

## CSEE'18

### 3<sup>rd</sup> WORLD CONGRESS ON CIVIL, STRUCTURAL, AND ENVIRONMENTAL ENGINEERING



**APRIL 8 - 10, 2018 | BUDAPEST, HUNGARY**

Paper Submission: OCT. 12, 2017 | Early-Bird Registration: NOV. 16, 2017

CSEE'18 is composed of 5 conferences, while each conference consists of an individual and separate theme, they share considerable overlap, which prompted the organization of this congress.

The goal of this undertaking is to bring together experts in each of the specialized fields, and at the same time allow for cross pollinations and sharing of ideas from the other closely related research areas. Interested authors, researchers, and industrial experts are invited to register for the conference that best resonates with their technical background. At the same time, attendees are permitted, and even encouraged, to attend talks from co-located conferences.

**ICGRE'18** 3<sup>rd</sup> International Conference on **Geotechnical Research and Engineering** [www.icgre.org](http://www.icgre.org)

**ICSENM'18** 3<sup>rd</sup> International Conference on **Structural Engineering, New Technology and Methods** [www.icsenm.com](http://www.icsenm.com)

**ICESDP'18** 3<sup>rd</sup> International Conference on **Environmental Sustainability, Development, and Protection** [www.icesdp.com](http://www.icesdp.com)

**AWSPT'18** 3<sup>rd</sup> International Conference on **Air, Water, and Soil Pollution and Treatment** [www.awspt.com](http://www.awspt.com)

**ICTE'18** 3<sup>rd</sup> International Conference on **Traffic Engineering** [www.teconference.com](http://www.teconference.com)



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Australia



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Western University,  
Canada



#### KEYNOTE SPEAKER

**Prof. Anas Ghadouani**  
University of Western  
Australia, Australia



#### KEYNOTE SPEAKER

**Prof. Timothy McCarthy**  
University of Wollongong,  
Australia

#### SUBMISSIONS

Submissions in the form of extended abstracts, short papers, and full manuscripts are welcome. All submitted papers will be peer reviewed. All accepted and presented papers will be published in the conference proceedings, under an ISBN reference in a USB drive. The online version of the proceedings will also be published under an ISSN reference and each paper in the proceedings will be assigned unique DOIs by CrossRef.

**Authors are invited to submit their papers by October 12, 2017.**

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# CSEE' 18

## WORKSHOP ON NUMERICAL MODELLING IN GEOTECHNICAL ENGINEERING



APRIL 2018 | BUDAPEST, HUNGARY

### WORKSHOP OBJECTIVES

This intensive Workshop will provide you with the needed theory and practical background required to confidently utilize modern analysis software to achieve practical solutions to challenging geotechnical problems. The workshop includes two modelling modules: Finite Elements and Artificial Intelligence.

### COURSE CONTENT

#### FINITE ELEMENT MODELLING

- **Introduction to Geotechnical Modelling:** Types of Models, and FEA
- **Nonlinear constitutive models:** physical parameters; commonly used yield functions for soils, and Determination of model parameters.
- **Treatment of soil-structure interface:** contact elements; uplift, sliding.
- **Solution strategy:** buildup of FE models, mesh sizes, initialization, boundary conditions.
- **Hands-on Session:** Shallow Tunnel/Culvert Problem

#### ARTIFICIAL INTELLIGENCE MODELLING

- **Introduction and overview of Artificial Intelligence.**
- **Development of Artificial Intelligence models:** Determination of model inputs; data division; data preparation; model validation; model robustness; model transparency and knowledge extraction; model extrapolation; and model uncertainty.
- **Use of artificial neural networks in geotechnical engineering.**
- **Hands-on Session:** Shallow and Deep Foundations.



#### CONGRESS CHAIR

**A/Prof. Hany El Naggar**  
Dalhousie University,  
Canada

Associate Professor of Geotechnical Engineering at Dalhousie University, Canada, with more than 20 years of experience in civil construction, geotechnical and structural engineering and research in Canada and overseas.



#### CONGRESS CO-CHAIR

**A/Prof. Mohamed Shahin**  
Curtin University,  
Australia

Associate Professor of Geotechnical Engineering, at Curtin University, Australia, with over 25 years of academic and industrial experience.

