Fei Ding, PhD Candidate

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Research Interests

- ▌ Computational Fluid Dynamics
- ▌ Data Assimilation and Machine Learning
- ▌ Uncertainty Quantification and Optimization
- ▌ Wind Effects on Structures

Education

2014 – present	▌ **Ph.D. University of Notre Dame**, United States. **Major**: Civil Engineering; **Minor**: Computational Engineering. **Thesis**: Morphing structural profile under winds using surrogate models. GPA: 3.9/4.0
2011 – 2013	▌ **M.Phil., Civil Engineering, Hong Kong University of Science and Technology, Hong Kong.** **Thesis**: Optimization-based approach for wind tunnel derived load combinations of tall buildings. GPA: 4.0/4.0.
2007 – 2011	▌ **B.Eng., Civil Engineering, Zhejiang University, China.** GPA 3.7/4.0 Major GPA: 3.9/4.0

Publications

Journal Publications

1. **Ding, F.**, Kareem, A. & Wan, J. (2019). Aerodynamic tailoring of structures using computational fluid dynamics. *Structural Engineering International*, 26–39. doi:`https://doi.org/10.1080/10168664.2018.1522936`

2. **Ding, F.** & Kareem, A. (2018a). A multi-fidelity shape optimization via surrogate modeling for civil structures. *Journal of Wind Engineering and Industrial Aerodynamics*, *178*, 49–56.

3. **Ding, F.**, Zhao, Y., Yang, X., Zhou, P. & Lin, Y. (2012). Serviceability analyses for a sightseeing galley in the steel roof of a stadium in nantai lake olympic wetland park under human-induced vibrations. *Journal of Building Structure*, *42(8)*, 8–11.

Peer-Reviewed Conference Proceedings

1. **Ding, F.** & Kareem, A. (2018b). Inflow and model-form uncertainty quantification in CFD-enabled aerodynamic shape optimization. In *Proceedings of the 7th International Symposium on Computational Wind Engineering*. Seoul, Korea.

2 Ding, F. & Kareem, A. (2018c). Sequential surrogate modeling for aerodynamic shape tailoring of tall buildings using multi-fidelity CFD simulations. In *Proceedings of the 7th International Symposium on Computational Wind Engineering*. Seoul, Korea.

3 Ding, F., Kareem, A. & Spence, S. M. J. (2017a). A multi-fidelity model calibration approach for shape optimization of civil structures. In *Proceedings of the 7th European-African Conference on Wind Engineering*. Liège, Belgium.

4 Ding, F., Kareem, A. & Spence, S. M. J. (2017c). Inflow uncertainty propagation and quantification in CFD-based aerodynamic shape optimization of civil structures. In *Proceedings of the 12th International Conference on Structural Safety and Reliability*. Vienna, Austria.

5 Ding, F., Kareem, A. & Spence, S. M. J. (2016). Multi-fidelity surrogate modeling for shape optimization of civil structures. In *Proceedings of the 4th American Association for Wind Engineering Workshop*. Miami, Florida.

6 Ding, F., Spence, S. M. J. & Kareem, A. (2016a). Optimizing the aerodynamics of bluff bodies using CFD-based surrogate modeling. In *Proceedings of the 8th International Colloquium on Bluff Body Aerodynamics and Applications*. Boston, Massachusetts.

7 Ding, F., Spence, S. M. J. & Kareem, A. (2016b). The role of aerodynamics in performance-based design. In *Proceedings of the 8th International Colloquium on Bluff Body Aerodynamics and Applications*. Boston, Massachusetts.

8 Ding, F., Chan, C. M. & Tse, K. T. (2014). A novel optimization approach for determining wind tunnel derived load combinations for tall buildings. In *Proceedings of the 2014 World Congress on Advances in Civil, Environmental and Material Rsearch*. Busan, Korea.

Conference Presentations

1 Ding, F., Kareem, A. & Spence, S. M. J. (2017b). CFD-based multi-objective aerodynamic shape optimization of twisted tall buildings. *Proceedings of the 13th Americas Conference on Wind Engineering*, Gainesville, Florida.

Posters

1 Ding, F. & Kareem, A. (2019). Inflow and model-form uncertainty quantification in CFD using surrogate models. John Hopkins University: USACM Conference on Uncertainty Quantification in Computational Solid and Structural Materials Modeling.

2 Ding, F. & Kareem, A. (2017). An intelligent design of real-time morphing structures under winds. Washington, DC: 3rd Global Grand Challenges Summit (GGCS).

Teaching Experience

2014 – present Graduate Teaching Assistant
Civil Engineering Materials
Introduction to Structural Engineering
Structural Dynamics
Transportation Engineering

Selected Honors and Awards

2019   🔖 **Student Travel Award,** by the USACM Conference on Uncertainty Quantification in Computational Solid and Structural Materials Modeling at John Hopkins University.

2018   🔖 **Thornton Tomasetti Student Innovation Fellowship,** by Thornton Tomasetti Foundation for Research on "Autonomous Morphing of Structural Profile under Winds".

2017   🔖 **Selected Student Poster Presentation in the 3rd Global Grand Challenges Summit (GGCS),** by the US National Academy of Engineering (NAE), the UK Royal Academy of Engineering (RAE) and the Chinese Academy of Engineering (CAE). Washington, DC.

       🔖 **IASSAR Student Scholarship,** by International Association for Structural Safety and Reliability (IASSAR).

       🔖 **Notebaert Professional Development Award,** by Graduate School, University of Notre Dame.

2011   🔖 **Academic Excellent Student Scholarship,** by Zhejiang University, China.

Certifications and Professional Memberships

2018   🔖 **Certificate of Deep Learning Specialization,** by Coursera.

       🔖 **Society for Industrial and Applied Mathematics (SIAM),** Student Member.

2015   🔖 **American Society of Civil Engineers (ASCE),** Student Member.

Skills

Coding   🔖 C++, Python, Matlab.

Software   🔖 OpenFOAM, Fluent, SAP2000, Etabs.