

Pietro Travesa

He obtained his bachelor's degree in physical engineering at the Politecnico of Torino in 2020 and his MSc in Physics of Complex Systems in 2022 from the universities of Politecnico of Torino, Sorbonne University, Paris Saclay, and Paris Cité. Now I am a PhD student under the supervision of Yamir Moreno and Guilherme Ferraz de Arruda. During the PhD, he was also employed for two years as a Junior Researcher at the CENTAI Institute, Turin, Italy.



Researcher profile

His research focuses on the study of hypergraphs and how to use them to model real systems, such as metabolic networks, and higher-order dynamical processes, such as contagion and rumor dynamics. He aims to develop a comprehensive theory of hypergraphs that can help better understand the role of higher-order interactions in complex systems. His most recent projects focus on dynamical systems, such as random-walk diffusion and critical-mass social contagion.

Why is his research important?

In complex systems and networks, interactions between entities are often not limited to pairwise connections.

Higher-order interactions, such as those involving groups of three or more entities, can have a significant impact on the dynamics and behavior of these systems. It is thus important to study the generalization of graphs for higher-order systems, the so-called hypergraphs. They represent a relatively new theory with great potential and a wide range of applications.

