



Séminaire / Seminar

GUIDO PERBOLI

DIGEP Politecnico di Torino & CIRRELT



BEYOND OPTIMIZATION: INTEGRATING OPERATIONS RESEARCH IN METAVERSES AND DATASPACES

Abstract: Metaverse is the next evolution of the internet as a fully immersive, interactive digital universe that mirrors and expands upon the physical world. This extended world needs to store, monitor and share data. Then, dataspace is the shared environment where multiple parties can exchange and work with data while maintaining control over their own datasets.

This presentation explores how OR can enable intelligent, adaptive, and scalable infrastructures in the metaverse, drawing on recent advances in multi-objective learning, incentive-compatible mechanisms, and dynamic resource allocation. Frameworks such as MetaSlicing, MetaChain, and MO-SAC illustrate how algorithmic solutions must be co-designed with governance models, value propositions, and ethical priorities. From immersive virtual reality applications and virtual mobility systems to federated learning and decentralized networks, the metaverse is not only a technical arena: it is a humanist one. We argue that the future of OR in these domains lies at the intersection of management and leadership. Designing resilient and equitable digital ecosystems requires a new generation of models that are not just optimized, but strategically aligned, ethically grounded, sustainable, and organizationally feasible.

MARDI / THUESDAY

9 septembre 2025, 10h30
September 9th 2025, 10:30

Pavillon André-Aisenstadt
Salle / Room 5441

Ouvert à tous / Open to all

Responsable / Organizer
Teodor Gabriel Crainic