Xinyue **Wang**

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PROFESSIONAL APPOINTMENTS

University College London — *2026 - present*

Postdoctoral Research Fellow | Supervisor: Carmine Galasso — *London, UK*

EDUCATION

Lehigh University — *2019 - 2025*

Ph.D. in Structural Engineering | Advisor: Paolo Bocchini — *Bethlehem, USA*

Harbin Institute of Technology — *2016 - 2019*

M.S. in Civil Engineering | Ranking: 6/164 | Advisor: Changhai Zhai — *Harbin, China*

Shandong University — *2012 - 2016*

B.S. in Civil Engineering | Ranking: 1/137 — *Jinan, China*

HONORS & AWARDS

Travel Award to attend the NHERI Computational Academy, SimCenter at UC Berkeley — *2024*

Travel Award to attend the EMI Conference, ASCE Lehigh Valley Section — *2024*

Rossin Doctoral Fellowship, Lehigh University — *2023*

Travel Award to attend the NHERI Summer Institute, NHERI Network Coordination Office — *2023*

Brink Teaching Fellowship, Lehigh University — *2022*

Tier 1 Student Scholarship to attend the ETS Conference, Structural Engineering Institute — *2022*

Gibson Teaching Fellowship, Lehigh University — *2020*

First-Class Scholarship, Harbin Institute of Technology — *2017 & 2016*

National Scholarship (Top 0.2% nationwide), Ministry of Education of China — *2015 & 2014*

PUBLICATIONS

Journal Articles Published

J4 **Wang, X.**, and Bocchini, P. (2025). "Physics-based surrogate models of panels for portfolio analysis of transmission towers under hurricanes." *Structure and Infrastructure Engineering*, 21(11–12), 1828–1853. https://doi.org/10.1080/15732479.2025.2556829.

J3 **Wang, X.**, and Bocchini, P. (2023). "Predicting wildfire ignition induced by dynamic conductor swaying under strong winds." *Scientific Reports*, 13(1), Article 1. https://doi.org/10.1038/s41598-023-30802-w.

J2 **Wang, X.**, Wen, W., and Zhai, C. (2020). "Vulnerability assessment of a high-rise building subjected to mainshock–aftershock sequences." *The Structural Design of Tall and Special Buildings*, 29(15), e1786. https://doi.org/10.1002/tal.1786.

J1 Zhai, C., Bao, X., Zheng, Z., and **Wang, X.** (2018). "Impact of aftershocks on a post-mainshock damaged containment structure considering duration." *Soil Dynamics and Earthquake Engineering*, 115, 129–141. https://doi.org/10.1016/j.soildyn.2018.08.013.

Works Under Review

U1 **Wang, X.**, and Bocchini, P. (2026). "Parameterized class fragility model for transmission towers under hurricane wind." *Structural Safety*.

Manuscripts in Preparation

M2 **Wang, X.**, and Bocchini, P. (2026). "Using parameterized fragility models for hurricane risk analysis of power transmission networks."

M1 Otite, U., **Wang, X.**, Misra, S., and Bocchini, P. (2026). "Fragility of steel transmission monopoles under stochastic wind loading: static and dynamic first-passage perspectives."

Conference Proceedings and Presentations (* denotes presenter)

C9 Otite, U., **Wang, X.**, Misra, S., and Bocchini, P.* (2026). "Reliability of power transmission steel poles under static and dynamic wind loading." *9th International Conference on Computational Stochastic Mechanics (CSM9)*, Corfu, Greece. **[Oral presentation (forthcoming)]**

C8 Otite, U.*, **Wang, X.**, Misra, S., and Bocchini, P. (2026). "Reliability of power transmission steel poles under dynamic wind loads." *Engineering Mechanics Institute Conference (EMI 2026)*, Boulder, Colorado. **[Oral presentation (forthcoming)]**

C7 **Wang, X.***, and Bocchini, P. (2025). "Hurricane risk analysis for power transmission networks: from surrogate models for tower portfolios to parameterized fragility and spatiotemporal outages." *14th International Conference on Structural Safety and Reliability (ICOSSAR'25)*, Los Angeles, California. **[Oral presentation]**

C6 **Wang, X.**, Venkitasubramaniam, P., Xie, S., and Bocchini, P.* (2024). "Dynamic traffic simulation for transportation system resilience assessment." *12th International Conference on Bridge Maintenance, Safety and Management (IABMAS 2024)*, Copenhagen, Denmark. **[Conference paper]**

C5 **Wang, X.***, and Bocchini, P. (2024). "Class fragility models of transmission towers for regional analysis of transmission systems under hurricanes." *Engineering Mechanics Institute Conference and Probabilistic Mechanics & Reliability Conference (EMI/PMC 2024)*, Chicago, Illinois. **[Conference paper]** **[Finalist of EMI Objective Resilience Student Paper/Presentation Competition]**

C4 **Wang, X.**, Ma, L., and Bocchini, P.* (2023). "Panel-oriented surrogate model for developing class fragility curves for transmission towers." *14th International Conference on Applications of Statistics and Probability in Civil Engineering (ICASP14)*, Dublin, Ireland. **[Conference paper]**

C3 **Wang, X.***, and Bocchini, P. (2023). "Sensitivity analysis for the development of class fragility models of transmission towers under hurricanes." *Engineering Mechanics Institute Conference (EMI 2023)*, Atlanta, Georgia. **[Oral presentation]**

C2 **Wang, X.***, and Bocchini, P. (2023). "Predicting wildfire ignition induced by conductor-vegetation contact under strong winds." *Catastrophe Modeling and Data Workshop*, NYC, New York. **[Poster]**

C1 **Wang, X.***, and Bocchini, P. (2022). "Predicting wildfire ignition induced by conductor-vegetation contact under high winds." *Engineering Mechanics Institute Conference (EMI 2022)*, Baltimore, Maryland. **[Oral presentation]**

Web-Based Publications

W1 **Wang, X.** (2023). "Light a light or light a fire." *Lehigh University Graduate Student Research Series*. https://wordpress.lehigh.edu/gsrs/2023/05/10/light-a-light-or-light-a-fire/

Curated Softwares, Data, and Tools

O2 **Wang, X.**, and Bocchini, P. (2025). "Simulated hurricane wind fields for Florida using a blending approach [Data set]." *Zenodo*. https://doi.org/10.5281/zenodo.17504628

O1 **Wang, X.**, and Bocchini, P. (2025). "Parameterized class fragility models for transmission towers [Model]." *Zenodo*. https://doi.org/10.5281/zenodo.17504411

RESEARCH EXPERIENCE

People-centric computational framework for disaster and climate resilience *2026 - present*

Postdoctoral research, conducted at University College London *Research Fellow*

- Designing and assessing climate adaptation strategies using robust decision-making under deep uncertainty.
- Modeling multi-hazard impacts on infrastructure systems and developing people-centric risk and resilience metrics beyond asset loss.

Resilience analysis for power transmission systems under hurricanes *2024 - 2025*

Dissertation project, conducted at Lehigh University *Research Assistant*

- Conducted an expert opinion survey on post-storm recovery of electric power systems to support recovery modeling.
- Developed a hurricane risk analysis framework for power transmission systems that integrates advanced fragility models and simulation techniques; testbed: Florida.

Dynamic traffic simulation for transportation system resilience assessment *2023 - 2024*

Dissertation project, conducted at Lehigh University *Research Assistant*

- Implemented a resilience analysis framework for transportation systems, incorporating dynamic traffic simulation on post-disaster, disrupted transportation networks.

Fragility modeling for electric power infrastructure under hurricanes *2021 - 2025*

Dissertation project, conducted at Lehigh University *Research Assistant*

- Developed physics-based surrogate models of panels for efficient modeling and analysis of portfolios of transmission towers.
- Developed parameterized class fragility models of transmission towers to support regional-scale risk and resilience assessment.

Predicting wildfire ignition induced by powerline-vegetation contact *2019 - 2021*

Dissertation project, conducted at Lehigh University *Research Assistant*

- Developed a mechanistic and probabilistic approach for predicting wildfire ignition caused by conductor swinging under strong winds.

Seismic fragility of high-rise buildings under mainshock-aftershock sequences *2016 - 2019*

Master's research, conducted at Harbin Institute of Technology *Master Student*

- Developed an effective storey damage index for quantifying the accumulative seismic damage of high-rise buildings subjected to mainshock-aftershock sequences.

SERVICE & LEADERSHIP

Journal Reviewer

Journal of Structural Engineering
Structure and Infrastructure Engineering

Lehigh University Graduate Student Research Series (GSRS) *2023 - 2025*

Inaugural Editorial Board Member and Web Editor

- Solicited and edited blog posts written by graduate students and post-docs to promote research accessibility and impact. For more information, visit `https://wordpress.lehigh.edu/gsrs/`.

Lehigh University Fritz Engineering Research Society (FERS) *2022 - 2024*

Treasurer

- For more information, visit `https://fers-lehigh.blogspot.com/`.

Earthquake Engineering Research Institute (EERI) Lehigh Student Chapter *2021 - 2022*

President

- Organized a seminar series featuring guest lecturers, including Dr. Georgios Tsampras (UC San Diego) and Mr. Jay Wilson (Friedman Family Visiting Professionals).

TEACHING & MENTORING

Guest Lecturer

Introduction to Catastrophe Modeling (graduate/undergraduate) *Fall 2022*

Graduate Teaching Assistant

Introduction to Catastrophe Modeling (graduate/undergraduate) *Fall 2022*
Engineering Statics (undergraduate) *Fall '22, '21*
Strength of Materials (undergraduate) *Spring 2021*

Teaching Award/Certificate

Teacher Development Program (Lehigh University), Level 2 *Fall 2023*
Teacher Development Program (Lehigh University), Level 1 *Spring 2021*

Research Mentor

Research mentor for one Lehigh undergraduate on characterization and design of transmission poles *Fall 2023*

Research mentor for one REU student from Rutgers University on flooding risk analysis of tunnels *Summer 2023*

Research mentor for one Lehigh undergraduate on combined hazard and vulnerability analysis for power transmission lines [Poster] — *Summer 2023*

Research mentor for two Lehigh undergraduates on mapping and spatial analysis of power transmission infrastructure — *Fall 2022*

Research mentor for one REU student from Smith College on tunnel fragility analysis — *Summer 2022*

PROFESSIONAL MEMBERSHIPS

American Society of Civil Engineers (ASCE), Member

Engineering Mechanics Institute (EMI), Member

Fritz Engineering Research Society (FERS), Member

TECHNICAL SKILLS

Programming	Python, MATLAB, LaTeX, Tcl, C
Catastrophe Modeling	Hazus, SimCenter Apps, IN-CORE, Oasis Loss Modeling Framework
Finite Element Modeling	OpenSees, SAP2000
Transportation Modeling	Simulation of Urban MObility (SUMO), RDR Tool Suite
Geographic Information Systems	ArcGIS, QGIS, Google Earth Engine
Computing & Version Control	High-performance computing (HPC), Git/GitHub