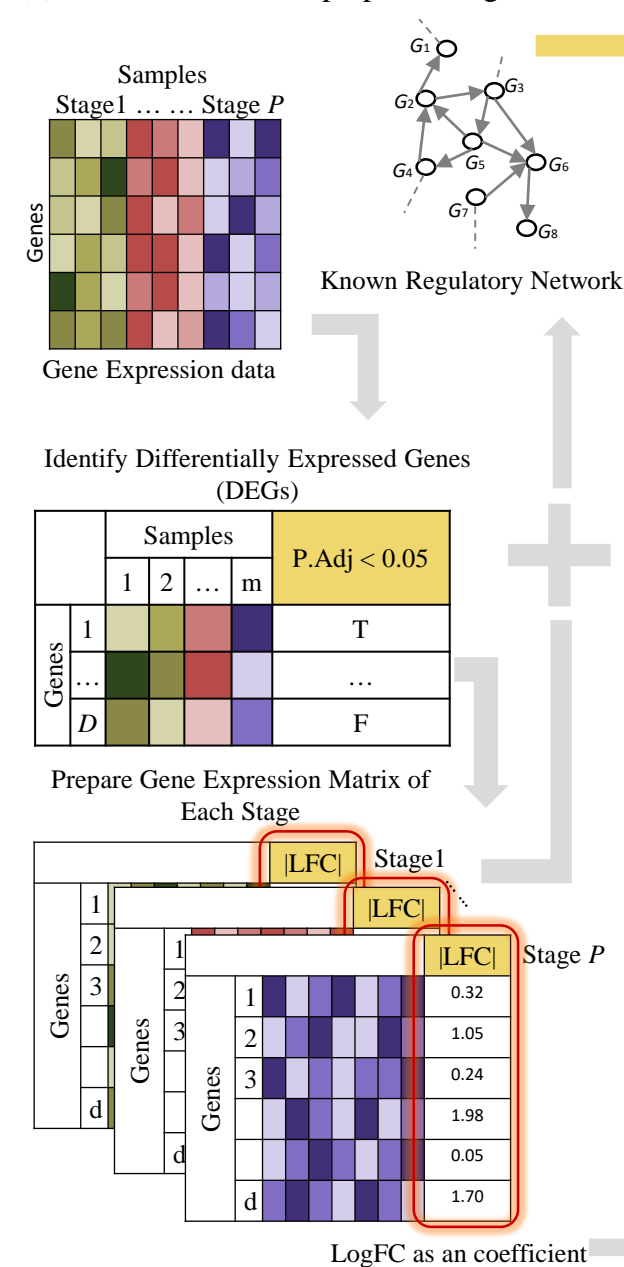


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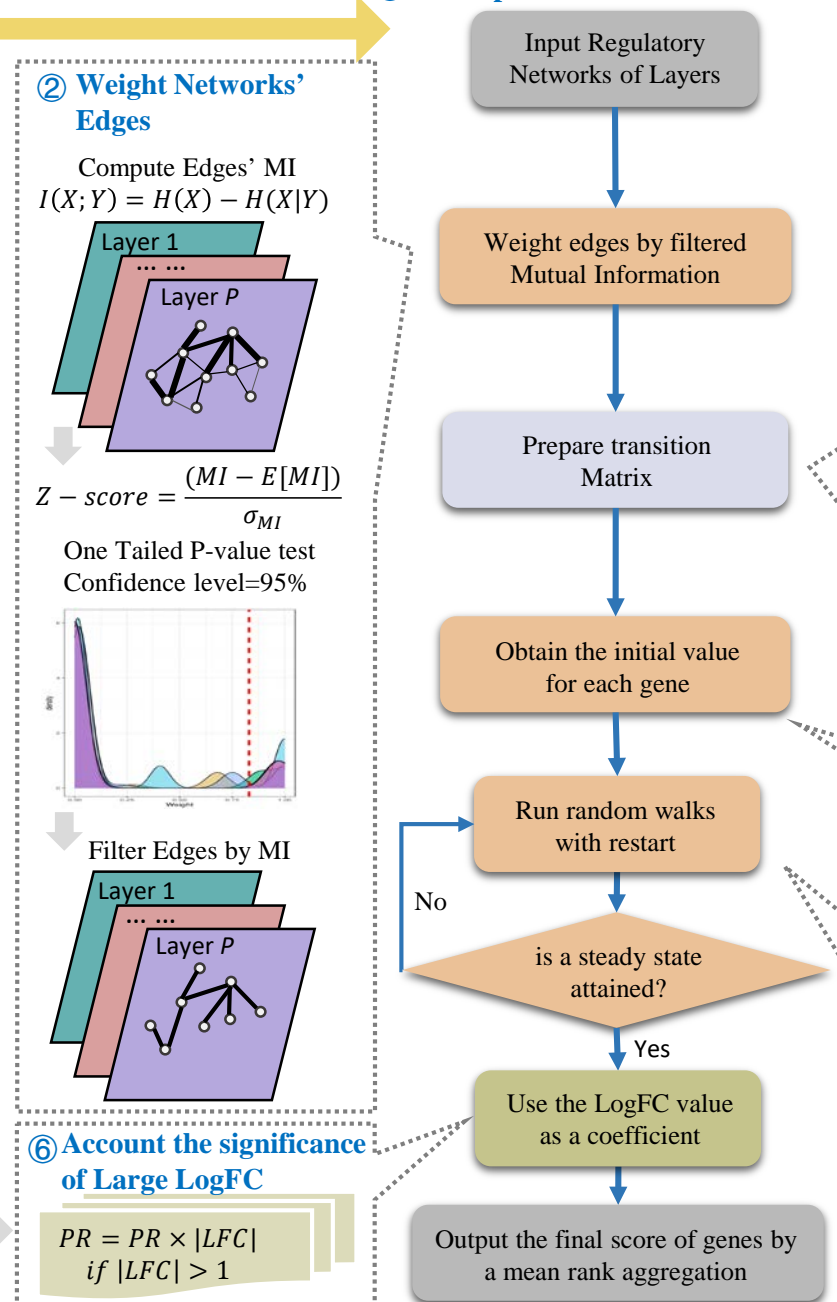
### (a) Data collection and preprocessing



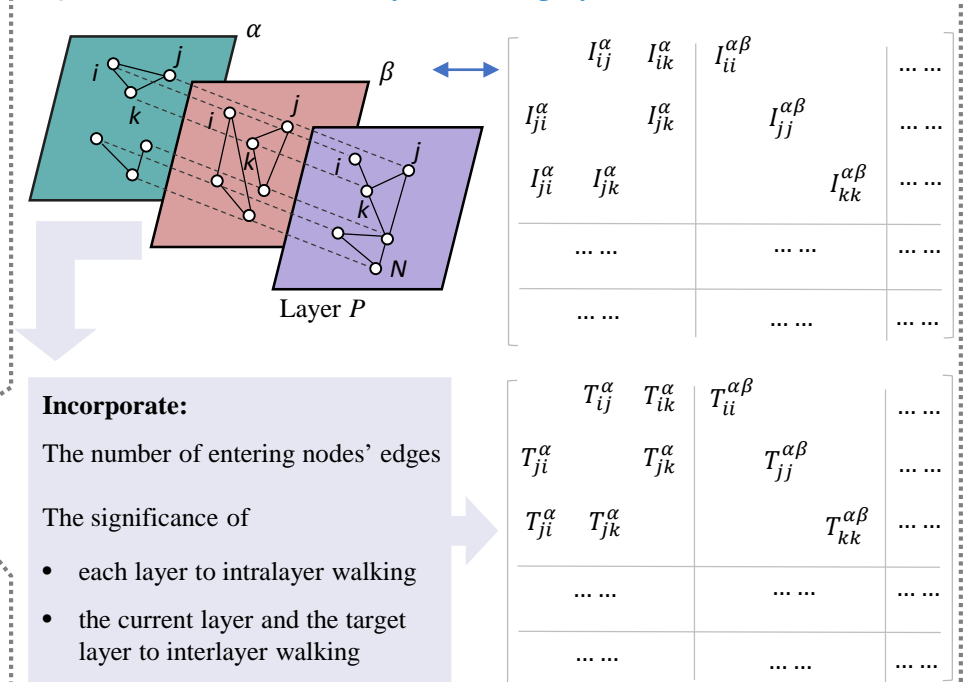
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### (b) Genes Prioritization

### ① Main procedure of NetWalkRank



### ③ Made transition matrix by considering layers' influence



#### ④ Determine level of nodes influence

Initial value of genes =  $1/ng$   
 $ng$  = The number of genes in that layer

⑤ Assign the value of each gene by PageRank approach

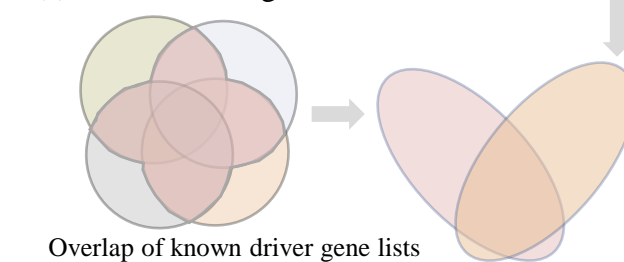
Iterative execution of random walks with restart until a stable equilibrium is attained

## ⑥ Account the significance of Large LogFC

$$PR = PR \times |LFC|$$

*if*  $|LFC| > 1$

### (c) Cancer driver genes validation



Gene	Expression Level (approx.)
Gene 1	100
Gene 2	75
Gene ...	60
Gene d	90

Assign ranks in descending order of gene values

### Functional enrichment analysis

### Internal and External validation