Toward discovering structure in gene expression across properties

MDI-Barn Raising

Lisa, Harriet, Dave, Yuan, Oliver

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1 Simulate Properties across Species

Assume there are K properties and N species. For each property P_i, the species can be classified into $n = 3$ groups each with uniform distribution in a specific range in $[mi, ma] \subset [0, 1]$.

	P_1	P_2	...	P_K
S_1	2	0	...	2
S_2	1	2	...	2
...	...	...	...	...
S_N	0	0	...	0

Table 1: Group assignment table for each species in different properties

Then, the level of properties expressed are uniformly generated according to their group assignment and the range of values associated to group.

	P_1	P_2	...	P_K
S_1	0.267215	0.651385	...	0.158657
S_2	0.704073	0.921734	...	0.115507
...	...	...	...	...
S_N	0.213306	0.921756	...	0.141708

Table 2: Simulated property levels for each specie.

2 Create maps from properties to gene expression level