

AICE 2022

Special Session on Artificial Intelligence in Civil Engineering

at the 14th Asian Conference on Intelligent Information and Database Systems (ACIIDS 2022)

Almaty, Kazakhstan, June 6-9, 2022

Conference website: <http://www.aciids.pwr.edu.pl/>

Special Session Organizers

Prof. Panagiotis G. Asteris

Professor, Computational Mechanics Laboratory
School of Pedagogical & Technological Education, Athens, Greece
Director of Master's Program in Applied Computational Structural Engineering (ACSE)
E-mail: panagiotisasteris@gmail.com

Prof. Anasua GuhaRay

Associate Professor,
Department of Civil Engineering,
BITS Pilani Hyderabad Campus, Telangana, India
E-mail: guharay@hyderabad.bits-pilani.ac.in

Prof. Pijush Samui

Associate Professor,
Department of Civil Engineering,
National Institute of Technology Patna, Patna, India
E-mail: pijush@nitp.ac.in

Objectives and topics

Artificial Intelligence (AI) are methods that are poised to transform the way humans will interact with machines, and the role that machines will play in all spheres of human life. On the one hand, there is the exhilaration and excitement of the immense potential of these technologies to enhance and enrich human life, and on the other hand, there is fear and apprehension of a dystopian future where machines have taken over. These techniques are considered in the category of computer science, involved in the research and application of intelligent computer. Traditional methods for modelling and optimizing complex problems require huge amounts of computing resources, and computing-based solutions can often provide valuable alternatives for efficiently solving problems. Such techniques due to making non-linear and complex relationships between dependent and independent variables can be performed in the field of bioengineering with a high degree of accuracy. In this way, many new intelligence models can be introduced for different applications. This special session welcomes papers related to the application of various AI techniques such as Artificial Neural Network (ANN), Adaptive Neuro Fuzzy Inference System (ANFIS), Support Vector Machine (SVM), Relevance Vector Machine (RVM), Least Square Support Vector Machine (LSSVM), Genetic Programming (GP), Multivariate Adaptive Regression Spline (MARS), Minimax Probability Machine Regression (MPMR), Extreme Learning Machine (ELM), Deep Learning (DL), Emotional Neural Network (ENN), Gaussian Process Regression (GPR), Random Forest (RM), Functional Network (FN), etc. in civil engineering. Hybrid and ensemble AI can be also adopted for solving various problems in civil engineering such as geotechnical engineering, concrete, structural engineering, water resources, environmental engineering, transportation engineering, etc. Hybrid machine learning models are developed based on metaheuristic optimization (MO). Various MO techniques (Genetic Algorithm (GA), Cat Swarm (CS), Grey Wolf (GW), Harris Hawks (HH), Artificial Bee Colony (ABC), Ant Colony Optimization (ACO), Ant Lion Optimization (ALO), Imperialist Competitive Algorithm (ICA), etc.) are applied for the development of hybrid IS. Interested authors can submit the papers related to various ensemble AI techniques such as random forest, gradient boosting, etc. Authors should submit the

manuscript on the following topics.

- Support Vector Machine
- Relevance Vector Machine
- Least Square Support Vector Machine
- Genetic Programming
- Gaussian Process Regression
- Emotional Neural Network
- Multivariate Adaptive Regression Spline
- Extreme Learning Machine
- Minimax Probability Machine Regression
- Hybrid AI
- Ensemble AI

Important dates

Submission of papers: **15 January 2022**
Notification of acceptance: **1 March 2022**
Camera-ready papers: **15 March 2022**
Registration & payment: **15 March 2022**
Conference date: **6-9 June 2022**

Program Committee (to be invited)

Submission

All contributions should be original and not published elsewhere or intended to be published during the review period. Authors are invited to submit their papers electronically in pdf format, through EasyChair. All the special sessions are centralized as tracks in the same conference management system as the regular papers. Therefore, to submit a paper please activate the following link and select the track: **AICE 2022: Special Session on Artificial Intelligence in Civil Engineering.**

<https://easychair.org/conferences/?conf=aciids2022>

Authors are invited to submit original previously unpublished research papers written in English, of up to 13 pages, strictly following the LNCS/LNAI format guidelines. Authors can download the Latex (recommended) or Word templates available at [Springer's web site](#). Submissions not following the format guidelines will be rejected without review. To ensure high quality, all papers will be thoroughly reviewed by the AICE 2022 Program Committee. All accepted papers must be presented by one of the authors who must register for the conference and pay the fee. The conference proceedings will be published by Springer in the prestigious series LNCS/LNAI (indexed by ISI CPCI-S, included in ISI Web of Science, EI, ACM Digital Library, dblp, Google Scholar, Scopus, etc.).