Viet Le

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Education

Northeastern University (NEU) — Boston, MA
Ph.D. Candidate - GPA: 3.72 — *Sept. 2016 – Present*

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 - GPA: 3.98 — *Sept. 2011 – May 2015*

Professional and Research Experience

Northeastern University — Boston, MA
Structural Engineering Graduate Research Assistant — *Sept. 2016 - Present*

- Developed a performance-based engineering framework for the analysis of vertical structures subjected to non-stationary wind loads generated from thunderstorm downbursts and tornadoes
- Conducted 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 artificial neural networks to the surrogate modeling of structural fragilities

Structural Engineering Graduate Teaching Assistant — *4 semesters from Sept. 2017 - May 2019*

- 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 and the mitigation of the environmental impact of concrete production

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

Geoenvironmental Engineering Undergraduate Research Assistant — *May 2012 - Sept. 2012*

- Worked in a multi-disciplinary research group for novel technology in geoenvironmental site characterization

Software Skills

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

Awards and Honors

Graduate

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

Undergraduate

- **UML** - Chancellors Medal for Distinguished Academic Achievement in Engineering — *May 2015*
- **American Society for Nondestructive Testing** - Engineering Undergraduate Award — *May 2014*
- **UML** - William Haskell Award for Outstanding Junior — *May 2014*
- **UML** - Herman J. Shea Award for Outstanding Sophomore — *May 2013*

Community Outreach

Northeastern University Graduate Structural Engineering Association (NGSEA) Boston, MA

Chair *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
- Attended the 2018 SEI Local Leaders Conference (LLC) hosted by ASCE

1st Northeastern University - Tongji University Workshop on Wind Engineering (NU-TJU WWE1) Boston, MA

Student Co-Chairman *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

Tau Beta Pi Engineering Honors Society (UML - MA Theta) Lowell, MA

President *Mar. 2014 - Mar. 2015*

- Organized "Academic Advising Sessions" for upperclassmen to provide advice to the underclassmen peers on course planning
- Organized professional seminars for undergraduate engineering students

UMass Lowell Vietnamese Student Association (UML VSA) Lowell, MA

President/Vice President *May 2013 - May 2015*

- Organized gatherings with undergraduate students to celebrate Vietnamese culture

Red Lotus Lion Dance Troupe Lowell, MA

Co-captain/Member *Nov. 2013 - May 2017*

- Performed traditional "lion dance" for holidays throughout the lunar calendar and special celebratory events

American Society of Civil Engineers (UML Student Chapter) Lowell, MA

Social Chair *Sept. 2012 - Jan. 2013*

- Assisted with advertisement of the chapter's activities

Chi Epsilon - The Civil Engineering Honor Society (UML Chapter) Lowell, MA

Student Member *Jan. 2013 - May 2015*

Languages

Native/Proficient:: English **Intermediate**: Vietnamese **Elementary**: Spanish

Publications and Presentations

Peer-Reviewed Journal Publications

First Author

- Le, V.; Caracoglia, L. (2019). "Life-cycle cost analysis of a point-like structure subjected to tornadic wind loads." *ASCE Journal of Structural Engineering. In Press.*
- 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. (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.

Co-Author

- Twumasi, J.O.; Le, V.; Tang, Q.; Yu, T. (2016). "Quantitative sensing of corroded steel rebar embedded in cement mortar specimens using ultrasonic testing." 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.
- Qin, Y.; Twumasi, J.O.; Le, V.; Ren, Y.-J.; Lai, C.P.; Yu, T. (2016). "Roadside IED detection using subsurface imaging radar and rotary UAV." Full paper presented and found in: *2016 SPIE Proceedings Vol. 9823: Detection and Sensing of Mines, Explosive Objects, and Obscured Targets XXI*, Baltimore, Maryland, USA.

Poster Presentations

- Le, V.; Caracoglia, L. (2019). "Performance-based framework for the evaluation of non-stationary wind loads on vertical structures." Poster presented at: *Northeastern University 9th Annual Civil & Environmental Engineering Industry Leadership Night*, October 29, 2019, Northeastern University, Boston, MA, USA.
- Le, V.; Caracoglia, L. (2019). "Analytical methodology for the performance-based assessment of vertical structures impacted by thunderstorm downburst and tornado wind loads." Poster presented at: *2019 Research, Innovation and Scholarship Expo (RISE: 2019)*, April 4, 2019, Northeastern University, Boston, MA, USA.

- Le, V.; Caracoglia, L. (2019). "Machine learning algorithms for performance-based tornado engineering in the MATLAB® computing environment." Poster presented at: *2019 MathWorks SMART Laboratory Northeastern University Collaboration Day Event*, February 26, 2019, Northeastern University, Boston, MA, USA.
- Le, V.; Caracoglia, L. (2019). "Performance-based structural design against thunderstorm and tornadic loads: Recent numerical and experimental developments." Poster presented at: *2019 Northeastern University College of Engineering PhD Research Expo*, February 21, 2019, Northeastern University, Boston, MA, USA.
- Le, V.; Caracoglia, L. (2018). "Performance-based engineering framework for vertical structures subjected to non-stationary wind loads." Poster presented at: *Northeastern University 8th Annual Civil & Environmental Engineering Industry Leadership Night*, November 28, 2018, Northeastern University, Boston, MA, USA.
- Le, V.; Caracoglia, L. (2018). "Investigations on the structural performance of building structures subjected to non-stationary thunderstorm wind loads by wavelet-Galerkin numerical methods." Poster presented at: *2018 Research, Innovation and Scholarship Expo (RISE: 2018)*, April 6, 2018, Northeastern University, Boston, MA, USA.
- Le, V.; Caracoglia, L. (2018). "A MATLAB®-based numerical algorithm for stochastic simulation of structural load, response and damage (MATLAB® SLRD) induced by non-stationary thunderstorm downbursts. Poster presented at: *2018 MathWorks SMART Laboratory Northeastern University Collaboration Day Event*, Mar. 12, 2018, Northeastern University, Boston, MA, USA.

Thesis/Dissertation

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