

YUXIANG ZHANG

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Education and Qualifications

2018 - 2022 **PhD on CFD modelling of Wind on Bridges** **University College Dublin**
Funding – China Scholarship Council

Thesis title: Applying Computational Fluid Dynamics Simulations for Aerodynamic Studies of Long-Span Bridges

PhD Viva passed on June 14th, 2022

In CFD simulations, my research has investigated the application of CFD modelling for the analysis of wind on the Rose Fitzgerald Kennedy Bridge. The outcome of my research will help validate the use of CFD for the analysis of wind for bridge design.

Research included:

- Securing access to the Kay cluster server operated by ICHEC (Irish Centre for High-End Computing)
- Project management and self-directed learning
- Collaboration with stakeholders (Arup CFD team, TII, NSAI)
- Publication of Journal Papers
- Presentations at international conferences

2017- 2018 **Masters of Engineering Science (Structural Engineering)** **University College Dublin**
Research thesis: CFD simulation examining sheltering traffic from wind Grade: 2:1

2013- 2017 **Bachelor of Engineering (Civil Engineering)** **Chang'an University, China**
1st Class honours

Publications

Zhang, Y., Cardiff, P., and Keenahan, J., (2021). 'Wind-induced phenomena in long-span cable-supported bridges: a comparative review of wind tunnel tests and computational fluid dynamics modelling', *Applied Sciences*, 11(4), 1642.

Zhang, Y., Cardiff, P., Cahill, F., and Keenahan, J., (2021). 'Assessing the capability of computational fluid dynamics models in replicating wind tunnel test results for the Rose Fitzgerald Kennedy Bridge', *Journal of Civil Engineering*, 2(4), 1065-1090.

Zhang, Y., MacReamoinn, R., Cardiff, P., and Keenahan, J., (2021). 'A workflow for analysing wind effects on long-span bridges using open-source software', under review with the *OpenFOAM Journal*.

Zhang, Y., Cardiff, P., Sweeney, C., and Keenahan, J., (2021). 'Comparison of field data from the Rose Fitzgerald Bridge with full-scale CFD models', under review with the *Journal of Bridge Engineering*.

Zhang, Y., Cardiff, P., and Keenahan, J., (2020). 'A numerical study of the effect of wind barriers on traffic and the bridge deck', in Proceedings of the Civil Engineering Research in Ireland Conference, Cork, Ireland, 27-28 August 2020.

Professional Memberships Student member of Institute of Civil Engineers Ireland and Engineers Ireland

Scholarships and Awards

Nvidia GPU Grant (2019) This grant provided by Nvidia offers a GTX Titan V GPU to support my PhD studies. The GPU is used for post-processing, rendering and computational modelling.

YUXIANG ZHANG

China Scholarship Council
(CSC) Individual Fellowship
Award (2018)

This scholarship sponsors Chinese citizens to pursue study abroad and for international students to study in China. Awardees are selected through a rigorous academic evaluation process organised by the Chinese Scholarship Council. This individual fellowship, awarded to me, funds my PhD studies at UCD.

Employment History

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| Post-graduate Demonstrator
(2017 - present) | • Demonstrated labs and gave tutorials to third level students on a wide variety of civil engineering subjects |
| Exam Invigilator
(2018 - present) | • Invigilating exams in Newman Centre, UCD
• Providing support for students with disabilities |

Key Skills

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| IT Skills | • Advanced in 3D CAD software: AutoCAD and FreeCAD
• Advanced in CFD software: OpenFOAM
• Proficient in ParaView for visualising results
• Proficient in Linux and HPC operation
• Advanced in MS Word, PowerPoint and Excel |
| Presentation skills | • Presented at international conferences and to funding agencies.
• Presented at Arup in a lunch-and-learn session on my Master project in 2017. |
| Leadership skills | • I am leading my own PhD.
• Directed and run undergraduate laboratories and tutorials.
• Organized the string section of the school orchestra in Chang'an University |
| Writing skills | • Have written a thesis.
• Journal publications.
• Reports for funding agency |
| Language skills | • English (Full professional proficiency)
• Chinese (Native language, bilingual proficiency). |

Hobbies and Interests

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| Violin | 20 years experience. I was a member of the School Orchestra of Chang'an University (2013-2016). I was the chief violin player of the string section (2014-2016). |
| Photography | 5 years experience. Mainly interested in street photography. Expert in using Nikon and Fujifilm systems. |
| Traveling and Reading. | |

Referees

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| Dr. Eugene O'Brien

Professor
University College Dublin

eugene.obrien@ucd.ie | Dr. Philip Cardiff

Associate professor
University College Dublin

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