Viet Le

Ph.D. Candidate, Northeastern University

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Education

Northeastern University (NU) — Boston, MA

Ph.D. Candidate (Structural Engineering) - GPA: 3.72 — *Sept. 2016 – Present (Expected graduation May 2020)*

University of Massachusetts Lowell (UML) — Lowell, MA

M.S. in Civil and Environmental Engineering (Structural Engineering) - GPA: 4.00 — *Sept. 2015 – May 2016*

B.S. in Civil and Environmental Engineering - Summa Cum Laude, GPA: 3.98 — *Sept. 2011 – May 2015*

Professional and Research Experience

Northeastern University — Boston, MA

Structural Engineering Graduate Research Assistant — *Sept. 2016 - Present*

- Developing a performance-based engineering framework for the risk and life-cycle cost assessment of vertical structures subjected to non-stationary wind loads from thunderstorm downbursts and tornadoes
- Conducting wind tunnel experiments to physically simulate non-stationary wind outflows and their effects on a tall building model using a high frequency force balance
- Applying data science techniques to approximate structural responses and fragilities

Structural Engineering Graduate Teaching Assistant — *Sept. 2017 - May 2020*

- Provided assistance for Steel Design and for Materials and Measurements courses. Graded homework and lab reports, led lectures and labs, and held office hours for students

GCP Applied Technologies — Cambridge, MA

Research Intern — *Jun. 2016 - Aug. 2016*

- Performed image analysis and data clustering techniques for the improvement of quality control for concrete mixes

University of Massachusetts Lowell — Lowell, MA

Structural Engineering Research Assistant — *May 2013 - May 2016*

- Involved in the multiphysical nondestructive evaluation of cementitious composites using microwave imaging radar, ultrasonic testing, dielectric measurements with a contact probe, and an unmanned aerial vehicle

Software Skills

- **Proficient/Working Knowledge**: MATLAB, Microsoft Office, Python, LaTeX
- **Basic Knowledge**: ANSYS Fluent, OpenFOAM, AutoCAD, C++, LabView

Awards and Honors

- **NU** - College of Engineering Ph.D. Bridge Funding Fellowship — *Mar. 2019*
- **NU** - College of Engineering Dean's Fellowship — *May 2016*
- **American Concrete Institute** - Kumar Mehta Scholarship — *May 2016*
- **UML** - Deans Gold Medal - Highest Achievement (Graduate College of Engineering) — *May 2016*
- **U.S. Department of Energy** - Integrated University Program Fellowship — *May 2015*

Community Outreach

Northeastern University Graduate Structural Engineering Association — Boston, MA

Chair, 2020 SEI Graduate Student Chapter of the Year — *Sept. 2018 - Sept. 2019*

- Organized student and professional seminars for graduate structural engineering students
- Arranged "Documentary Nights" centered on the role and ethical responsibilities of civil engineers in society

1st Northeastern University - Tongji University Workshop on Wind Engineering — Boston, MA

Co-Chair, PhD Network Dissertation Research Grant — *May 2019*

- Co-led a student organized workshop to discuss the latest developments in wind engineering research made by academics from Northeastern University and Tongji University

Publications and Presentations

Peer-Reviewed Journal Publications

First Author

- Le, V.; Caracoglia, L. (2020). "Experimental investigation of non-stationary wind loading effects generated with a multi-blade flow device" *Journal of Fluids and Structures*. (Submitted for review).
- Le, V.; Caracoglia, L. (2020). "A neural network surrogate model for the performance assessment of a vertical structure subjected to non-stationary, tornadic wind loads." *Computers & Structures*. 231: 106208.
- Le, V.; Caracoglia, L. (2020). "Life-cycle cost analysis of a point-like structure subjected to tornadic wind loads." *ASCE Journal of Structural Engineering*. 146 (2): 04019194.
- Le, V.; Caracoglia, L. (2019). "Generation and characterization of a non-stationary flow field in a small-scale wind tunnel using a multi-blade flow device." *Journal of Wind Engineering and Industrial Aerodynamics*. 186: 1-16.
- Le, V.; Caracoglia, L. (2018). "Computationally efficient stochastic approach for the fragility analysis of vertical structures subjected to thunderstorm downburst winds." *Engineering Structures*. 165: 152-169.

Co-Author

- Yu, T.; Twumasi, J.O.; Le, V.; Tang, Q.; D'Amico, N. (2017). "Surface and subsurface remote sensing of concrete structures using synthetic aperture radar imaging." *ASCE Journal of Structural Engineering*. 143 (10): 04017143.

Conference Papers and Presentations

First Author

- Le, V.; Caracoglia, L. (2020). "Investigating failure probability of a point-like, monopole structure subjected to tornado winds." Submitted to: *9th International Colloquium on Bluff Body Aerodynamics and Applications (BBAAIX)*, July 20-23, 2020, University of Birmingham, Birmingham, United Kingdom.
- Le, V.; Caracoglia, L. (2019). "Performance-based design of vertical structures impacted by thunderstorm downburst and tornado wind loads by wavelet-Galerkin approach." Presented at: *1st Northeastern University - Tongji University Workshop on Wind Engineering (NU-TJU WWE1)*, May 23, 2019, Northeastern University, Boston, MA, USA.
- Le, V.; Caracoglia, L. (2018). "Performance-based assessment of tall buildings subjected to thunderstorm downburst loads using the Wavelet-Galerkin approach." Presented at: *Engineering Mechanics Institute (EMI) Conference 2018*, Massachusetts Institute of Technology, Cambridge, MA, USA.
- Le, V.; Caracoglia, L. (2017). "A preliminary examination of structural fragility for a vertical cantilever structure subjected to thunderstorm downburst loading." Full paper presented and found in: *Proceedings of the 13th Americas Conference on Wind Engineering (ACWE13)*, University of Florida, Gainesville, Florida, USA.
- Le, V.; Yu, T.; Twumasi, J.O; Tang, Q. (2016). "Sizing and ranging criteria for SAR images of steel and wood specimens." Full paper presented and found in: *2016 SPIE Proceedings Vol. 9804: Nondestructive Characterization and Monitoring of Advanced Materials, Aerospace, and Civil Infrastructure*, Las Vegas, Nevada, USA.
- Le, V.; Yu, T. (2015). "Mass and stiffness estimation using mobile devices for structural health monitoring." Full paper presented and found in: *2015 SPIE Proceedings Vol. 9437: Nondestructive Characterization and Monitoring of Advanced Materials, Aerospace, and Civil Infrastructure*, San Diego, California, USA.

Thesis/Dissertation

- Le, V. "Detecting and quantification of damage from ASR gels using multiphysical nondestructive evaluation." M.S. Thesis, University of Massachusetts Lowell, 2016 (155 pages).
- Le, V. "Performance-based engineering framework for vertical structures subjected to non-stationary wind loads." Ph.D. Dissertation, Northeastern University, 2020 (*In progress*).