



## DIGITAL TWINS IN CONSTRUCTION

### **Day 1 – 2025, June 16<sup>th</sup>: 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 17<sup>th</sup>: 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 18<sup>th</sup>: 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 Safety Management” (Alessandra Corneli, Alessandro Carbonari, Università Politecnica delle Marche, Ancona, Italy)

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

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

*6:30 pm: bus departing to the town center*

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