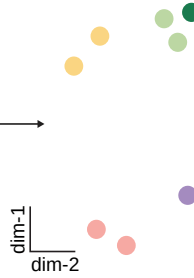
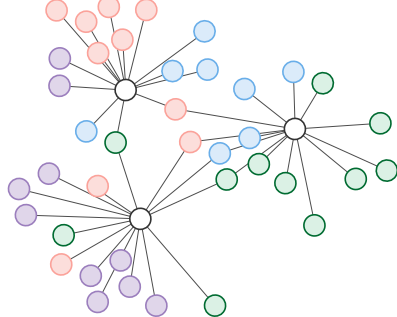


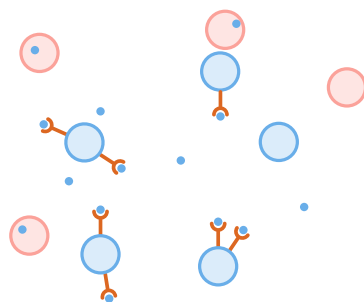
Dimensionality reduction



Label projection



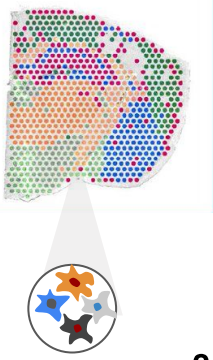
Cell-cell communication



B

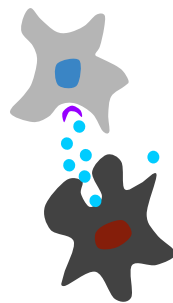
1. Prepare Datasets

I) Source-Target subtask



Source	Target	Truth
		1
		1
		0
		1
		0
...

II) Ligand-Target subtask



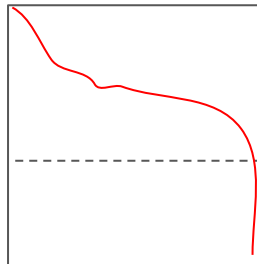
Ligand	Target	Truth
TGF- β 1		1
IL-10		1
BMP6		0
IL-10		1
TGF- β 1		0
...

2. Run Methods

Ligand	Receptor	Source	Target	Score
TGF- β 1	TGF β R1			1
IL-10	IL-10R			0.99
BMP6	ALK2			0.98
IL-10	IL-10R			0.96
...

3. Calculate Metrics

AUPRC



Odds

$$f\left(\frac{\text{Odds}}{\text{Odds}}\right)$$

C

Overall	Ligand-Target	Source-Target
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Name	Mean score	TNBC atlas	AUPRC	Odds Ratio	Mouse brain atlas	AUPRC	Odds Ratio
CellPhoneDB (max)							
Magnitude Rank Aggregate (max)							
Log2FC (sum)							
Specificity Rank Aggregate (max)							
SingleCellSignalR (max)							
Log2FC (max)							
Connectome (sum)							
NATMI (sum)							
Connectome (max)							
NATMI (max)							
Magnitude Rank Aggregate (sum)							
CellPhoneDB (sum)							
Specificity Rank Aggregate (sum)							
SingleCellSignalR (sum)							

Rank



N

1

Score



min

max

Aggregation type

- Overall
- Per dataset
- Per metric