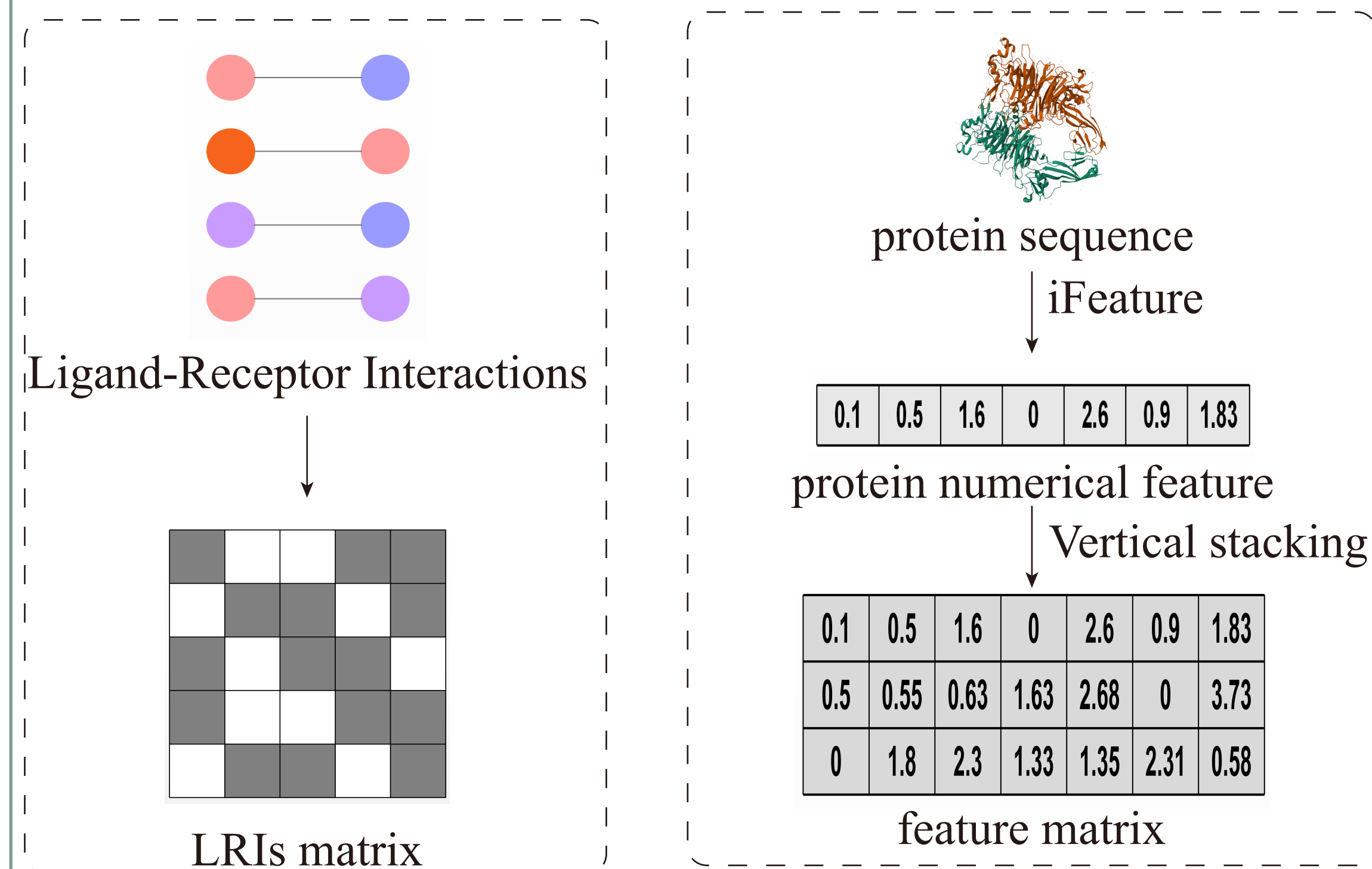
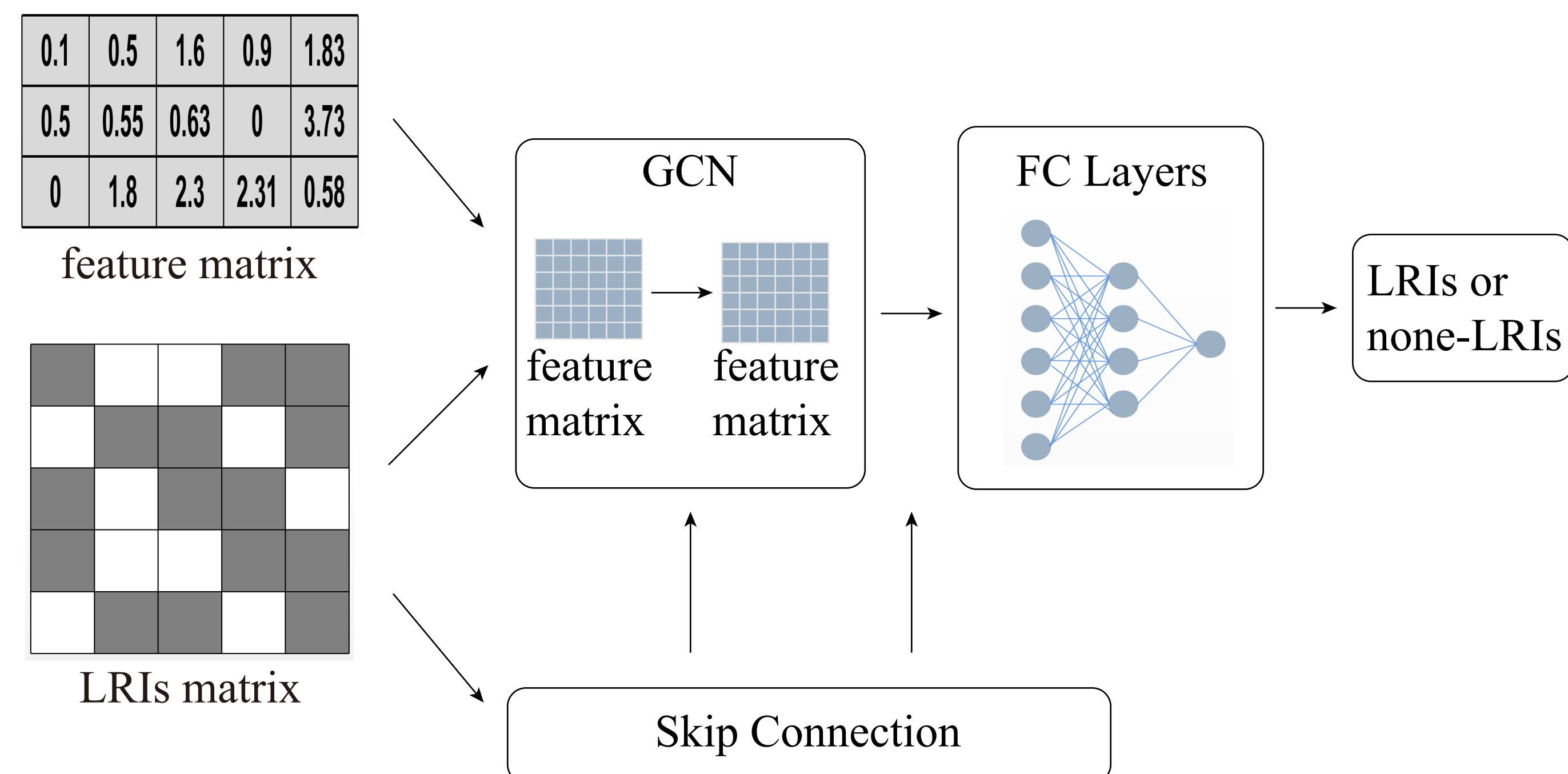


a

## Data Processing

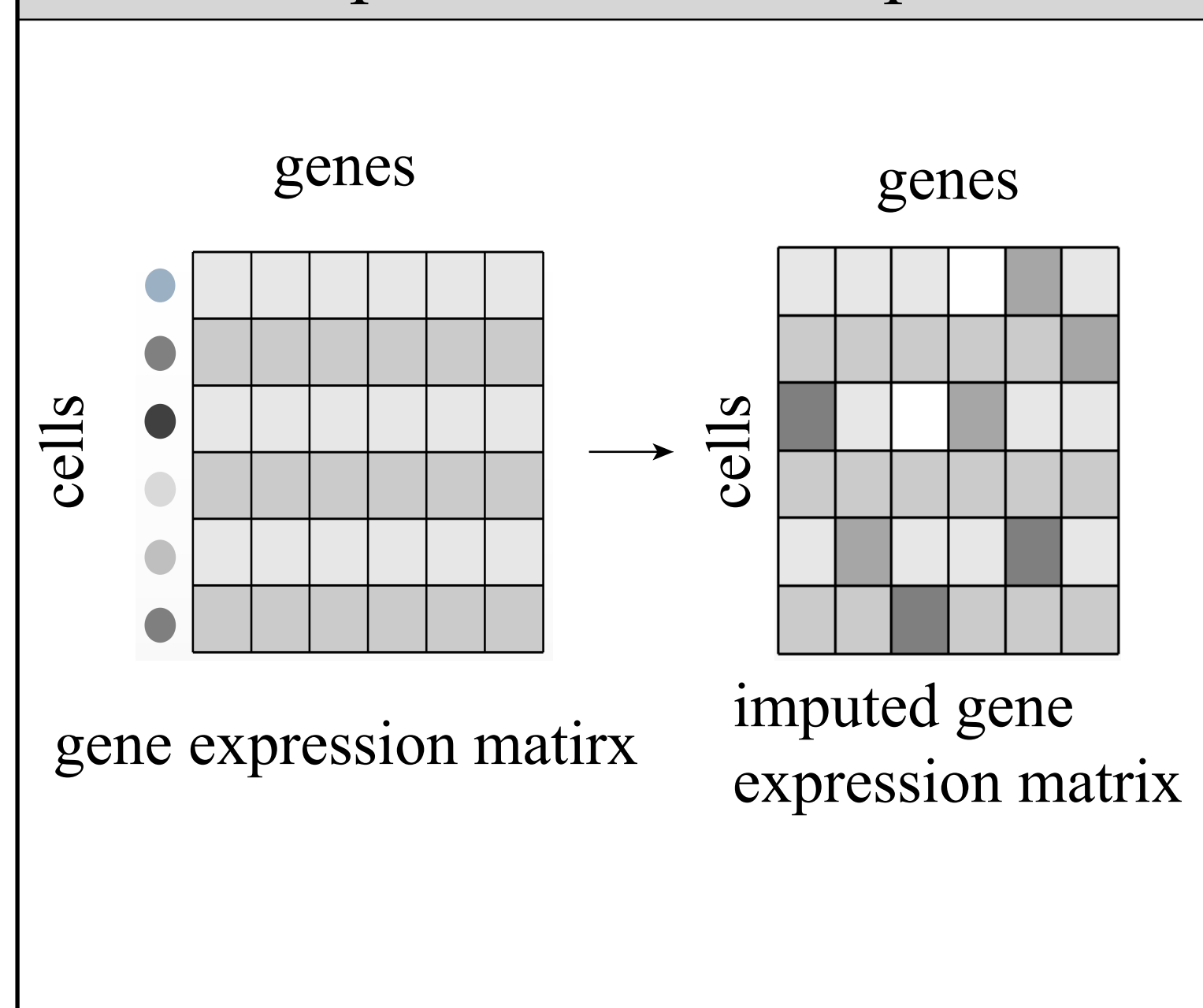


## Ligand-Receptor Interactions Prediction

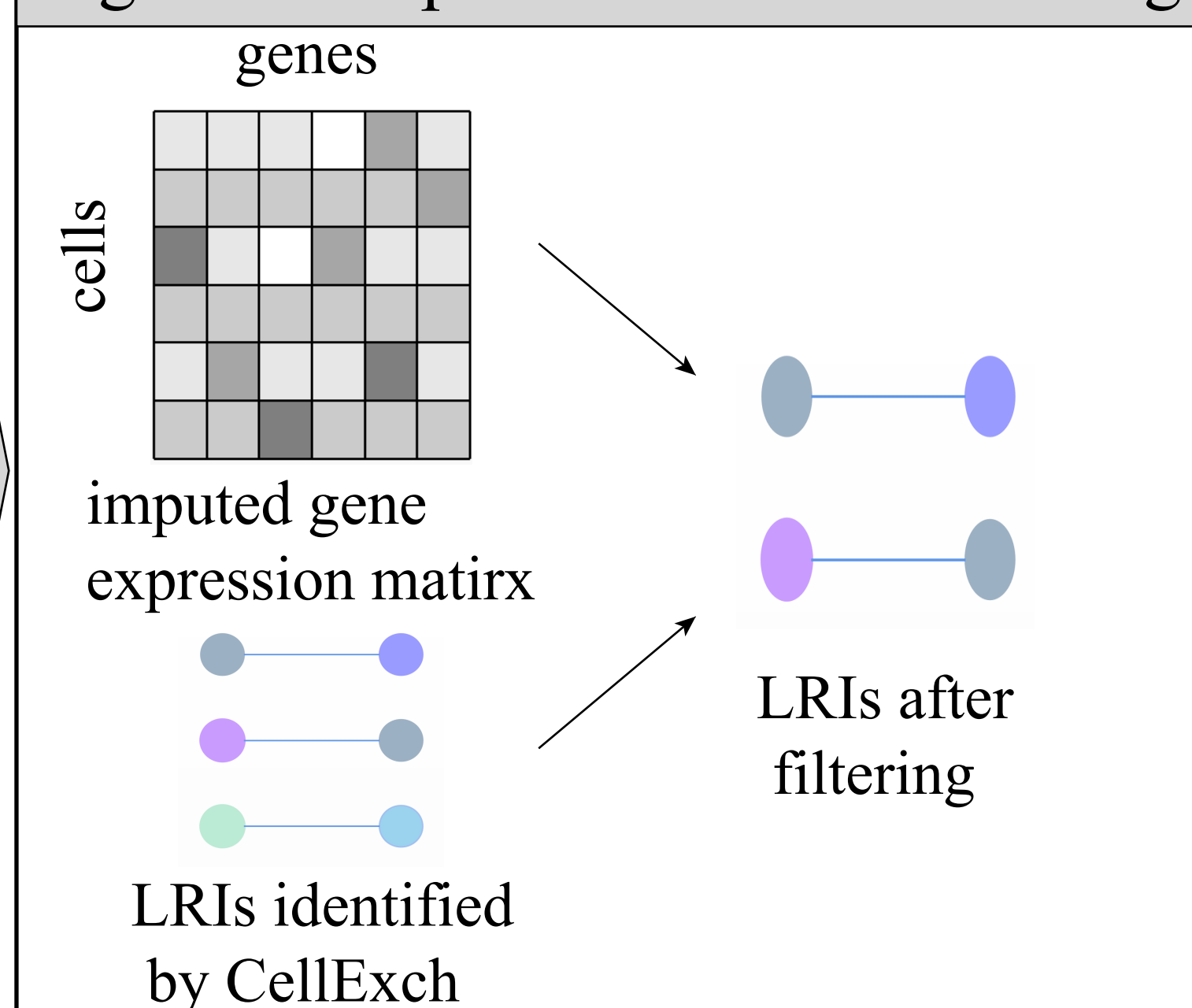


b

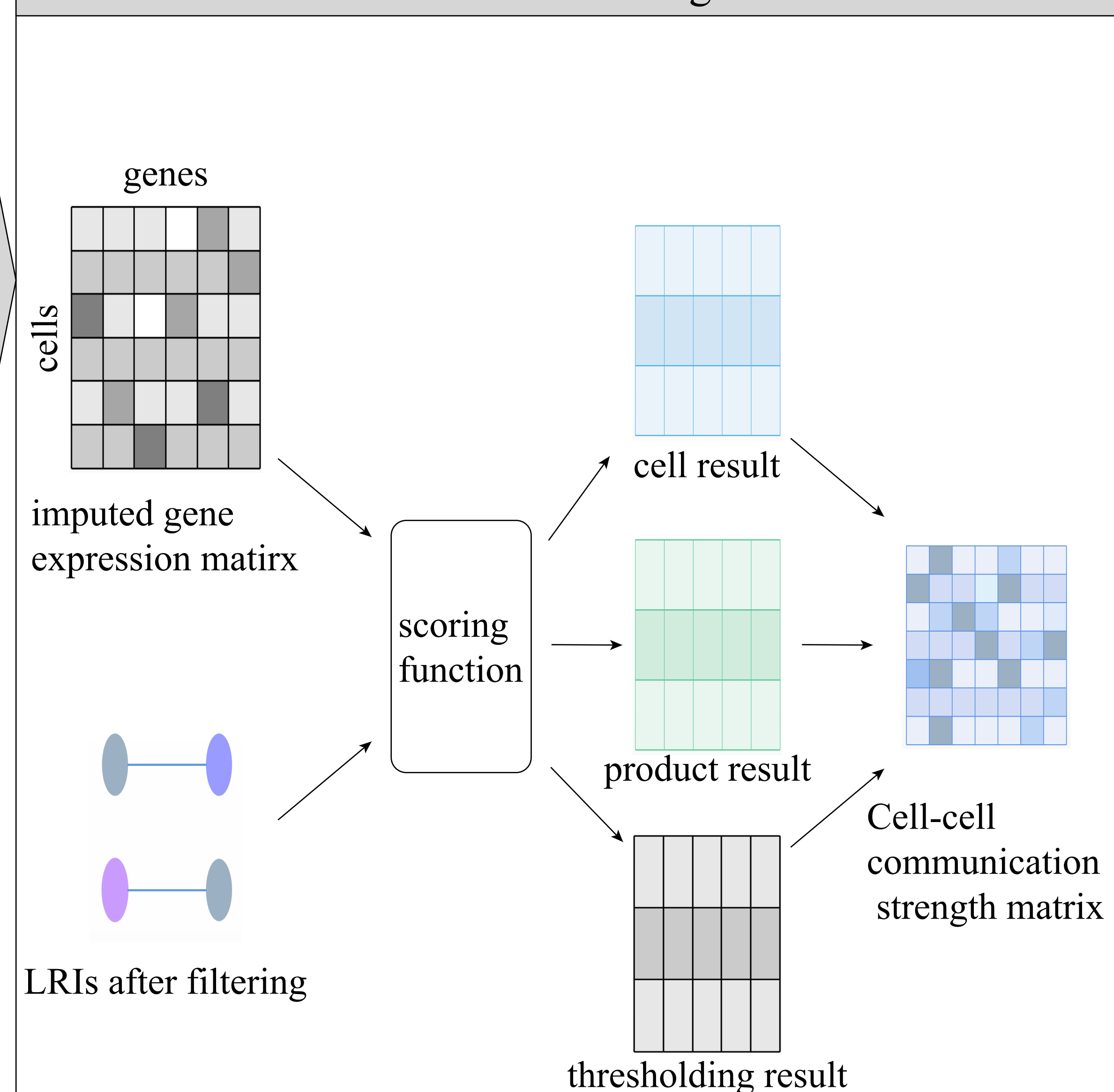
## Gene expression value imputation



## Ligand-Receptor Interactions filtering



## Cell-cell communication strength measurement



c

## Cell-cell communication visualization

