS, Argyle A, **DeJong** MJ (2014). The role of supplemental damping in limiting forces and displacements in a rocking structure, *2nd European Conf on Earthquake Engineering and Seismology (2ECEES)*, Istanbul, Turkey.

Giardina G, **DeJong** MJ, Mair R (2014). Important aspects when modelling the interaction between surface structures and tunnelling in sand, *8th Int Symp on Geotechnical Aspects of Underground Construction in Soft Ground*, Seoul, Korea.

Giardina G, **DeJong** MJ, Mair R (2014). Masonry response to tunnelling: A sensitivity study on the effect of cracking and building weight, *9th Intl Masonry Conference*, Guimarães, Portugal.

Dimitrakopoulos EG, **DeJong** MJ, Giouvanidis AI (2013). Seismic Assessment of Rocking Bridge Bents Using an Equivalent Rocking Block, *World Congress on Advances in Structural Engineering and Mechanics*, Jeju, South Korea.

Acikgoz MS, **DeJong** MJ (2013). Analytical and experimental observations of vibration modes of flexible rocking structures, *SECED Young Members Conference*, Newcastle, UK.

DeJong MJ, Dimitrakopoulos EG (2013). Towards a Unified Description of Rocking Structures, *COMPDYN2013 (Comp. Methods in Structural Dynamics and Earthquake Engineering)*, Kos, Greece.

Acikgoz MS, **DeJong** MJ (2013). Linearization and Modal Analysis of Flexible Rocking Structures, *NZSEE Conference*, Wellington, New Zealand.

McInerney J, Trzcinski I, **DeJong** MJ (2012). Discrete element modelling of masonry using laser scanning data, *8th Int Conf on Structural Analysis of Historical Constructions (SAHC)*, Wroclaw, Poland.

Van Mele T, McInerney J, **DeJong** MJ, Block P (2012). Physical and computational modelling of masonry vault collapse, *8th Int Conf on Structural Analysis of Historical Constructions (SAHC)*, Wroclaw, Poland.

DeJong MJ, Dimitrakopoulos EG (2012). Equivalent rocking systems: Fundamental rocking parameters, *15th World Conference on Earthquake Engineering*, Lisbon, Portugal.

Acikgoz MS, **DeJong** MJ (2012). Characterizing the vulnerability of flexible rocking structures to strong ground motions, *15th World Conference on Earthquake Engineering*, Lisbon, Portugal.

DeJong MJ, Ramage MH, Travers B, Terry S (2011). Testing and analysis of geogrid-reinforced thin-shell masonry, IABSE-IASS Symposium, London, England.

Ramage MH, **DeJong** MJ (2011). Design and construction of geogrid-reinforced thin-shell masonry, IABSE-IASS Symposium, London, England.

Bernardi D, Mortensen B, DeJong JT, **DeJong** MJ (2011). Bio-cemented sandstone bricks, IABSE-IASS Symposium, London, England.

Acikgoz MS, DeJong MJ (2011). The interaction of elasticity and rocking in flexible structures allowed to uplift, *Turkish Earthquake Engineering and Seismology Conference*, Ankara, Turkey.

Dimitrakopoulos EG, **DeJong** MJ (2011). Seismic overturning of damped rocking structures, in M. Papadrakakis et al. (Eds.), *COMPDYN2011 (Comp. Methods in Structural Dynamics and Earthquake Engineering)*, Corfu, Greece.

DeJong MJ, Vibert C (2011). Seismic response of a stone masonry spire, in M. Papadrakakis et al. (Eds.), *COMPDYN2011 (Comp. Methods in Structural Dynamics and Earthquake Engineering)*, Corfu, Greece.

DeJong MJ (2010). Predicting rocking failure under seismic loading, *14th European Conf on Earthquake Engineering*, Ohrid, Macedonia.

DeJong MJ, Harrison S (2010). A biaxial failure criterion for sequentially linear analysis, *8th Intl Masonry Conference*, Dresden, Germany.

DeJong MJ, Hendriks MAN, Rots JG (2009). Shear retention and mesh alignment during fracture using sequentially linear analysis, *12th Intl Conf on Fracture*, Ottawa, Canada.

Rots JG, Hendriks MAN, Belleti B, **DeJong** MJ (2009). Sequentially linear analysis as a pushover analysis tool for masonry structures, in M. Papadrakakis et al. (Eds.), *COMPDYN2009 (Comp. Methods in Structural Dynamics and Earthquake Engineering)*, Rhodes, Greece.

Hendriks MAN, **DeJong** MJ, van de Graaf AV, Belletti B, Rots JG (2009). Sequentially linear analysis for concrete structures, in C-K Choi, C Meyer, N Bicanic (Eds.), *Intl Conf on Computational Technologies in Concrete Structures (CTCS09),* Jeju, Korea, pp 580-590.

DeJong MJ (2009). Redefining the vulnerability of rocking structures to horizontal ground motion, *Proc of 2009 Earthquake Engineering Research Institute (EERI) Annual Meeting*.

DeJong MJ (2008). Rocking block amplification through energy maximization, *Dynamics Days Europe 2008*, Delft, The Netherlands (abstract & poster).

Rots JG, Hendriks MAN, **DeJong** MJ, Belletti B (2008). Stepwise softening for concrete and masonry structures, in JF Abel, JR Cooke (Eds.), *Proc of IASS-IACM 2008 (Int. Conf. on Computation of Shell and Spatial Structures)*, Ithaca, New York.

DeJong MJ, De Lorenzis L, Ochsendorf JA (2007). Numerical modeling of masonry arch stability under impulse base motion, in M. Papadrakakis et al. (Eds.), *COMPDYN2007 (Comp. Methods in Structural Dynamics and Earthquake Engineering)*, Crete, Greece.

DeJong MJ, Ochsendorf JA (2006). Analysis of vaulted masonry structures subjected to horizontal ground motion, in PB Lourenco, P Roca, C Modena, S Agrawal (Eds.), *Proc of the 5th Int Conf on Structural Analysis of Historical Constructions*, New Delhi, India, Vol. 2, pp 973-980.

AWARDS AND CONTRIBUTIONS

Selected Research Funding

EPSRC Research Grant (Ref: EP/H032657/1) – Principal Investigator
Project title: Retrofit of Rocking Structures

EPSRC Research Grant (Ref: EP/K018221/1) – Principal Investigator
Project title: Tunnelling-induced settlement damage to masonry structures: Centrifuge testing and computational modelling

EPSRC Research Grant (Ref: EP/N021614/1) – Co-Investigator
Project title: CSIC Innovation and Knowledge Centre Phase 2

Turing Institute Funding – Principal Investigator
Project Title: Data-Centric Bridge Assessment

AECOM / Network Rail (Industry Funding) – Principal Investigator
Project Title: Monitoring of Barkston Road Skew Bridge

Global Alliance (NUS – UC Berkeley – Cambridge) - Seed Funding for Collaborative Research Project – Co-Investigator
Project Title: Translucent City

NSF Research Grant (Ref #1903296) – Co-Principal Investigator
Project title: Modeling and Monitoring of Urban Underground Climate Change (MUC2)

Other Fellowships & Scholarships

U.S. Student Fulbright Grant
The Netherlands (September 2007 - May 2008)

TU Delft Research Fellowship, Faculty of Civil Engineering & Geosciences
Awarded to fund research of visiting Ph.D. students and professors (August 2007 - August 2008)

MIT Presidential Fellowship
Awarded to most outstanding incoming student in the department. (September 2005)

MIT Department of Civil & Environmental Engineering Schoettler Fellowship
Awarded to outstanding incoming students in the department (September 2003)

NCAA Post-Graduate Scholarship
Awarded for academic and athletic excellence, and potential in graduate studies (Spring 2001)

Chevron Civil Engineering Scholarship
Awarded for outstanding performance in engineering coursework (2000-2001)

Awards

Individual awards:

Best Lecturer (First year students) - Department of Engineering, University of Cambridge
Student selected best lecturer among all first year engineering courses (2015, 2016, 2017)

Edoardo Benvenuto Prize
Awarded for exceptional scientific research on historic structures (December 2009)

MIT Building Technology Program Tucker-Voss Award
Awarded to the top graduating doctoral student in the field of construction (June 2009)

Earthquake Engineering Research Institute (EERI) Graduate Paper Competition Award
Annual graduate student paper competition for earthquake engineering (February 2009)

UC Davis Department of Civil & Environmental Engineering Citation Award
Highest department award given to one or more graduates (June 2001)

Third Team Academic All-American
Awarded for outstanding performance in academics and athletics. (1999)

Group awards:

New Civil Engineer – 2019 TechFest Award
Category: Rail Visionary Award; Project Title: "Innovative structural health monitoring of ageing railway infrastructure"; Winning Team: Centre for Smart Infrastructure and Construction (CSIC, University of Cambridge)

New Civil Engineer – 2018 TechFest Award
Category: Research Impact- Application in the Industry; Project Title: "Health monitoring of heritage buildings with fibre optic sensors during the Bank Station Capacity Upgrade"; Winning Team: Centre for Smart Infrastructure and Construction (CSIC, University of Cambridge), Geocisa, Dragados and Transport for London.

New Civil Engineer - Tunnelling Awards 2018
Category: Innovation in Instrumentation & Monitoring Award; Project Title: "Innovative Monitoring of Tunnelling-Induced Displacements and Strains, Bank Station Capacity Upgrade"; Winning Team: Cambridge Centre for Smart Infrastructure and Construction (CSIC, University of Cambridge), Geocisa UK, Dragados and Transport for London.

Institute of Structural Engineers (IStructE) – 2017 Structural Awards
Category: Small Projects (Under £1 million); Commendation (i.e. 2nd place): "Armadillo Vault", Venice, Italy; Winning Team: Block Research Group (ETH Zurich) and Ochsendorf DeJong & Block Engineering

DETAIL - Readers' Prize 2016
Project Title: "Armadillo Vault", Venice, Italy; Winning Team: Block Research Group (ETH Zurich), Ochsendorf DeJong & Block Engineering, The Escobedo Group

Certifications and Affiliations

Elected Committee Member, The Society for Earthquake and Civil Engineering Dynamics (SECED), UK (June 2013 – April 2018)
Member, The Society for Earthquake and Civil Engineering Dynamics (SECED), UK (2012 - Present)
Member, IStructE Earthquake Engineering Field Investigation Team (EEFIT) (2010 - Present)
Member, Earthquake Engineering Research Institute (EERI) (2007 - Present)
Member, American Society of Civil Engineers (2003 - Present)
Member, Golden Key National Honors Society (Spring 1999 - Spring 2001)
Engineer In Training (EIT), California Certificate (May 2000)

Journal Reviewer

Advances in Structural Engineering
ASCE Journal of Structural Engineering
ASCE Journal of Geotechnical and Geoenvironmental Engineering
Automation in Construction
Bulletin of Earthquake Engineering
Canadian Geotechnical Journal
Computer-Aided Civil and Infrastructure Engineering
Construction and Building Materials
Earthquake Engineering and Structural Dynamics
Earthquake Spectra (Reviewer & Responsible Article Editor)
Engineering Fracture Mechanics
Engineering Structures
ICE – Engineering and Computational Mechanics
ICE – Structures and Buildings
International Journal of Architectural Heritage (Editorial Board)
International Journal of Damage Mechanics
Journal of Civil Structural Health Monitoring
Journal of Materials in Civil Engineering

Journal of Sound and Vibration
Materials and Structures
Proceedings of the Royal Society A: Mathematical, Physical & Engineering Sciences
Soil Dynamics and Earthquake Engineering
Structures (Editorial Board)
Tunnelling and Underground Space Technology

Research Peer Reviewer

Grant Proposals:

- *Pacific Earthquake Engineering Research Center (PEER)* - Research Grant Proposal Reviewer
- *Engineering & Physical Sciences Research Council* (EPSRC) – Member of the Peer Review College; Peer Review Panel Member and Research Grant Reviewer
- *Swiss National Science Foundation* (SNSF) – Research Grant Proposal Reviewer
- *UK Institution of Civil Engineering (ICE) R&D Fund* – Research Grant Proposal Reviewer

Conference Scientific Committees

- **SAHC 2019**, Structural Analysis of Historical Constructions (September 2019)
- **MuRiCo5,** Mechanics of Masonry Structures, Bologna, Italy (June 2017)
- **16WCEE**, World Conference on Earthquake Engineering (January 2017)
- **SAHC 2016**, Structural Analysis of Historical Constructions (September 2016)
- **SECED 2015, Head of Organising Committee,** International conference of the UK Society for Earthquake and Civil Engineering Dynamics, Cambridge, UK (July 2015)
- **MuRiCo4,** Mechanics of Masonry Structures, Ravenna, Italy (September 2014)
- **9IMC,** 9th International Masonry Conference, Guimarães, Portugal (July 2014)