香港浸會大學
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DEPARTMENT OF
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SEMINAR

2025 SERIES

Domain Identification, Integration, and 3D Reconstruction with Spatial Transcriptomics Data

DATE & TIME

2 MAY 2025 (FRI) 2:30 - 3:30 PM

VENUE

DLB111, 1/F, DAVID C.LAM BUILDING, SHAW CAMPUS

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ABSTRACT

Recent advances in spatial transcriptomics (ST) have created a growing need to integrate multiple tissue slices for joint analysis. A key challenge is generating interpretable embeddings that preserve both gene expression and spatial structure for downstream applications. In this talk, I will introduce MaskGraphene, a novel graph neural network that integrates spatial and transcriptomic features using self-supervised and self-contrastive learning. Through cluster-wise local alignment and a graph attention autoencoder optimized with masked self-supervised and triplet loss, MaskGraphene generates joint embeddings that maintain spatial geometry while correcting for batch effects. This framework offers a powerful and interpretable solution for integrating multi-slice, multi-condition spatial transcriptomics data.

SPEAKER'S BIOGRAPHY

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