

# Lu Zhang

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## **EDUCATION**

**University of Illinois at Urbana-Champaign**, Champaign, IL Dec 2016  
Ph.D. in Civil Engineering (Specialization: Construction Management)  
*Dissertation: Axiology-based Modeling and Valuation for Human-Centered and Value-Sensitive Building Design*

**University of Michigan**, Ann Arbor, MI Dec 2010  
Master of Engineering in Construction Management  
Minor in Business and Finance

**Tongji University**, Shanghai, P. R. China Jun 2009  
Bachelor of Science in Construction Management  
*Dissertation: Lean Construction and its Application in Chinese Construction Industry*

## **ACADEMIC POSITIONS**

**Florida International University** Miami, FL  
Assistant Professor at Moss School of Construction, Infrastructure and Sustainability Aug 2016- Present

**University of Illinois at Urbana-Champaign** Champaign, IL  
Research/Teaching Assistant at Department of Civil and Environmental Engineering Aug 2011- Aug 2016

**University of Michigan** Ann Arbor, MI  
Research Assistant at Department of Civil and Environmental Engineering Aug 2010- May 2011

## **RESEARCH INTERESTS**

Human-Building Interaction, Smart, Sustainable, and Resilient Construction, Disaster Resilient Communities, Building Energy Modeling and Simulation, Building and Civil Information Modeling, Semantic Information Modeling, Data Analytics

## **PUBLICATIONS** (\* corresponding author)

- Pathak, A., **Zhang, L.** \*, and Ganapati, N.E. (2020). "Understanding Multi-Sector Stakeholder Value Dynamics in Hurricane Michael to Facilitate Collaborative Decision Making in Disaster Contexts." *Natural Hazards Review*, 21(3), 04020032.
- **Zhang, L.**\* and Sanake, S. (2020). "Social-welfare-theory-based human comfort aggregation model." *Journal of Architectural Engineering*, 26(3), 04020027.
- Dhakal, S., **Zhang, L.** \*, and Lv, X. (2020). "Ontology-Based Semantic Modeling to Support Knowledge Classification on Disaster Resilient Construction Practices." *International Journal of Construction Management*, Taylor and Francis, DOI: 10.1080/15623599.2020.1765097.
- Taeby, M. and **Zhang, L.**\* (2018). "Exploring stakeholder views on disaster resilience practices of residential communities in South Florida." *Natural Hazards Review*, 20(1), 04018028.
- **Zhang, L.** and El-Gohary, N.M. (2018). "Automated IFC-based building information modeling and extraction for supporting value analysis of buildings." *International Journal of Construction Management*, Taylor and Francis, DOI: 10.1080/15623599.2018.1484850.

- **Zhang, L.** and El-Gohary, N.M. (2017). “Human-centered value analysis: Building value aggregation based on human values and building system integration.” *Journal of Construction Engineering and Management*, 143(8), 04017040-1- 04017040-17.
- **Zhang, L.** and El-Gohary, N.M. (2016). “Discovering stakeholder values for axiology-based value analysis of building projects.” *Journal of Construction Engineering and Management*, 142(4), 4015095-1-4015095-15.
- **Zhang, L.** and El-Gohary, N.M. (2016). “Epistemology-based context-aware semantic model for sustainable construction practices.” *Journal of Construction Engineering and Management*, 142(3), 015084-1-015084-17.
- Dhakal, S. and **Zhang, L.** \* (2020). “Understanding the Interrelationships between Infrastructure Resilience and Social Equity using Social Media Data.” Proceedings of the 2020 Construction Research Congress, accepted.
- Pathak, A., **Zhang, L.**\*, and Ganapati, N.E. (2020). “Understanding Multi-Sector Stakeholder Value Dynamics in Hurricane Michael to Facilitate Collaborative Decision Making in Disaster Contexts.” Proceedings of the 2020 Construction Research Congress, accepted.
- Zhu, J., **Zhang, L.**, and Ren, Z. (2020). “How Transportation Infrastructure Makes Human Resilience Possible: Towards A Conceptual Framework.” Proceedings of the 2020 Construction Research Congress, accepted.
- **Zhang, L.**\*, Lv, X., and Dhakal, S. (2019). “A Reinforcement Learning-based Stakeholder Value Aggregation Model for Collaborative Decision Making on Disaster Resilience.” *Proceedings of the 2019 ASCE International Conference on Computing in Civil Engineering*, 490-497.
- **Zhang, L.**\*, Sanake, S. (2019). “Thermal comfort aggregation modeling based on social science theory: towards a comfort-driven cyber human system framework.” *Proceedings of the 2019 ASCE International Conference on Computing in Civil Engineering*, 547-554.
- Lv, X., Morshed, S.A., and **Zhang, L.** (2019). “Automatic Key-phrase Extraction to Support the Understanding of Infrastructure Disaster Resilience.” Proceedings of 36th International Symposium on Automation and Robotics in Construction (ISARC 2019), 1276-1281.
- Taeby, M. and **Zhang, L.**\* (2018). “Stakeholder Value Systems on Disaster Resilience of Residential Buildings”. *Proceedings of 2018 International Conference on Construction and Real Estate Management (ICCREM)*, ASCE, Reston, VA, 10-17 (**ICCREM Best Paper Award**).
- Dhakal, S. and **Zhang, L.**\* (2018). “Ontology-based Semantic Modeling of Disaster Resilient Construction Operation: Towards a Knowledge-based Decision Support System.” *Advances in Informatics and Computing in Civil and Construction Engineering*, Springer International Publishing, German, 95.
- **Zhang, L.**\*, Pradhananga, N., and D’Souza, N. (2018). “Capturing Human Sensation Using Physiological Sensing Devices to Support Human-Centered Indoor Environment Design.” *Proceedings of the 2018 Construction Research Congress (CRC)*, ASCE, Reston, VA, 178-188.
- **Zhang, L.** and El-Gohary, N.M. (2017). “BIM-integrated system for automated value analysis of buildings.” *Proceedings of the 2017 ASCE International Workshop on Computing in Civil Engineering (IWCCE)*, Seattle, June 25-27, 2017.
- **Zhang, L.** and El-Gohary, N. M. (2016). “Extracting information from Building Information Models to support automated value analysis.” *Proceedings of 2016 International Conference on Computing in Civil and Building Engineering (ICCCBE)*, Osaka University, Osaka, Japan.
- **Zhang, L.** and El-Gohary, N.M. (2016). “Object Value Aggregation for Modeling Building System Integration and Value.” *Proceedings of the 2016 Construction Research Congress (CRC)*, ASCE, Reston, VA, 2463-2473.

- **Zhang, L.** and El-Gohary, N.M. (2015). “Axiology-based value quantification modeling for buildings.” *Proceedings of the Canadian Society for Civil Engineering International Construction Specialty Conference (ICSC’15)*, University of British Columbia, Vancouver, BC, Canada.
- **Zhang, L.** and El-Gohary, N.M. (2014). “Quantifying the environmental, social, and economic value of educational building projects using BIM data.” *Proceedings of the Joint 2014 International Conference on Computing in Civil and Building Engineering (ICCCBE) and 2014 International Council for Research and Innovation in Building and Construction (CIB) W078 Conference*, ASCE, Reston, VA, 203-210.
- **Zhang, L.** and El-Gohary, N.M. (2014). “Discovering stakeholder values for axiology-based sustainability-oriented value analysis of educational building projects.” *Proceedings of the 2014 Construction Research Congress (CRC)*, ASCE, Reston, VA, 623-632.
- **Zhang, L.** and El-Gohary, N.M. (2013). “Epistemic modeling for sustainability knowledge management in construction.” *Proceedings of ASCE International Workshop on Computing in Civil Engineering*, ASCE, Reston, VA, 202-209.

## **RESEARCH GRANTS**

- **PI**, A Value-Driven Multi-Sector Stakeholder Decision-Making Framework to Support Disaster Resilient Communities, *National Science Foundation*, 2020-2022
- **PI**, Assessment of Structural Steel Coating Applications, *Florida Department of Transportation*, 2020-2021
- **PI**, Understanding Critical Impacting Factors and Trends on Bridge Design, Construction, and Maintenance for Future Planning, *U.S. Department of Transportation, Accelerated Bridge Construction – University Transpiration Center (ABC-UTC)*, 2019-2020
- **PI**, Advancing Engineering Undergraduates’ Professional Presentation Skills through Multi-Context Communication-Training Activities, *Engineering Information Foundation*, 2019-2020.
- **Co-PI**, Identifying and Tracking Emerging Transportation Trends and Indicators, *Florida Department of Transportation*, 2019-2021.
- **PI**, Understanding Multi-Sector Stakeholder Value Dynamics in Hurricane Michael to Facilitate Collaborative Decision Making in Disaster Contexts, *Natural Hazards Center (subaward from National Science Foundation)*, 2018-2019.
- **PI**, Integrating Multidimensional Human Factors and Indoor Environment Evaluation for Supporting Human-Centered Decision Making in Indoor Environment Design, Pilot Program to Promote Cross-College Collaboration (FIU), *FIU Office of Research and Economic Development*, 2017-2018.
- **Sole PI**, Advance Florida Network Women in STEM Scholars Traveling Grant, *FIU Office to Advance Women, Equity, and Diversity*, 2017
- **Main Student Investigator**, CAREER: Axiological Modeling and Simulation for Value-Sensitive Infrastructure Project Planning and Design, *National Science Foundation*, 2013-2018, PI: Nora El-Gohary

## **TEACHING EXPERIENCE**

### **Florida International University**

*Instructor of BCN 3727 – Construction Sitework and Equipment*

Miami, FL

Fall 2019

*Instructor of BCN 4703 – Management of Construction Projects*

Fall 2016-Spring 2019

*Instructor of BCN 5784 – Construction Information Systems*

Fall 2017

*Instructor of BCN 5784 – Construction Scheduling I*

Spring 2019

### **University of Illinois at Urbana-Champaign**

Champaign, IL

*Teaching Assistant of CEE 528-Construction Data Modeling*

Spring 2014, Spring 2013

Teaching Assistant of CEE 422-Construction Cost Analysis  
University of Michigan  
Grader of CEE 536-Critical Path Methods

Spring 2016, Spring 2015, Fall 2013, Fall 2012  
Ann Arbor, MI  
Fall 2010

### **ADVISING AND MENTORING EXPERIENCE**

- Sunil Dhakal, Ph.D. student, Department of Civil and Environmental Engineering, Florida International University  
Spring 2018 - Present
- Aishwarya Pathak, master student, Moss School of Construction, Infrastructure and Sustainability, Florida International University  
Spring 2019- Present
- Lucienne Compress, master student, Moss School of Construction, Infrastructure and Sustainability, Florida International University  
Spring 2019- Summer 2019
- Shankar Sanake, master student, Moss School of Construction, Infrastructure and Sustainability, Florida International University  
Spring 2018- Spring 2019
- Michele Nigro, master student, Moss School of Construction, Infrastructure and Sustainability, Florida International University  
Fall 2018- Summer 2019
- Mahdy Taeb, Ph.D. student, Department of Civil and Environmental Engineering, Florida International University  
Fall 2016 - Fall 2017
- Aditya Revanth Putcha, master student, Department of Engineering Management, Florida International University  
Spring 2017- Summer 2017
- Mentor of undergraduate students in Research for Undergraduates (REU) Program, University of Illinois at Urbana-Champaign  
Spring 2016, Spring 2014
- Mentor of new PhD students in PhD Professional Development Program, University of Illinois at Urbana-Champaign  
2014- 2016

### **PROFESSIONAL PRESENTATIONS**

- Invited presentation “Understanding multi-sector stakeholder value systems in disasters to facilitate collaborative decision making towards resilient communities.” Presented at *44th Annual Natural Hazards Research and Applications Workshop*, Broomfield, CO, Jul 2019.
- Conference paper presentation “Thermal comfort aggregation modeling based on social science theory: towards a comfort-driven cyber human system framework.” Presented at *2019 ASCE International Conference on Computing in Civil Engineering*, Atlanta, GA, Jun 2019.
- Invited seminar presentation “Human-sensitive building planning and design.” Department of Civil, Environmental, and Construction Engineering, Tongji University, Shanghai, China, May 2019.
- Invited seminar presentation “Human-sensitive building planning and design.” Department of Civil, Environmental, and Construction Engineering, Chang’an University, Xi’an, China, May 2019.
- Invited seminar presentation “Human-sensitive building planning and design.” Dalian University of Technology, Dalian, China, May 2019.
- Conference paper presentation “Ontology-based Semantic Modeling of Disaster Resilient Construction Operation: Towards a Knowledge-based Decision Support System” Presented at *2018 CIB-W78*, Chicago, IL, Oct 2018
- Conference paper presentation “Exploring stakeholder views on disaster resilience practices of residential communities in South Florida.” Presented at *2018 International Conference on Construction and Real Estate Management*, Charleston, SC, Aug 2018

- Conference paper presentation “BIM-integrated system for automated value analysis of buildings.” Presented at *2017 ASCE International Workshop on Computing in Civil Engineering*, Seattle, WA, Jun 2017
- Seminar presentation “Axiology-based modeling and valuation for value-sensitive building planning and design.” Department of Civil, Environmental, and Construction Engineering, University of Michigan, May 2017
- Seminar presentation “Axiology-based modeling and valuation for value-sensitive building planning and design.” Department of Civil, Environmental, and Construction Engineering, University of Central Florida, Feb 2017
- Conference presentation “Object value aggregation for modeling building system integration and value.” Presented at *2016 Construction Research Congress*, San Juan, Puerto Rico, May 2014
- Invited presentation “Axiology-based modeling and valuation for value-sensitive building planning and design.” School of Construction, Florida International University, Mar 2016
- Invited lecture “Prefabrication in the Construction Industry” College of Architecture, Art, and Design at Mississippi State University, Mar 2016
- Poster presentation “Axiology-based modeling and valuation for value-sensitive building design.” Presented at *2015 Women Exploring Graduate Opportunities in Civil and Environmental Engineering Graduate Research Symposium*, University of Illinois at Urbana-Champaign, Sep 2015
- Conference paper presentation “Axiology-based value quantification modeling for buildings.” Presented at *2015 Canadian Society for Civil Engineering International Construction Specialty Conference*, Vancouver, BC, Canada, Jun 2015
- Poster presentation “Axiology-based modeling and valuation for value-sensitive building design.” Presented at *2015 Canadian Society for Civil Engineering International Construction Specialty Conference*, Vancouver, BC, Canada, Jun 2015
- Conference paper presentation “Discovering stakeholder values for axiology-based sustainability-oriented value analysis of educational building projects.” Presented at *2014 Construction Research Congress*, Atlanta, GA, May 2014
- Conference paper presentation “Epistemic modeling for sustainability knowledge management in construction.” Presented at *2013 ASCE International Workshop on Computing in Civil Engineering*, Los Angeles, CA, Jun 2013

### **ACADAMIC HONORS AND AWARDS**

2018 International Conference on Construction and Real Estate Management Best Paper Award	2018
PhD Professional Development Award, CEE Department, UIUC	2015
Honor Society of Phi Kappa Phi Awarded Member	2014
Chester P. Siess Award for Outstanding Academic Performance, CEE Department, UIUC	2013
Conference Travel Awards for Graduate Students, Graduate College, UIUC	Fall 2013
University Fellowship, UIUC	2011-2012
Best Dissertation Award, Tongji U	2009
Scholarship for Academic Excellent Student, Tongji U	2008-2009
Scholarship for Academic Excellent Student, Tongji U	2007-2008
Scholarship for Academic Excellent Student, Tongji U	2006-2007

### **PROFESSIONAL CERTIFICATES**

LEED Green Associate Certificate, U. S. Green Building Council	2014
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Certificate in Business Administration, College of Business, UIUC 2015  
Certificate in PhD Professional Development Program, CEE Department, UIUC 2015

### **PROFESSIONAL MEMBERSHIPS**

Member of the Honor Society of Phi Kappa Phi 2013-Present  
Member of National Association of Women in Construction 2015-Present  
Member of American Society of Civil Engineers 2013-Present  
Member of ASCE Data Sensing and Analysis Committee 2015-Present  
Member of ASCE Visualization, Information Modeling, and Simulation Committee 2017-Present  
Member of Construction Research Congress Committee 2015-Present

### **EXTERNAL SERVICES**

Reviewer of Journal of Construction Engineering and Management 2016- Present  
Reviewer of Journal of Computing in Civil Engineering 2017-Present  
Reviewer of Natural Hazards Review 2018-Present  
Reviewer of Energy and Buildings 2017-Present  
Reviewer of Automation in Construction 2017-Present  
Reviewer of Journal of Sustainability 2017- Present  
Reviewer of Journal of Energies 2017-Present  
Panel Reviewer of Smart and Connected Communities of National Science Foundation 2018  
Member of Technical Committee of Construction Research Congress 2018 2018  
Member of Technical Committee of ASCE International Workshop on Computing in Civil Engineering 2017  
Proposal Reviewer of Decision, Risk and Management Sciences Program of National Science Foundation 2017