

Deadline: 31st November 2019

Title: PhD: artificial intelligence & the finite volume method

Overview

Artificial intelligence is transforming many areas of society, from self-driving cars to cognitive medical assistants and energy efficient buildings. The application of such groundbreaking approaches to the engineering industry has been slow. A primary reason is that deep learning methods are typically developed and implemented by computer scientists and statisticians, whereas, the intimate details of complex manufacturing processes are only understood by engineers.

This project will integrate these fields by developing novel hybrid techniques that combine artificial intelligence methods with advanced engineering simulations. This will drive the development of next-generation manufacturing processes and design techniques.

The two advertised PhD positions will be based in a vibrant groups of over 20 others researchers (PhDs & Post-docs), within the Bekaert University Technology Centre @ UCD (www.ucd.ie/bekaert) and the national centre for advanced manufacturing I-Form (www.i-form.ie), as well as working closely with multi-national industry partner Bekaert (www.bekaert.com)

The positions

We are looking for two candidates who are passionate about technology. Both positions will focus on merging traditional numerical methods (e.g. finite volume and finite element methods) with the exciting world of artificial intelligence. Project 1 aims to develop novel constitutive laws for advanced materials based on artificial intelligence, and project 2 looks to radically accelerate finite volume solution procedures also using artificial intelligence. The successful candidates are expected to have a first (or upper second) class degree in engineering, science, mathematics or computer science.

The project is funded for 4 years. The base annual stipend is €16,000, with the option to earn an additional €2,000 to €4,000 via teaching assistance and exam invigilation.

The location

Ireland's largest university, University College Dublin (www.ucd.ie), is ranked within the top 1% of higher education institutions worldwide. The university is located on a 330 acre parkland campus in the south Dublin suburbs (with three lakes!). Dublin itself is a lively European capital renowned for its night-life and bustling technology industry.

How to apply

To apply, please complete the online form at this link: <https://forms.gle/pMDkBRIexgbT11QD6>

Applications will be monitored daily and candidates will be notified via email if they have successfully obtained an interview (e.g. by video-call), or if they have not been deemed suitable for the position. Ideally, the applicants can start as soon as possible; however, the project can wait for particularly passionate well-suited candidates.

Informal enquiries should be directed to philip DOT cardiff AT ucd DOT ie. APPLICATIONS VIA EMAIL WILL BE IGNORED.