

TwinNets 2022

International Workshop on Massive Digital Twins for the Computer-Networks Evolution

Belfast, June 14th 2022

Technical Program

[25 mins presentations - 5 mins question and answer]

08:45 - 09:00 Welcome Note

09:00 - 10:00 Session 1 - Network DTs 1

- **Relay selection in Bluetooth Mesh networks by embedding genetic algorithms in a Digital Communication Twin** - *Jorg Wieme and Mathias Baert (Ghent University, Belgium); Jeroen Hoebeke (Ghent University - imec, Belgium)*
- **A Digital Twin for the 5G Era: the SPIDER Cyber Range** - *Filippo Rebecchi (Thales SIX GTS France, France); Antonio Pastor (Telefonica I+D & Universidad Politécnica de Madrid, Spain); Alberto Mozo (Universidad Politécnica de Madrid, Spain); Chiara Lombardo (University of Genoa & CNIT- Research Unit of the University of Genoa, Italy); Roberto Bruschi (CNIT, Italy); Ilias Aliferis (Unisystems Greece, France); Roberto Doriguzzi-Corin (Fondazione Bruno Kessler, Italy); Panagiotis Gouvas (Ubitech, Greece); Antonio Alvarez Romero (ATOS, Spain); Anna Angelogianni (University of Piraeus, Greece); Ilias Politis (University of Patras & InQbit Innovations SRL, Greece); Christos Xenakis (University of Piraeus, Greece)*

10:00 - 10:30 Tea Break

10:30 - 12:30 Session 2 - Network DTs 2

- **Network Digital Twin for the Industrial Internet of Things** - *Mehdi Kherbache (CRAN Laboratory, Université de Lorraine, France); Moufida Maimour (Lorraine University, France); Eric Rondeau (CRAN, France)*
- **DTCPN: A Digital Twin Cyber Platform based on NFV** - *Xiulei Wang (Army Engineering University of PLA, China); Li Deng (JIANGSU Future Networks Innovation Institute, China); Ming Chen (Nanjing University of Aeronautics and Astronautics, China)*
- **Using network simulators as digital twins of 5G/B5G mobile networks** - *Giovanni Nardini and Giovanni Stea (University of Pisa, Italy)*
- **Design, implementation, and testing of a microservices-based Digital Twins framework for network management and control** - *Alfio Lombardo (UNICT, Italy); Giacomo Morabito (University of Catania, Italy); Salvatore Quattropiani (CNIT, Italy); Carmelo Ricci (UNICT, Italy)*

12:30 - 13:30 Lunch Break

13:30 - 15:00 Keynote – Diego R. Lopez – Telefonica I+D (keynote title TBC)

15:00 - 15:30 Tea break

15:30 - 17:30 Session 3 - Cyber-physical DTs

- **An Investigation of the Network Characteristics and Requirements of 3D Environmental Digital Twins for Inspection Robots** - *Hasan Kivrak, Paul Baniqued and Simon Watson (The University of Manchester, UK); Barry Lennox (University of Manchester, UK)*
- **Vineyard Digital Twin** - *Francesco Edemetti (Noovle SpA - Società Benefit, Italy); Angela Maiale, Camillo Carlini and Olga D'Auria (Telecom Italia, Italy); Jaime Llorca (New York University, New York, USA); Antonia Tulino (Bell Laboratories, USA & Università degli studi di Napoli, Italy)*
- **WoTwins: Automatic Digital Twin Generator for the Web of Things** - *Luca Sciullo, Angelo Trotta, Federico Montori, Luciano Bononi and Marco Di Felice (University of Bologna, Italy)*
- **Co-simulated Digital Twin on the Network Edge: the case of platooning** - *Maurizio Palmieri (University of Pisa, Italy); Christian Quadri (Università degli Studi di Milano, Italy); Adriano Fagiolini (University of Palermo, Italy); Gian Paolo Rossi (University of Milan, Italy); Cinzia Bernardeschi (University of Pisa, Italy)*

17:30 - 17:45 Ending Note