People's Democratic Republic of Algeria
University of Larbi Ben Mhidi Oum el Bouaghi
Faculty of Earth Sciences and Architecture

**INTERNATIONAL WORKSHOP CHAIRED BY AMEL BENZAOUI**
**AND**
**SUPPORTED BY THE ARTIFICIAL INTELLIGENCE HOUSE**

**Laboratory for the Evaluation of Quality in Architecture and the Built Environment (LEQUAREB)**
**Department of Architecture**

Date: APRIL 29-30, 2024
Time: From 9 a.m. to 5 p.m.
Website: www.univ-oeb.dz

Location: **TOWER** CONFERENCE ROOM,
SECOND FLOOR,

**The honorary president:**
**Pr Dibi Zohir**

Artificial Intelligence and Architectural Modeling: APRIL 29 AND 30, 2024

**CHAIRED BY AMEL BENZAOUI**
AND SUPPORTED BY THE HOUSE OF ARTIFICIAL INTELLIGENCE AT THE UNIVERSITY OF OUM EL BOUAGHI UNDER THE DIRECTION OF DR SOFIANE ZAIDI

## ARGUMENT

The field of architecture has experienced a transformative shift due to the rapid advancement of digital technology. This shift is marked by the emergence of a wide range of tools and methods that are used to tackle design challenges. These cutting-edge technologies have not only offered architects and designers novel perspectives, but have also revolutionised their work methodologies. Architects may enhance their workflows by integrating these digital technologies, allowing them to explore innovative thoughts and ideas across the whole project development process, ranging from initial 3D modelling to the ultimate manufacturing stage. Parametric design has had a significant impact in shaping architectural concepts over the past thirty years. Nevertheless, experts like as Menges and Ahlquist caution that although parametric simulations might offer valuable insights, they may not fully capture the fundamental principles of computational design thinking. They propose that a comprehensive approach to architectural practice should encompass not only formal methodologies, but also sociological, cultural, and material expertise. Computational thinking has revolutionised research in architectural design by enabling the exploration of innovative concepts including parametric designs, sustainable building methods, and environmental analysis. In addition, the implementation of tools like Building Information Modelling (BIM) has streamlined project management, enabling architects to efficiently navigate projects from inception to the completion. Simultaneously, the latest advancements in the fourth industrial revolution, including machine learning (ML) and information and communication technologies (ICTs), have had a significant influence on the architectural, engineering, and construction (AEC) sectors.

Big Data and other technologies have enhanced decision-making and prediction systems, promoting a cooperative alliance between humans and robots. Artificial intelligence (AI) technologies have demonstrated significant potential in various domains, such as expert systems, robotics, and virtual reality. Consequently, architecture students now have exceptional chances for growth and exploration. The objective of the workshop on artificial intelligence and architectural modelling is to fully engage students in these advanced technologies, providing them with the necessary knowledge and abilities to succeed in a rapidly growing field. The workshop aims to enhance students' learning experiences by equipping them with advanced AI tools and methodologies, while also fostering their ability to envision the future of architecture through inventive and creative thinking.

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