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“Bridging AI and Single-cell Genomics: Towards AI-driven Discoveries”

The advancements in single-cell technologies have enabled the generation of large-scale datasets across different tissues, conditions and species, offering opportunities for defining new cell states and uncovering underlying cellular processes. In this talk, I will present machine learning methods that have the ability to bridge heterogeneity of single cell datasets by enabling analysis, annotation transfer and discovery of novel cell types across different tissues, conditions and species. I will discuss the findings and impact these methods have for annotating comprehensive single-cell atlas datasets, as well as their role in moving beyond conventional machine learning paradigms to enable new scientific discoveries.