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Bridging AI and biomedicine: Towards AI-driven scientific discoveries

Monday 25 September 2023 11:45 (45 minutes)

Biomedical data poses multiple hard challenges that break conventional machine learning assumptions. In this talk, I will highlight the need to transcend our prevalent machine learning paradigm and methods to enable them to become the driving force of new scientific discoveries. I will present machine learning methods that have the ability to bridge heterogeneity of individual biological datasets by transferring knowledge across datasets with a unique ability to discover novel, previously uncharacterized phenomena. I will discuss the findings and impact these methods have for annotating comprehensive single-cell atlas datasets and discovery of novel cell types.

The papers my talk was mostly based on are:

<https://www.nature.com/articles/s41592-020-00979-3>

<https://www.nature.com/articles/s41592-022-01651-8>

<https://arxiv.org/pdf/2102.03526.pdf>

<https://www.biorxiv.org/content/10.1101/2023.02.03.526939v1.full.pdf>

Presenter: BRBIC, Maria

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