

## YADONG JIANG

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Dr Jamie Goggins  
Civil Engineering  
National University of Ireland, Galway  
University Road  
Galway, H91 TK33  
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Dear Dr Goggins:

I am writing to apply for the MaREI-Blades postdoctoral researcher 1 position, which was announced on the NUIG website. As a PhD student majoring in Earthquake Engineering and Engineering Seismology at the University School for Advanced Studies IUSS Pavia, I have already past the doctoral defence and my expected graduation date is May 2018.

As a candidate, here are what I could immediately bring to the table:

**Programming Skills:** I have developed solid programming skills in Python during my post-graduate training. All the data and scientific plots of my PhD research were processed by Python scripts. In the meantime, I had created many productive tools based on Python, e.g. genetic algorithm optimizer tool, ground motion response spectrum analyser, CFST column designer (based on Eurocode 4). Besides the Python skills, I had experiences of developing OpenSees uniaxial material based on C++, which can be useful when the simplified model for the composite material is required. My programming skills allow me to further develop and test your in-house design and testing tools, BladeComp.

**Numerical Modelling Skills:** In my PhD research, I had developed micromechanical models in Finite Element (FE) software ABAQUS to simulate the flexural behaviour of Concrete-Filled Steel Tubes (CFST) under quasi-static/dynamic loading. Additionally, the ductile fracture of the steel tube was also considered during the analysis. Moreover, I used the Python scripts to automatize the parametric study procedures, namely the input file generation and the analytical data extraction. I believe my modelling skills prepare me to propose an accurate FE model for the tidal rotor blades.

**Experience of Research Findings Presentation and Research Papers Authoring:** I have authored and co-authored 11 journal or conference papers during my PhD career. Meantime, I have presented my research achievements orally in 6 international conferences and workshops. These experiences fully prepare me for any future report delivery and article authoring.

I believe that my research background, skills and experiences well qualify me for the research associate position. My curriculum vitae is enclosed for your kind perusal. Thank you for your consideration and I look forward to hearing from you soon.

Sincerely,  
Yadong Jiang  
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