Xueqi Cheng

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SUMMARY OF QUALIFICATION

In-depth knowledge and research experience with applications of **data mining**, **machine learning on graphs**, and **social network analysis**. Strong systematic problem-solving ability and communication skills.

EDUCATION

Vanderbilt University   Nashville, TN
Ph.D. in Computer Science   *May. 2023 – present*

Vanderbilt University   Nashville, TN
Ph.D. in Critical Infrastructure System Engineering (Transfer to C.S.)   *Aug. 2021 – May. 2023*

University of Michigan   Ann Arbor, MI
M.S.E. in Civil Engineering (Structures)   *Aug. 2018 – Dec. 2019*

Southwest Jiaotong University (SWJTU)   Chengdu, China
B.S. in Civil Engineering (Bridge Engineering)   *Sep. 2014 – Jul. 2018*

SELECTED RESEARCH EXPERIENCES

Modeling dynamic and uncertain interdependencies in smart cities   Aug. 2021 – Dec. 2022
Ph.D. Research Assistant at Vanderbilt University   *Nashville, TN*
- Developed machine learning and network models to evaluate the performance of coupled systems during disasters.
- Developed a methodology to generate a system of power and transportation networks and model its performance during the 2010 Nashville flood.
- Applied supervised machine learning, graph neural network (GNN), and mixed membership stochastic block model to predict the existence and importance of interdependencies between infrastructure networks.
- Evaluated the risk of infrastructure assets in coupled systems using Katz centrality and PageRank scores.

Assessing the record-to-record variability in wind-excited buildings   Jan. 2019 – Dec. 2019
Independent Research Assistant at University of Michigan   *Ann Arbor, MI*
- Quantified the impact of record-to-record variability on high-rise buildings based on OpenSees fiber models.
- Generated wind load for different load characteristics from a wind tunnel stochastic model.
- Performed incremental dynamic analysis, generated collapse fragility based on the understanding of the collapse.
- Calculated median and dispersion of collapse fragility and made an assessment of the record to record variability.

SELECTED PUBLICATIONS

- **Cheng, Xueqi**, Yan Zhang, Sining Lu, Yinqiao Zhu, and Wei He. "Urban Bridge Conceptual Design Based on Virtual Reality Graphic Engine." In *IABSE Symposium Report*, vol. 108, no. 1, pp. 74-75. International Association for Bridge and Structural Engineering, 2017.

SCHOLARSHIPS AND AWARDS

- IBM Ph.D. Fellowship   2021 -2023

- National Encouragement Scholarship   2015, 2026

- Merit Student of SWJTU   2015, 2026

- Best Debater in Freshman Debate Competition held by the School of Civil Engineering, SWJTU   2014

TEACHING

- **TA** for CE 2200: Statics at Vanderbilt University   Jan. 2023 – May. 2023

- **TA** for CE 3205: Structural Design at Vanderbilt University   Jan. 2022 – May. 2022

- **TA** for CE 3200: Structural Analysis at Vanderbilt University   Aug. 2021 – Dec. 2021

- **Grader** for CEE 511: Structural Dynamics at University of Michigan, Ann Arbor   Sep. 2019 – Dec. 2019