

# Seokho Jeong

## Curriculum Vitae

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### Education

- 2013 **Ph.D. in Civil Engineering**, *Georgia Institute of Technology (USA)*.
- 2008 **Master in Earthquake Engineering and Engineering Seismology**, *Grenoble Alps University (France)/University of Pavia (Italy)/University of Patras (Greece)*.  
(Erasmus Mundus European joint master program)
- 2008 **Master (M2P) in Geophysics**, *Grenoble Alps University (France)*.
- 2006 **B.E. in Civil Engineering**, *Changwon National University (South Korea)*.

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### Employment

- 2020–present **Assistant Professor**, *Changwon National University*.
- 2018–2020 **Lecturer**, *University of Waikato*.
- 2016–2018 **Field Research Engineer**, *QuakeCoRE/University of Canterbury*.
- 2014–2016 **Post Doctoral Fellow**, *University of Canterbury*.
- 2010–2013 **Graduate Research Assistant**, *Georgia Institute of Technology*.
- 2013 **Graduate Teaching Assistant (Dynamics)**, *Georgia Institute of Technology*.
- 2008–2010 **Graduate Teaching Assistant (Geomatics)**, *Georgia Institute of Technology*.

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### Research Interests

#### **Role of the site effect in local and regional seismic hazard.**

- Dynamic response analysis and validation of soft sedimentary basins.
- Analysis and validation of the topographic effect on the ground motions.
- Development of the simulation-based regional scale ground motion amplification models.

#### **Application of sensors and geophysical methods in earthquake engineering.**

- Geophysical site characterisation testing.
- Application of low-cost motion sensors for earthquake engineering problems.

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### Honors and Awards

- 2011 **Travel grant** (to present at the 2011 SSA annual meeting), *Seismological Society of America*
- 2008-2010 **Rotary ambassadorial scholarship**, *Rotary Foundation (\$23,000)*
- 2006-2008 **Erasmus Mundus scholarship** (for the joint master program in Earthquake Engineering and Engineering Seismology), *European Commission (€35,600)*

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### Research and Other Grants

- 2019 Dynamic site characterisation of the Waikato basin using surface wave methods, QuakeCoRE Contestable funding, E6471\_19229, (Role: PI), \$58,265
- 2018 Characterisation of the fundamental site periods in the Hamilton urban area using the H/V spectral ratio method, University of Waikato Summer Scholarship, (Role: Student Supervisor), \$6,000
- 2018 Simulation of the topographic amplification of ground motions in Port Hills, New Zealand, Nvidia GPU Grant Program, 1 x Nvidia Quadro P6000 (hardware grant)

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## Society Memberships

- Member**, New Zealand Society of Earthquake Engineering
- Member**, New Zealand Geotechnical Society
- Member**, Seismological Society of America
- Member**, Earthquake Engineering Research Institute

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## Teaching

### Undergraduate courses taught

- 2019 **ENGCV531: Earthquake Engineering**, *University of Waikato*.
- 2019 **ENGCV331: Geotechnical Engineering II**, *University of Waikato*.
- 2019 **ENGCV231: Geotechnical Engineering I**, *University of Waikato*.
- 2018–2019 **ENGCV241: Highways and transportation**, *University of Waikato*.

### Teaching assistantship

- Fall 2008– Fall 2010 **CEE3010: Geomatics**, *Georgia Institute of Technology*.
- Spring 2013 **CEE2040: Rigid Body Dynamics**, *Georgia Institute of Technology*.

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## Service

### Technical journal referee

- Since 2019 Tunnelling and Underground Space Technology (Elsevier)
- Since 2019 International Journal of Physical Modelling in Geotechnics (ICE publishing)
- Since 2017 Engineering Geology (Elsevier)
- Since 2017 Bulletin of Earthquake Engineering (European Association for Earthquake Engineering)
- Since 2017 Bulletin of the Seismological Society of America (Seismological Society of America)
- Since 2016 Soil Dynamics and Earthquake Engineering (Elsevier)
- Since 2015 Geoscientific Model Development (European Geological Union)
- Since 2015 Earthquake Spectra (Earthquake Engineering Research Institute)

### Contribution to external research communities

Since 2018 **Flagship 1 Deputy Leader**, *FP1: Ground Motion Simulation & Validation*, QuakeCoRE, New Zealand.

QuakeCoRE is a Centre of Research Excellence (CoRE) for earthquake resilience, funded by the Tertiary Education Commission. I serve as a deputy leader of Flagship 1, which aims to induce a paradigm shift in strong ground motion prediction through the use of high-fidelity physics-based simulation.

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## Publications

### Peer Reviewed Journal Articles

- [J1] **Seokho Jeong**, Domniki Asimaki, Jacob Dafni, and Joseph Wartman. “How topography-dependent are topographic effects? Complementary numerical modeling of centrifuge experiments”. *Soil Dynamics and Earthquake Engineering* (2018). DOI: 10.1016/j.soildyn.2018.10.028.
- [J2] Christopher R. McGann, Brendon A. Bradley, and **Seokho Jeong**. “Empirical Correlation for Estimating Shear-Wave Velocity from Cone Penetration Test Data for Banks Peninsula Loess Soils in Canterbury, New Zealand”. *Journal of Geotechnical and Geoenvironmental Engineering* 144.9 (2018). DOI: 10.1061/(ASCE)GT.1943-5606.0001926.
- [J3] Brendon A. Bradley, Liam M. Wotherspoon, Anna E. Kaiser, Brady R. Cox, and **Seokho Jeong**. “Influence of Site Effects on Observed Ground Motions in the Wellington Region from the Mw 7.8 Kaikōura, New Zealand, Earthquake”. *Bulletin of the Seismological Society of America* 108.3B (2018), pp. 1722–1735. DOI: 10.1785/0120170286.
- [J4] **Seokho Jeong** and Brendon A. Bradley. “Amplification of strong ground motions at Heathcote Valley during the 2010-2011 Canterbury Earthquakes: The role of 2D nonlinear site response”. *Bulletin of Seismological Society of America* 107 (2017). DOI: 10.1785/0120160389.
- [J5] **Seokho Jeong** and Brendon A. Bradley. “Amplification of strong ground motions at Heathcote Valley during the 2010-2011 Canterbury earthquakes: Observation and 1D site response analysis”. *Soil Dynamics and Earthquake Engineering* 100 (2017), pp. 345–356. DOI: 10.1016/j.soildyn.2017.06.004.
- [J6] Dominic Assimaki and **Seokho Jeong**. “Ground-motion observations at Hotel Montana during the M7.0 2010 Haiti earthquake: Topography or soil amplification?” *Bulletin of Seismological Society of America* 103 (2013), pp. 2577–2590.

### Journal Articles under Review or in Preparation

- [U1] **Seokho Jeong**, Christopher de la Torre, Kevin Foster, Brendon Bradley, and Liam Wotherspoon. “The role of site effect in the large accelerations recorded in the Hurunui district during the 2016 M7.8 Kaikoura earthquake”. (In preparation).
- [U2] Kami Mohammadi, **Seokho Jeong**, Domniki Asimaki, and Brendon A. Bradley. “Simulation and Validation of Topographic Effects on Mt Pleasant, Christchurch, New Zealand”. (In preparation).

- [U3] **Seokho Jeong**, Brendon A. Bradley, and Liam Wotherspoon. “The role of surface topography and the shallow sedimentary basin in the intensity of ground motions observed in Mt Pleasant, Christchurch, New Zealand”. (In preparation).

#### Conference Papers

- [C1] **Seokho Jeong**, Brendon A. Bradley, and Liam M. Wotherspoon. “Topographic Amplification of Ground Motions in Mt. Pleasant, Christchurch, New Zealand: An Experimental Study”. In: *Geotechnical Earthquake Engineering and Soil Dynamics V*. 2015. Reston, VA: American Society of Civil Engineers, 2018, pp. 638–647. DOI: 10.1061/9780784481462.062.
- [C2] Christopher de la Torre, Brendon A. Bradley, **Seokho Jeong**, and Christopher R. McGann. “Incorporating soil nonlinearity into physics-based ground motion simulation through site-specific ground response analysis”. In: *3rd International Conference on Performance-based Design in Earthquake Geotechnical Engineering*. Vancouver, Canada, 2017.
- [C3] Christopher R. McGann, Brendon A. Bradley, and **Seokho Jeong**. “Comparison of CPT-Vs relationships developed for Loess and Alluvial Christchurch New Zealand soils using sCPTu”. In: *3rd International Conference on Performance-based Design in Earthquake Geotechnical Engineering*. Vancouver, Canada, 2017.
- [C4] Domniki Asimaki and **Seokho Jeong**. “Two-Dimensional Site Effects for Dry Granular Soils”. In: *6th International Conference on Earthquake Geotechnical Engineering*. Christchurch, New Zealand, 2015.
- [C5] Brendon A. Bradley, **Seokho Jeong**, and Hoby N. T. Razafindrakoto. “Strong ground motions from the 2010-2011 Canterbury earthquakes and the predictive capability of empirical and physics-based simulation models”. In: *10th Pacific Conference on Earthquake Engineering*. Sydney, Australia, 2015.
- [C6] **Seokho Jeong** and Brendon A. Bradley. “Simulation of 2D site response at Heathcote Valley during the 2010-2011 Canterbury earthquake sequence”. In: *10th Pacific Conference on Earthquake Engineering*. Sydney, Australia, 2015.
- [C7] Brendon A. Bradley, **Seokho Jeong**, and Hoby N. T. Razafindrakoto. “Validation of empirical and physics-based ground motion and site response prediction models for the 2010-2011 Canterbury earthquakes”. In: *6th International Conference on Earthquake Geotechnical Engineering*. Christchurch, New Zealand, 2015.
- [C8] **Seokho Jeong** and Brendon A. Bradley. “2D site response simulation of Heathcote Valley during the 2010-2011 Canterbury earthquake sequence”. In: *6th International Conference on Earthquake Geotechnical Engineering*. Christchurch, New Zealand, 2015.
- [C9] **Seokho Jeong** and Brendon A. Bradley. “Simulation of systematic site amplification effects observed at Heathcote Valley during the 2010-2011 Canterbury earthquake sequence”. In: *New Zealand Society for Earthquake Engineering Conference*. Rotorua, New Zealand, 2015.

- [C10] Liam M. Wotherspoon, Brendon A. Bradley, Ethan M. Thomson, A. J. Hills, **Seokho Jeong**, C. M. Wood, and Brady R. Cox. “Development of deep Vs profiles and site periods for the Canterbury region”. In: *New Zealand Society for Earthquake Engineering Conference*. Rotorua, New Zealand, 2015.

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- [T1] **Seokho Jeong**. “Topographic amplification of seismic motion including nonlinear response”. Ph.D. Thesis. Georgia Institute of Technology, 2013.
- [T2] **Seokho Jeong**. “Response analysis of a seismic isolated railway bridge under service and earthquake loading”. Master Thesis. University of Patras, 2008.

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## Presentations

### Oral presentations

- [O1] **Seokho Jeong**, Brendon A. Bradley, and Liam M. Wotherspoon. “Topographic Amplification of Ground Motions in Mt. Pleasant, Christchurch, New Zealand: An Experimental Study”. In: *Geotechnical Earthquake Engineering and Soil Dynamics V*. 2018.
- [O2] **Seokho Jeong**. “Local scale numerical simulations of shallow site effects: A case study of Christchurch, New Zealand”. In: *Workshop on Developing a Research Roadmap to Integrate Nonlinear Shallow Crust Effects in SCEC5 Simulations*. 2017.
- [O3] **Seokho Jeong**. “Field testing for validation of topographic site response simulations”. In: *QuakeCoRE 2017 Annual Meeting Satellite Workshop on Response History Analysis Validation*. 2017.
- [O4] **Seokho Jeong** and Brendon A. Bradley. “Simulation of 2D site response at Heathcote Valley during the 2010-2011 Canterbury earthquake sequence”. In: *10th Pacific Conference on Earthquake Engineering*. Sydney, Australia, 2015.
- [O5] **Seokho Jeong** and Domnic Assimaki. “Observations and Simulations of Topography Effects during the M7.0 Haiti Earthquake”. In: *Seismological Society of America Annual Meeting*. Memphis TN, USA, 2011.