



Alumni Case Study

Daniel Milano



EPSRC & NERC Industrial CDT
for Offshore Renewable Energy www.idcore.ac.uk

CATAPULT

Offshore Renewable Energy

Project

Daniel's IDCORE project was sponsored by EDF, where his work focussed on numerical modelling of floating offshore wind turbines. He concentrated on advanced mooring geometries for tension-leg platform designs, tackling the challenges created by different weather events and capturing the underlying physics with existing numerical methods. Where these techniques were insufficient, he also worked with colleagues in EDF to address the shortcomings by developing new tools.

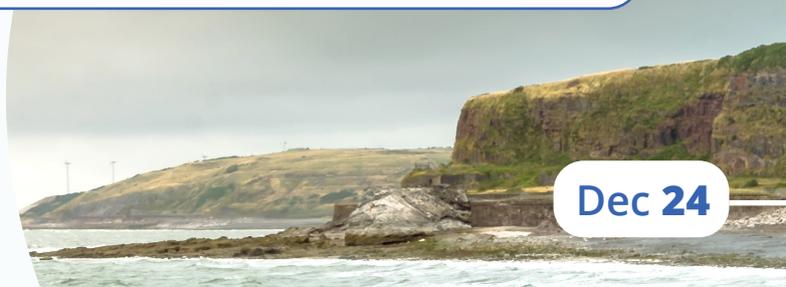
The project was very successful, and Daniel went on to apply these modelling approaches not only to a single turbine but also to whole wind farms and much wider spatial domains, modelling the impact of climate on turbine performance over long periods. He was able to generate accurate representations of the wind and wave domain with an unprecedented level of detail and use this to virtually deploy turbines in space and time, creating a high fidelity 'numerical prototype'. This allows developers to evaluate potential new sites while also providing a tool that can be used with existing deployments for hindcast wind and wave assessment, identifying life extension opportunities at specific sites.

This work developed Daniel's credibility and profile in the sector and led to him securing a job in the floating offshore wind team at the Offshore Renewable Energy (ORE) Catapult, as a numerical modelling and simulation specialist. ORE Catapult were seeking to building their capabilities in this area and Daniel was able to bring in specific skills that supported this strategic development.

I was part of one of the smallest cohorts IDCORE has run. There were only five in my year and we have all become lifelong friends. IDCORE puts a lot of effort into facilitating the development of these relationships, and it pays off. It has been great to be able to share experiences and learn from each other as our careers keep developing.

For me, this sense of community extends well beyond my cohort – I regularly meet and work with IDCORE alumni and two of the five PhD-level projects I currently supervise are IDCORE EngDs. The network I developed in EDF has also been important to me, and it is great to see the work I started being carried on through other EDF-sponsored IDCORE projects.

Daniel Milano, Floating Wind Senior Engineer, ORE Catapult



IDCORE Legacy

Daniel completed his EngD project during the COVID pandemic, having moved back to Scotland to finish his thesis and for the birth of his twin sons.

He has now been working at ORE Catapult for over four years, and has progressed quickly through the organisation, which he attributes to the expertise and academic rigour he developed whilst on the IDCORE programme. IDCORE developed him as a research engineer at a pace he couldn't have achieved outside of the programme and doing this in an industrial context meant that he was well prepared for his role in the Catapult.

Daniel had been in industry before joining IDCORE, working in an oil and gas company with offices in Italy and Aberdeen. He had gone there after completing a Masters Degree in Mechanical Engineering at the University of Trieste followed by a Masters in Renewable Energy Technology from Cranfield University. Although he was working in marine engineering and developing offshore applications, Daniel was not in the renewables sector that he had been training for and he felt that his career path was heading in the wrong direction. The opportunity to join IDCORE acted as a 'reset' for this, and he has never looked back.



THE UNIVERSITY
of EDINBURGH



University
of Exeter

University of
Strathclyde
Glasgow



Natural
Environment
Research Council



Engineering and
Physical Sciences
Research Council