



DIGITAL TWINS IN CONSTRUCTION

Day 1 – 2025, June 16th: Welcome and Keynote

5:00 pm - Welcome speech

“Welcome and presentation of the summer school program” (Alessandro Carbonari)

5:30 pm - Keynote speech

“Digital transformation by construction robotics enabling Construction 5.0” (Thomas Bock)

7:00 pm – Remarks from IAARC

“IAARC summer schools and events for graduate and PhD students”(Shabtai Isaac)

*7:30 pm - Buffet **Dinner***

Day 2 – 2025, June 17th: Simulation and modelling

9:30 am – Lecture no. 1

“Digital solutions for design, prefabrication and robotic construction” (Kepa Iturralde, Institut für Baubetriebslehre, Stuttgart, Germany)

11:15 am - Coffee break

11:30 am - Lecture no. 2

“Deep-learning -based semantics extraction of secondary and MEP components of buildings” (Frédéric Bosché, University of Edinburgh, UK)

1:15 pm - Light Lunch

2:30 pm - Lecture no. 3

“Digital Twin for Construction Safety: Prevention through Design and Planning, Run-time Monitoring and Control, and Active Personalized Feedback and Learning” (Jochen Teizer, Technical University of Denmark, DTU)

4:15 pm - Coffee break

4:30 pm - First Workshop (BS&T Lab, UNIVPM)

“Emergency management including users' behaviors: wayfinding systems and virtual reality training strategies under different risk conditions” (Gabriele Bernardini, Enrico Quagliarini, Università Politecnica delle Marche, Ancona, Italy)

6:00 pm: bus departing to the Unicorn conference room and balcony

6:30 pm – Masterclass: one-to-one meetings between instructors and participants (Unicorn balcony)



Day 3 – 2025, June 18th: Digital twin development and applications

9:30 am - Lecture no. 4

“Automating the inspection of safety measures in buildings and construction sites through AI and robotics” (Borja Garcia de Soto, NYU at Abu Dabi)

11:15 am - Coffee break

11:30 am - Lecture no. 5

“Development of AI applications in construction and regulatory issues” (Žiga Turk, University of Ljubljana, Slovenia)

1:00 pm - Light lunch

2:15 pm – Lecture no. 6

“A framework architecture for the development of digital twins in construction” (Berardo Naticchia, Francesco Spegni, Università Politecnica delle Marche, Ancona, Italy)

3:15 pm – Second Workshop (DC3 Lab, UNIVPM)

“Applications of Digital Twins for lifecycle management of Infrastructures” (Leonardo Binni, Rocco Davide D’Aparo, Università Politecnica delle Marche, Ancona, Italy)

4:15 pm - Coffee break

4:30 pm - Third Workshop (DC3 Lab, UNIVPM)

“Applications of Digital Twins for city asset management” (Massimo Vaccarini, Leonardo Messi, Università Politecnica delle Marche, Ancona, Italy)

5:30 pm - Fourth Workshop (DC3 Lab, UNIVPM)

“Applications of Digital Twins for Safety Management” (Alessandra Corneli, Alessandro Carbonari, Università Politecnica delle Marche, Ancona, Italy, & Roberto Navoni, Laser Navigation srl)

6:30 pm: bus departing to the town center

*8:00 pm - Summer school **dinner** and **goodbye**.*