

Lei Zhang

📍 Boston, MA 02115 | ✉ upuplei@gmail.com | 📞 +1 (857) 302-8616 | [in](#) | [G](#) | [🌐 Personal Website](#)

EDUCATION

- M.S. in Computer Science** - Georgia Institute of Technology Aug 2022 - May 2024
- Ph.D. in Civil Engineering** - Northeastern University Sep 2019 - May 2024
- CS Courses: *Algorithms; Data Structures, Algorithms & Applications in Computer Systems; Database Management System; Concepts of Object-Oriented Design; Introduction to Machine Learning and Pattern Recognition*
- M.E. in Architectural and Civil Engineering** - Tongji University Sep 2016 - Jun 2019
- B.E. in Civil Engineering** - Tongji University Sep 2012 - Jul 2016

PROJECTS

- YelpCamp for Camping Site Sharing** - Node.js, Express, MongoDB Jun 2022 - Aug 2022
- Built a website hosted on Heroku that allows users to share and post reviews on camping sites.
 - Developed RESTful web services using Express to allow session-based client rendering, authentication and authorization.
 - Integrated map views and interaction into application using third-party APIs.
- Online Learning Management System** - React, Redux, Java, MySQL Apr 2022 - Jul 2022
- Prototyped a stateful web application for online learning management using React, Redux and Java.
 - Designed a client that allows custom page content display by toggling between grid view and list view. The Client communicated with a local server where a MySQL database is maintained to process requests from the client via the Java middle tier.
 - Applied RESTful web services to deliver foolproof user experience in editing course components.
- E-store Web Application** - Java Spring Boot, CSS Bootstrap, MySQL Dec 2021 - Jan 2022
- Developed an online shopping application using Java, HTML and CSS Bootstrap.
 - Created a client that allows user register/login, profile access and management, and integrated session-based shopping cart and order management. A local server was built to respond to CRUD operations sent by the client using Java.
- Local Data Warehouse** - R, SQLite Jun 2021 - Aug 2021
- Prototyped a normalized relational OLTP database of bird-strike accidents on domestic flights over the last 20 years.
 - Transformed the normalized schema to a star schema with necessary dimension and transaction fact tables that enabled accelerated database queries and improved reliability of analysis results.

WORK EXPERIENCE

- Graduate Research Assistant** - Northeastern University Sep 2019 - May 2024
- Developed a performance-based wind engineering framework based on Monte Carlo simulation for the risk and life-cycle cost assessment of vertical structures subjected to mixed-climate wind loads.
 - Applied stochastic methods and deep learning techniques (e.g. artificial neural network) for fast and computationally efficient fragility analysis of vertical structures induced by wind.
- Teaching Assistant** - Northeastern University Sep 2021 - Dec 2021
- Lectured and graded for Steel Structure Design and hosted office hours to guide students to find out solutions.
 - Communicated semester project expectations with students and kept records of each student's progress till completion.

PUBLICATIONS

- Zhang, L.; Caracoglia, L. (2021). "Wind-induced fragility of a monopole tower via Artificial Neural Network based surrogate analysis." *Engineering Structures*. (Under review)
- Zhang, L.; Caracoglia, L. (2021). "Layered Stochastic Approximation Monte-Carlo method for tall building and tower fragility in mixed wind load climates." *Engineering Structures*, 239: 112159.
- Yang, Y.; Zhang, L.; Ding, Q.; Ge, Y. (2018). "Flutter performance and improvement for a suspension bridge with central-slotted box girder during erection." *Journal of Wind Engineering and Industrial Aerodynamics*, 179: 118-124.

SKILLS & TOOLS

Languages: Java, JavaScript, Python, C/C++, R
Framework: NodeJS, ReactJS, Bootstrap
Developer Tools: Linux, Git/GitHub, Vim, MySQL, MangoDB, IntelliJ, PyCharm

AWARDS & HONORS

- College of Engineering Dean's Fellowship - Northeastern University May 2019
- Excellent Graduate - Tongji University Apr 2019