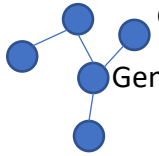
Normalized Expression Matrix

	Cell1	Cell2	Cell3	Cell4
Gene1	0.5	0.1	0.4	0
Gene2	1.2	0	3.2	1.1
Gene3	0	0.1	0.5	…

Gene Network

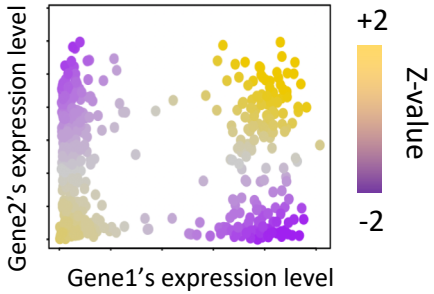


$$Z = \frac{\Delta PCC_n}{(1 - PCC_n{}^2)/(n-1)}$$

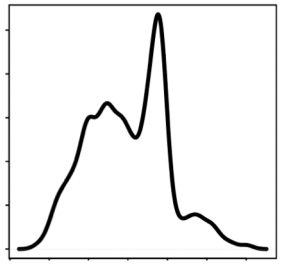
Z-value Matrix

	Cell1	Cell2	Cell3
Gene1.And.Gene2	-0.5	NA	-1.2
Gene1.And.Gene3	NA	0.6	0.8
…	NA	NA	…

Expression & Z-value

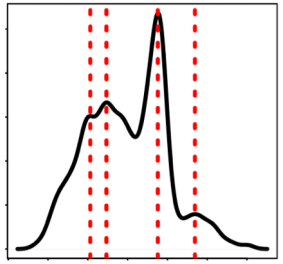


Gene1.And.Gene2 Z-value Distribution

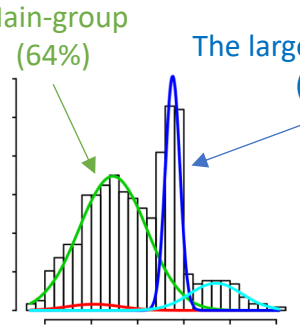


Detect peaks

Peaks

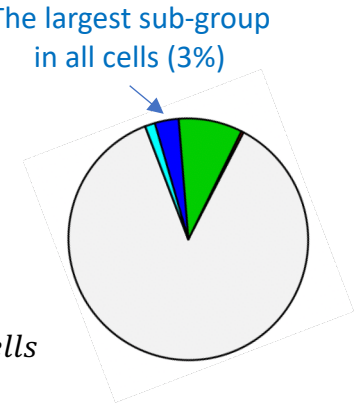


Analyze mixture of models

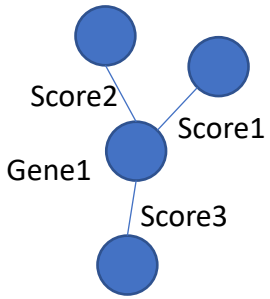


Calculate score

$$Score = \frac{The\ proportion\ of\ the\ largest\ sub\ group\ in\ all\ cells}{}$$



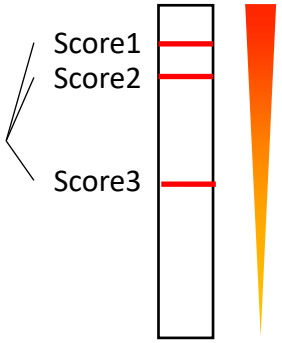
Gene Network



Rank scores

Gene1

All scores



One-side K-S test

Gene1's Pvalue

Process each gene

Generate report