SORS/WomenInBSC: "Random Walk with Restart on multilayer networks: from node prioritisation to supervised link prediction and beyond"

Objectives

Abstract:

Biological networks have proven invaluable ability for representing biological knowledge. Multilayer networks, which gather different types of nodes and edges in multiplex, heterogeneous and bipartite networks, provide a natural way to integrate diverse and multi-scale data sources into a common framework. Recently, we developed MultiXrank, a Random Walk with Restart algorithm able to explore such multilayer networks. MultiXrank outputs scores reflecting the proximity between an initial set of seed node(s) and all the other nodes in the multilayer network. In this talk, I will illustrate the versatility of MultiXrank for performing various bioinformatic tasks, from node prioritisation to link prediction and beyond.

Short Bio:

Galadriel Brière holds a PhD in Computer Science from the University of Bordeaux, obtained in November 2022. Her research, conducted at LaBRI and NutriNeuro, focused on omics data integration for studying complex diseases. Since December 2022, she's been a postdoctoral researcher at the Institute of Mathematics of Marseille and Marseille Medical Genetics, working on analyzing biological networks and knowledge graphs within the teams of Élisabeth Rémy and Anaïs Baudot.

Speakers

Speaker: Galadriel Brière. Postdoctoral researcher at the Institute of Mathematics of Marseille and Marseille Medical Genetics.
Host: Alfonso Valencia, Life Sciences Department Director, BSC.
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