04
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Salle de formation du PRABI

SÉMINAIRE

Multimodal data integration for rare genetic diseases

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Recent technological advances and the growing availability of biomedical datasets offer unprecedented opportunities to better understand human diseases. However, translating the sheer volume and heterogeneity of these data into meaningful insights require proper computational strategies. In this talk, I will present different approaches for the integration of heterogeneous datasets. I will describe multilayer networks that incorporate different sources of biomedical interactions, as well as associated network exploration algorithms. I will also mention joint dimensionality reduction to extract biological knowledge simultaneously from multiple omics or modalities. I will illustrate the application of these different algorithms in the context of the analysis of rare genetic diseases, which raise various challenges: many patients are undiagnosed, phenotypes can be highly heterogeneous, and only a few treatments exist.