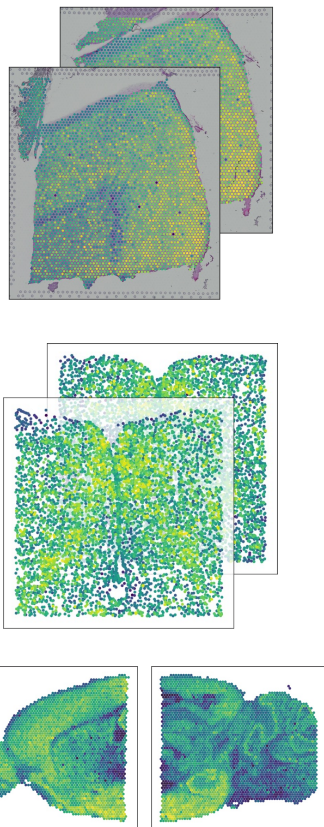Input data

Preprocess

spots

genes

Spatial location

Consecutive slice
Connection (adjacent on z-axis)

Hard links

Soft links
(Triplets)

Non-consecutive slice
connection

Use MNN
for triplets

Soft links
(Triplets)

SCE Loss

1	6	2
2	1	4
6	2	2

0	6	0
2	1	4
6	0	2

1	6	5
2	1	4
6	3	2

mask   infer
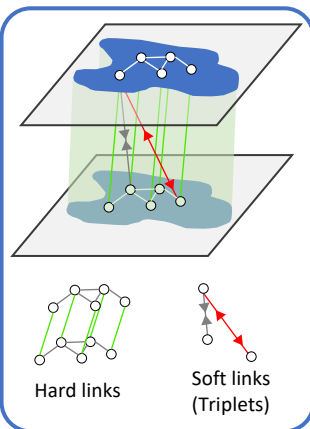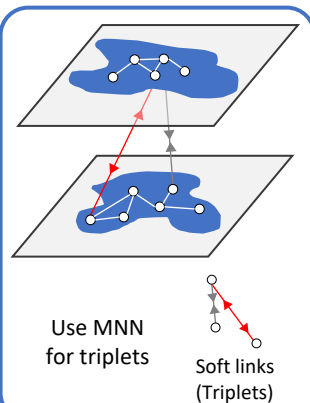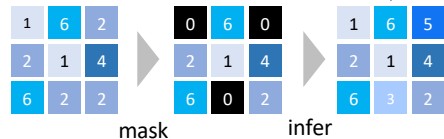
Masked Graph Auto-encoder

attention

Triplet1

Triplet2

Triplet Loss

UMAP2

UMAP1

y

x

1
2
3
4
5
6
7
8

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30