PhD Positions at the University of Technology Sydney, Australia

Dr Xuzhen He from UTS is seeking high-achieving PhD students in 2023. The research project is "Modernise geotechnical investigation and analysis with machine learning", which is funded by the Australian Research Council Discovery Project. Candidates with knowledge and research experience in computational geomechanics and/or machine learning are encouraged to apply.

About the project: The project aims to address the ineffectiveness associated with risk analysis of geotechnical systems by reducing variabilities and by rigorously quantifying such variabilities. It is expected to generate new knowledge in machine-learning-aided risk analysis and in virtual modelling of multiphase-multiphysics-multiscale problems involving random variables. Expected outcomes are datasets and computer tools that are equipped with new functionalities including parameter optimisation, uncertainty quantification, machine-learning based surrogate models and risk analysis. These tools will help to bridge the increasing gap between academic research and engineering practice, transform geo-risk analysis and optimise complex construction processes.

Dr Xuzhen He is a Senior Lecturer and ARC DECRA Fellow at UTS. He has distinctive education and training background (BSc from Tsinghua University and PhD from the University of Cambridge). He received the prestigious John Winbolt Prize from Cambridge in 2015 and was awarded the ARC Discovery Early Career Researcher Award (DECRA) in 2021.

About the role: The PhD candidate is expected to meet the following criteria:
• Master's degree by research or bachelor's degree with a strong academic record which is equivalent to first-class honours
• Domestic students or international students (meeting UTS English Proficiency requirement)
• Demonstrated self-motivation and commitment to work on research topics.
• Demonstrated experience in undertaking research in the fields of computational geomechanics and machine learning.
• Demonstrated programming skills.
• Excellent written skills evidenced by scientific journal papers, conference papers, or technical reports.
• Excellent interpersonal and oral communication skills

About the Scholarship: This project includes funding for a living stipend scholarship at the Research Training Program rate of $32,000 per annum (tax-exempt). Fee waivers may also be considered for the successful international candidate. The scholarship is for 3.5 years.