OPEN CALL – PhD position

Host (recruiting) organisation

CIMNE, Barcelona, Spain

Project Title:	Sensor data assimilation supporting decision making in the assessment of embankment dams

Supervisory team

Primary academic institution	Industrial institution
Dr. Sergio Zlotnik UPC/CIMNE	Dr. Andrea Bartoli WorldSensing
Secondary academic institution Prof. Francisco Chinesta Ecole Centrale Nantes	

Project description

A monitoring program provides measurements of different parameters including pore water pressure in different locations of a tailing dam. These data are obtained in near-real time from a wireless sensor network and have to be used to assess the integrity of the dam. The information obtained from the raw data is often insufficient for decision making and has to be complemented by the knowledge provided by a model. The objective of the project is to design computational tools that assimilate in real time the data obtained into a computational model. This will allow enhancing the quality of the information at hand and make educated decisions on the control and maintenance of the dam. The computational strategy to be devised in based on the use of reduced order models and different tools for model updating.

Benefits

- Doctorate degree from both UPC·BarcelonaTech and Ecole Centrale Nantes
- Integration within the research group of sensor industry leader
- 36 month full-time employment contract
- Additional mobility and family allowances
- Research supervision and training by recognised experts in computational mechanics from academia and industry
- Access to state-of-the-art research skd computing facilities
- Training in transversal skills (e.g. communication skills, entrepreneurship)

Prerequisites

- To have a strong undergraduate and MSc degree (or equivalent) in Engineering, Mathematics, Physics or a related field and a good level of English
- To have an enthusiastic attitude to conduct research, being hard-worker and critic
- To demonstrate knowledge of some programming languages such as Matlab and Fortran
- To have some experience with Finite Element analysis

Eligibility

Applicants shall, at the time of recruitment by the Universitat Politecnica de Catalunya · BarcelonaTech, be in the first four years (full-time equivalent research experience) of their research careers and have not been awarded a doctoral degree. Full-Time Equivalent Research Experience is measured from the date when a researcher obtained the degree, which would formally entitle him/her to embark on a doctorate, irrespective of whether or not a doctorate is or was ever envisaged.

At the time of recruitment by the host organisation, researchers must not have resided or carried out their main activity (work, studies, etc.) in SPAIN for more than 12 months in the 3 years immediately prior to the reference date.

Duration of the project

The total duration of the project is 36 months.

Obligations of ESRs

- Completion of the PhD programme
- Be highly committed with quality research, training and management. The successful candidate is expected to become a future leader on the development and application of advanced computational methods for industry
- Take part of the mobility programme both in academia and industry
- Participate on the dissemination and outreach activities associated to the project
- Attend international conferences and present the research undertaken
- Contribute to the writing of articles in high impact international journals

Closing date

Until position is filled

How to apply

http://www.lacan.upc.edu/ProTechTion

Questions

protechtion.itn@upc.edu