



**Brief description and notes (economic contribution if provided)**

**MACHINE HOUSE concept workshop**

**Architectural AI Practices from the Technological Design Scale**

Politecnico di Milano, 27 August – 12 September

Compulsory Internship | 100 hours | 4 cfu

20 Students' classroom

ARCHITETTURA - ARCHITETTURA DELLE COSTRUZIONI/ BUILDING ARCHITECTURE

Professors: Salvatore Viscuso (Responsible Prof.), Amirhossein Ahmadnia (Polimi Digiskills Prof.)

Academic Tutors: Luciano Ambrosini, Weronika Wnukowska, Xinwei Li

In recent years, Artificial Intelligence has emerged as one of the key topics and concerns across different professions. We are on the verge of another technological revolution, the most rapid and transformative one to date. As AI already impacts most jobs and business sectors, architecture is at the intersection of these changes. While architecture has historically been resistant to technological shifts, now more than ever, we must remain aware of AI's dynamic landscape and possibilities.

The workshop aims to foster in the students a deep curiosity about how digitalization can positively affect architectural practice and how it will continue to shape it and influence technological design regarding construction systems, building products and materials, and furniture design.

The final objective is to acquire the basic skills to consider AI not as a replacement but as a powerful assistant with the potential to push boundaries and enhance human creativity.

Although AI tools may change almost overnight, understanding how they operate and influence our creative process will create a stable foundation for navigating this paper.

The workshop will explore the possibilities of AI-human collaboration and the dual nature of this topic. While many existing tools and new technologies exist, architects need help understanding and implementing them. Rather than inventing new tools from scratch, we aim to bridge this gap by investigating the available tools and uncovering how they can be valuable in integrating our design workflows.

The didactic activities, organized with the active collaboration of architecture and engineering firms (Stantec Italy, Arup Italy) and product manufacturers and contractors (Facade Textile Ltd.), will allow us to better investigate the potential of AI technologies. At the end of the workshop, each student will prepare a design-based research paper focusing on a specific research task regarding the self-multi-configurable house of the future. The didactic board must approve each research paper topic. Students will be asked to purchase licenses for the necessary software tools (max 50 euros).



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