

CHENBO WANG

University College London (UCL), London, WC1E 6BT

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Hometown: Jiangxi, China

EDUCATION

University College London

Ph.D. in Civil, Environmental, and Geomatic Engineering

Advisors: Dr. Gemma Cremen and Prof. Carmine Galasso

UCL Overseas Research Scholarship

Sep 2022 - Present

London, UK

Stanford University

M.Sc. in Structural Engineering

Advisors: Prof. Jack Baker and Dr. Rodrigo Costa

Graduate Teaching Assistant for a graduate-level course CEE282 Advanced Structural Analysis

GPA: 4.1/4.3

Sep 2019 - April 2021

Palo Alto, USA

Harbin Institute of Technology

B.Eng. in Civil Engineering

GGPA: 93.31/100; Ranking: 1/171 (awarded China National Scholarship twice)

Sep 2015 - June 2019

Harbin, China

University of California Berkeley

Undergraduate Exchange Program

GPA: 4.0/4.0

Aug 2017 - Dec 2017

Berkeley, USA

RESEARCH INTERESTS

My PhD research is centred on developing statistical tools to inform policy decisions related to natural hazard risks. My research interests include disaster risk reduction, urban resilience, post-disaster housing recovery, and risk-informed urban planning. I am passionate about conducting interdisciplinary research at the intersection of hazard science, structural engineering, and social science to address global engineering and societal challenges.

RESEARCH EXPERIENCE

University College London

Graduate Research Assistant

January 2022 - Present

London, United Kingdom

- Designed and showcased a simulation-based framework for earthquake-related risk-sensitive pro-poor soft policy design leveraging Tomorrow's Cities Decision Support Environment (TCDSE) as part of a UKRI (United Kingdom Research and Innovation) project "Tomorrow's Cities"
- Developed an enriched framework to integrate social and physical considerations as well as local perspectives into the characterisation of post-earthquake household relocation decision-making and demonstrated the framework for Kathmandu, Nepal and a virtual urban testbed "Tomorrowville"
- Developed and implemented (in collaboration with The National Society for Earthquake Technology - Nepal) a comprehensive framework for disaster impact quantification using locally relevant metrics that extend beyond conventional measures like economic losses and physical damage. This framework was applied in Kathmandu, Nepal, engaging 90 diverse stakeholders through three rounds of workshops and questionnaires.
- Developed (in collaboration with PhD student Mr. Himanshu Agrawal from The University of Edinburgh) a pro-poor approach to earthquake risk management using high-resolution geophysics information
- Proposed (in collaboration with Dr. Tom Logan from The University of Canterbury, New Zealand) a novel framework for characterising human dependencies on the built environment to improve natural-hazard-related risk assessments and implemented the framework using Christchurch data

Hong Kong Polytechnic University

Research Assistant

September 2021 - December 2021

Hong Kong

- Developed statistical models to link household and individual socio-demographic characteristics to their post-earthquake housing recovery outcome using publicly available data from the 2015 Nepal earthquake

Stanford University
Graduate Research Assistant

January 2020 - April 2021
Palo Alto, United States

- Designed an agent-based simulation framework to estimate the workforce demand and the joint temporary housing needs of contractors and displaced households. This framework was applied in a case study on housing recovery of San Francisco following hypothetical earthquakes.
- Proposed a computational framework to integrate place attachment considerations into housing recovery simulations
- Estimated potable water needs of San Francisco after hypothetical earthquakes accounting for physical damage to electricity, water, and housing infrastructure and household disaster preparedness

TEACHING EXPERIENCE

University College London
Teaching Assistant, Department of Civil Environmental and Geomatic Engineering

January 2023 - March 2024, twice
London, United Kingdom

- The responsibilities associated with this appointment for graduate-level course CEGE0037: Reliability, Risk, and Resilience Engineering include grading assignments, holding office hours, advising students on their course projects, and evaluating student presentations

Stanford University
Teaching Assistant, Department of Civil and Environmental Engineering

January 2021 - April 2021
Palo Alto, United States

- The responsibilities associated with this appointment for graduate-level course CEE282: Nonlinear Structural Analysis include grading student assignments, holding weekly office hours, advising students on their final course projects, helping with debugging of project codes, and evaluating the written reports and codes of those projects

PUBLICATIONS

Journal Papers

- [J-1] **Wang, C.**, Cremen, G., Gentile, R., Galasso, C. (2023), "Design and Assessment of Pro-poor Financial Soft Policies for Expanding Cities." *Intl. Journal of Disaster Risk Reduction*, 85, 103500.
- [J-2] **Wang, C.**, Costa, R., Baker, J. W. (2022). "Simulating Post-disaster Temporary Housing Needs for Displaced Households and Out-of-town Workers." *Earthquake Spectra*, 2022;38(4):2922-2940.
- [J-3] Costa, R., **Wang, C.**, and Baker, J. W. (2022). "Integrating Place Attachment into Housing Recovery Simulations to Estimate Population Losses." *Natural Hazards Review*, 23(4), 04022021.
- [J-4] **Wang, C.**, Cremen, G., Galasso, C. (2024). "Should I Stay or Should I Go: Leveraging Data-driven Approaches to Explore the Effects of Various Disaster Policies on Post-earthquake Household Relocation Decision-making." *In review*.
- [J-5] **Wang, C.**, Nocera, F., Cremen, G., Galasso, C., Manandhar, V., Malla, P. (2024). "A Bespoke Approach to Facilitating Disaster Impact Quantification, Using Locally-relevant Metrics" *In review*.
- [J-6] Agrawal, H., **Wang, C.***, Cremen, G., McCloskey, J. (2024). "A Geophysics-informed Pro-poor Approach to Earthquake Risk Management" *In review* *shared first-authorship.
- [J-7] **Wang, C.**, Cremen, G., Logan, T. (2024). "Capturing Human Dependencies on the Built Environment to Enrich Natural-hazard-related Risk Assessments." *In preparation*.

Conference Papers and Presentations

- [C-1] **Wang, C.**, Logan, T., Cremen, G. (2024), "Capturing Dependencies of Humans on the Built Environment for Enriched Seismic Risk Assessments" *2024 World Conference on Earthquake Engineering (WCEE24)*, June 30-July 5, 2024, Milan, Italy. (Stage Presentation)
- [C-2] **Wang, C.**, Nocera, F., Cremen, G., Galasso, C., Manandhar, V., Malla, P. (2024), "A Bespoke Approach to Quantifying Disaster Impacts, Using Stakeholder-relevant Metrics" *2024 World Conference on Earthquake Engineering (WCEE24)*, June 30-July 5, 2024, Milan, Italy. (Monitor Presentation)
- [C-3] **Wang, C.**, Cremen, G., Galasso, C. (2023), "Leveraging Data-driven Approaches to Explore the Effects of Various Disaster Policies on Post-earthquake Household Relocation Decision-making." *Proceedings of 14th International Conference on Application of Statistics and Probability in Civil Engineering (ICASP14)*, July 9-13, 2023, Dublin, Ireland. (Oral Presentation)

- [C-4] **Wang, C.**, Cremen, G., Gentile, R., Galasso, C. (2023), "Development and Assessment of Pro-poor Financial Soft Policies for Earthquake-prone Urban Communities." Proceedings of 14th *International Conference on Application of Statistics and Probability in Civil Engineering (ICASP14)*, July 9-13, 2023, Dublin, Ireland. (Oral Presentation)
- [C-5] Costa, R., **Wang, C.**, Baker, J.W (2022), "Logistic Models Linking Household Recovery Capacity to Demographic Characteristics." Proceedings of 13th *International Conference on Structural Safety and Reliability (ICOSSAR 2021-2022)*, September 13-17, 2022, Tongji University, Shanghai, China. (Oral Presentation)
- [C-6] **Wang, C.**, Costa, R., and Baker, J. W. (2022), "Assessing Post-earthquake Housing Needs to Inform Recovery Planning." Proceedings of 12th *National Conference on Earthquake Engineering (12NCEE)*, June 27-July 1, 2022, Salt Lake City, Utah, USA. (Lightening Presentation)
- [C-7] Costa, R., **Wang, C.**, Baker, J. W. (2022), "Assessing Post-earthquake Housing Needs to Inform Recovery Planning." Proceedings of *ASCE Lifelines Conference 2021-2022*, February 7-11, 2022, Los Angeles, USA. (Oral Presentation)

SELECTED AWARDS, SCHOLARSHIP& GRANTS

Turing Scheme Grant, United Kingdom April 2024
 Awarded this UK government mobility grant to fund a three-month academic visit to The University of Canterbury in New Zealand as part of my PhD studies

CERRA (International Civil Engineering Risk and Reliability Association) Student Recognition Award, ICASP14 July 2023

Awarded this honour for academic excellence and high quality of the ICASP14 paper I first authored entitled "Leveraging Data-driven Approaches to Explore the Effects of Various Disaster Policies on Post-earthquake Household Relocation Decision-making"

UCL Fellowship Incubator Awards, University College London April 2023

Awarded £2,000 as seed funding to pilot a new independent project on developing locally-relevant disaster impact metrics for Kathmandu, Nepal

The EEFIT (Earthquake Engineering Field Investigation Team) Research Grant, Institution of Structural Engineers September 2022

Awarded £1,500 to work on an independent project that assessed the effectiveness of various policies in mitigating post-earthquake relocation decision-making of households in Kathmandu, Nepal

Overseas Research Scholarship, University College London September 2022

Awarded this highly competitive PhD scholarship to develop statistical tools to inform policy decisions related to natural hazard risks

China National Scholarship, China Ministry of Education twice in 2017 and 2018

Awarded (top 0.2% of national undergraduate students cohort) in recognition of academic excellence

Outstanding Graduate of CSCE, Chinese Society of Civil Engineering June 2019

Awarded (1/220 of School of Civil Engineering cohort) in recognition of academic excellence

Civil Centennial Future Scholar, University of Hong Kong July 2018

Awarded to a cohort of 15 undergraduate students from around the world in recognition of academic excellence

Merit Student of Heilongjiang Province, Department of Education of Heilongjiang Province May 2018

Awarded (top 1% of province cohort) in recognition of academic excellence

Excellent Volunteer Award, Harbin Institute of Technology May 2017

Awarded in recognition of extensive volunteer work

Exceptional Student Scholarship, Harbin Institute of Technology December 2016

Awarded (top 1% of university cohort) in recognition of academic excellence

PROFESSIONAL AFFILIATIONS AND SERVICE

American Geophysical Union (AGU) July 2024 - Present
 Student Membership

Earthquake Engineering Research Institute (EERI) May 2022 - June 2023
 Student Membership

Peer reviewed articles for International Journal of Disaster Risk Reduction