

# Supplementary 6 - Comparison with other methods

March 31, 2020

## 1 1. Load results from SCENIC

Regulons in SCENIC:

```
Index(['Atf1', 'Atf4', 'Atf6', 'Bach1', 'Bcl3', 'Bcl6', 'Bhlhe40', 'Cebpa',
       'Cebpb', 'Cebpd', 'Cebpg', 'Clock', 'Creb3l2', 'Crem', 'Ctcf', 'Cux1',
       'Cux2', 'Dbp', 'E2f1', 'Egr1', 'Elf1', 'Elk4', 'Ets2', 'Foxa1', 'Foxa3',
       'Foxn3', 'Foxo1', 'Foxo3', 'Foxq1', 'Gabpa', 'Hes1', 'Hif1a', 'Hnf4a',
       'Hsf2', 'Irf2', 'Irf3', 'Irf6', 'Irf7', 'Jun', 'Junb', 'Jund', 'Klf10',
       'Klf13', 'Klf3', 'Klf9', 'Maf', 'Mafb', 'Mafg', 'Maz', 'Mef2a', 'Mlx',
       'Mxd4', 'Mxi1', 'Nfe2l1', 'Nfic', 'Nfyb', 'Nr1d1', 'Nr1h3', 'Nr1h4',
       'Nr1i2', 'Nr2f2', 'Nr2f6', 'Nr3c1', 'Ppara', 'Rara', 'Rcor1', 'Rela',
       'Rest', 'Rreb1', 'Rxra', 'Smad1', 'Sox5', 'Sox9', 'Sp1', 'Srebf1',
       'Srebf2', 'Stat1', 'Stat2', 'Stat6', 'Tcf7l2', 'Tef', 'Tfdp1', 'Tfe3',
       'Ubtf', 'Usf2', 'Xbp1', 'Ybx1', 'Yy1', 'Zbtb7a', 'Zbtb7b'],
      dtype='object')
```

AUC matrix in SCENIC:

	Atf1	Atf4	Atf6	Bach1	Bcl3	\
Cell						
Adult_AAACCCAAGATGCTGG	0.015914	0.003589	0.036202	0.038904	0.0	
Adult_AAAGGTATCTTGAACG	0.036005	0.014320	0.015611	0.036166	0.0	
Adult_AAAGTCCAGGGCCAAT	0.013844	0.000000	0.000023	0.018595	0.0	
Adult_AACACACTCCCCAAAT	0.030643	0.021458	0.040937	0.028784	0.0	
Adult_AACACACTCCCGATG	0.019096	0.030892	0.047404	0.054483	0.0	
...	...	...	...	...	...	
PN14_TTGCTGCAGAGCCGTA	0.034295	0.005938	0.003839	0.009486	0.0	
PN14_TTGCTGCCAGGTCCGT	0.013167	0.000638	0.009441	0.021620	0.0	
PN14_TTTACGTCAGCGCAC	0.019489	0.031366	0.000221	0.028217	0.0	
PN14_TTTATGCAGACCCGCT	0.022469	0.010048	0.001303	0.028117	0.0	
PN14_TTTGATCGTGACCTGC	0.015770	0.003557	0.008553	0.010910	0.0	
	Bcl6	Bhlhe40	Cebpa	Cebpb	Cebpd	\
Cell						
Adult_AAACCCAAGATGCTGG	0.000000	0.031781	0.117627	0.132845	0.004461	...
Adult_AAAGGTATCTTGAACG	0.000000	0.038724	0.128748	0.130359	0.005152	...
Adult_AAAGTCCAGGGCCAAT	0.017598	0.010058	0.092899	0.188526	0.021849	...

Adult_AACACACTCCCGAAAT	0.063311	0.034839	0.127496	0.100023	0.014108	...
Adult_AACACACTCCGCGATG	0.077379	0.024606	0.109928	0.122860	0.032169	...
...	...	...	...	...	...	...
PN14_TTGCTGCAGAGCCGTA	0.000000	0.011643	0.032177	0.186834	0.105454	...
PN14_TTGCTGCCAGGTCCGT	0.000000	0.010865	0.083897	0.169703	0.013499	...
PN14_TTTACGTTCAGCGCAC	0.000000	0.011006	0.073755	0.175129	0.029753	...
PN14_TTTATGCAGACCCGCT	0.000000	0.010467	0.093853	0.177873	0.013848	...
PN14_TTTGATCGTGACCTGC	0.002115	0.007303	0.070189	0.170933	0.041710	...

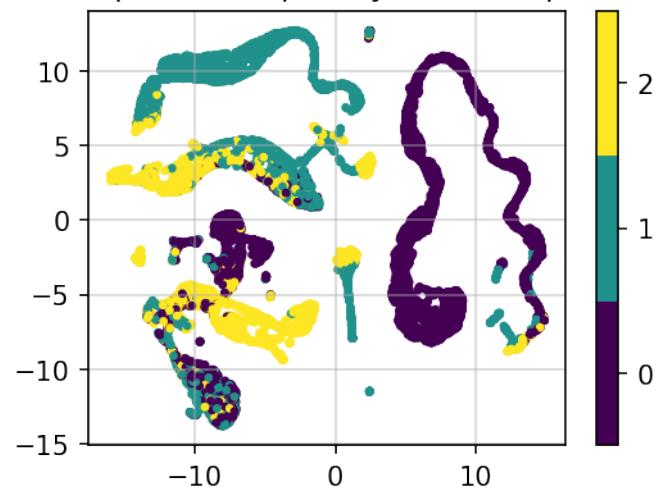
	Tef	Tfdp1	Tfe3	Ubtf	Usf2	\
Cell						
Adult_AAACCCAAGATGCTGG	0.010083	0.009211	0.021569	0.000556	0.057359	
Adult_AAAGGTATCTTGAACG	0.006466	0.007393	0.026019	0.017717	0.067906	
Adult_AAAGTCCAGGGCCAAT	0.004139	0.002878	0.018711	0.010640	0.057275	
Adult_AACACACTCCCGAAAT	0.011012	0.008799	0.027106	0.014781	0.060870	
Adult_AACACACTCCGCGATG	0.025701	0.012350	0.058543	0.014591	0.037534	
...	...	...	...	...	...	...
PN14_TTGCTGCAGAGCCGTA	0.004335	0.147914	0.014438	0.008910	0.053682	
PN14_TTGCTGCCAGGTCCGT	0.000000	0.007572	0.012328	0.006218	0.042431	
PN14_TTTACGTTCAGCGCAC	0.000000	0.009402	0.001619	0.023394	0.043414	
PN14_TTTATGCAGACCCGCT	0.007642	0.014073	0.019052	0.012223	0.076100	
PN14_TTTGATCGTGACCTGC	0.000000	0.007051	0.013727	0.026825	0.039246	

	Xbp1	Ybx1	Yy1	Zbtb7a	Zbtb7b
Cell					
Adult_AAACCCAAGATGCTGG	0.079614	0.068199	0.017991	0.004014	0.059019
Adult_AAAGGTATCTTGAACG	0.080118	0.095420	0.028167	0.014419	0.054672
Adult_AAAGTCCAGGGCCAAT	0.010182	0.125491	0.018771	0.000000	0.035872
Adult_AACACACTCCCGAAAT	0.073337	0.059226	0.023673	0.007591	0.049478
Adult_AACACACTCCGCGATG	0.053107	0.036179	0.020629	0.002234	0.067403
...	...	...	...	...	...
PN14_TTGCTGCAGAGCCGTA	0.016752	0.234273	0.036525	0.008312	0.003895
PN14_TTGCTGCCAGGTCCGT	0.023281	0.058265	0.004557	0.000517	0.013111
PN14_TTTACGTTCAGCGCAC	0.025693	0.123654	0.011462	0.009577	0.018590
PN14_TTTATGCAGACCCGCT	0.037539	0.100932	0.012878	0.000469	0.021537
PN14_TTTGATCGTGACCTGC	0.022364	0.200929	0.013152	0.000654	0.000360

[5030 rows x 90 columns]

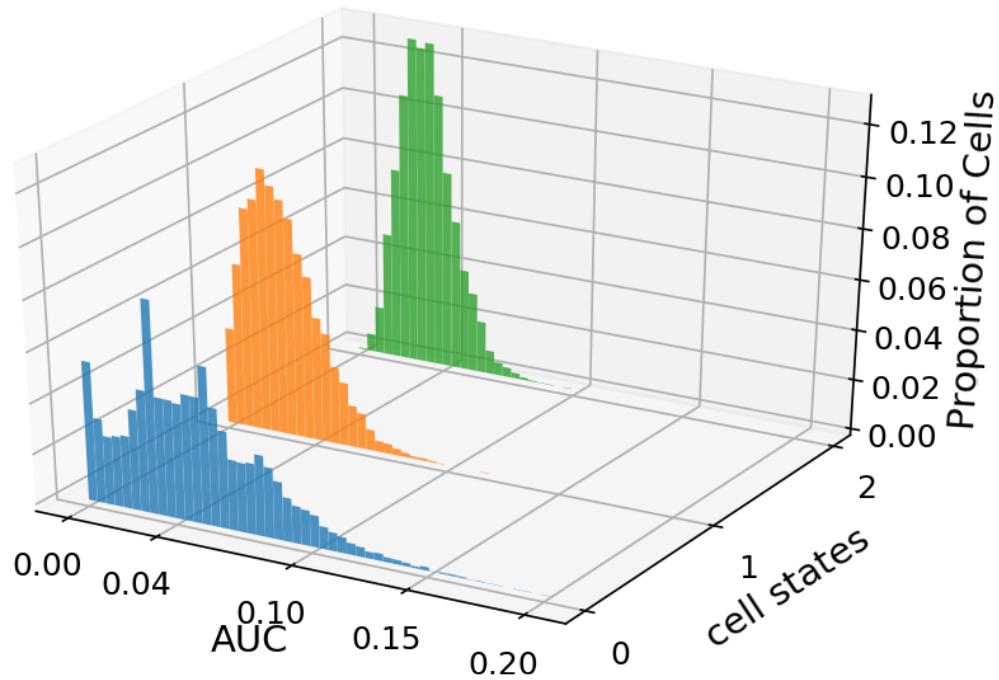
## 2 True label of hepatocyte dataset

UMAP plot for hepatocyte 3 time points

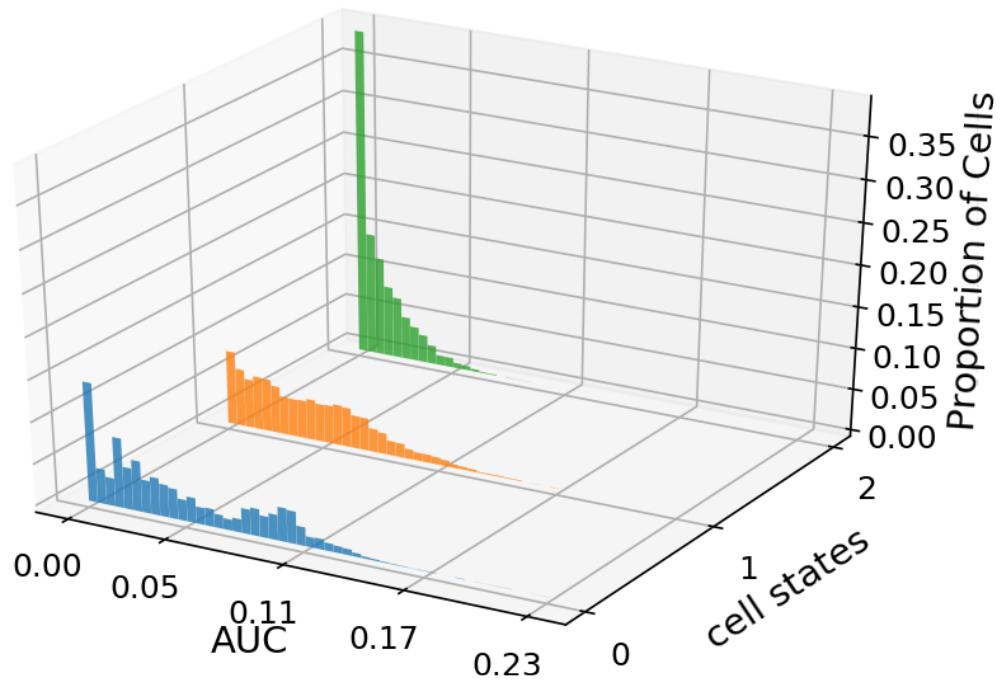


## 3 scenic all genes

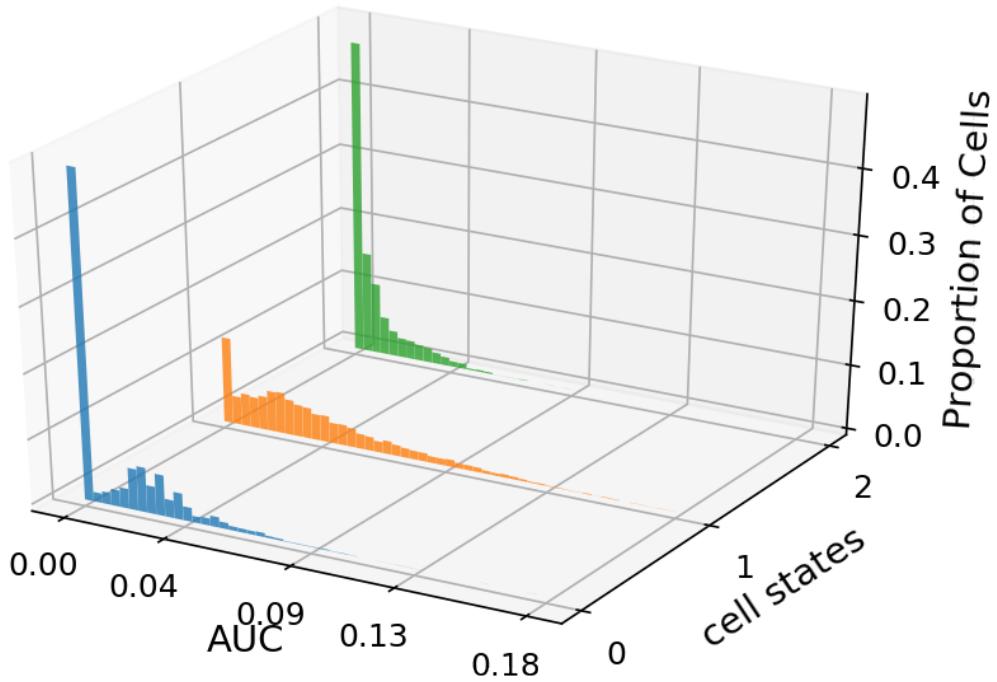
Atf1



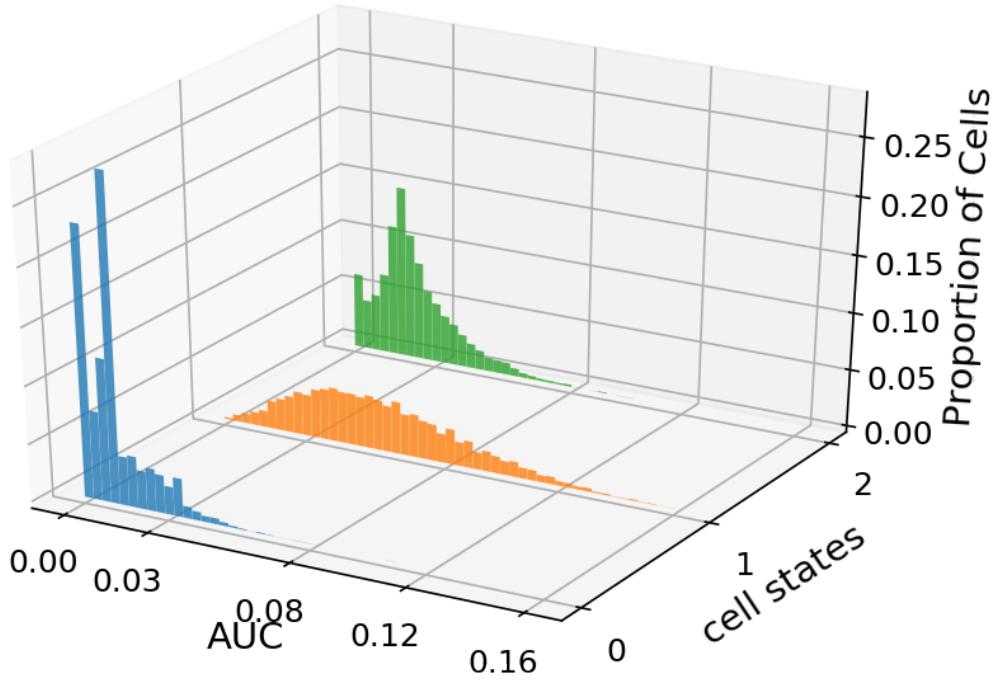
Atf4



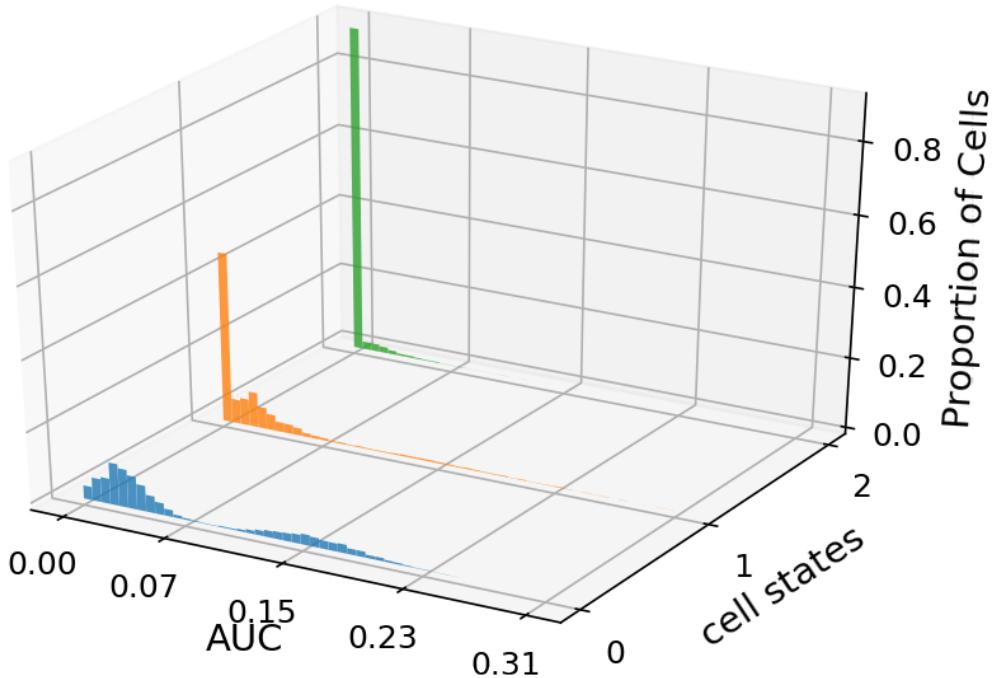
Atf6



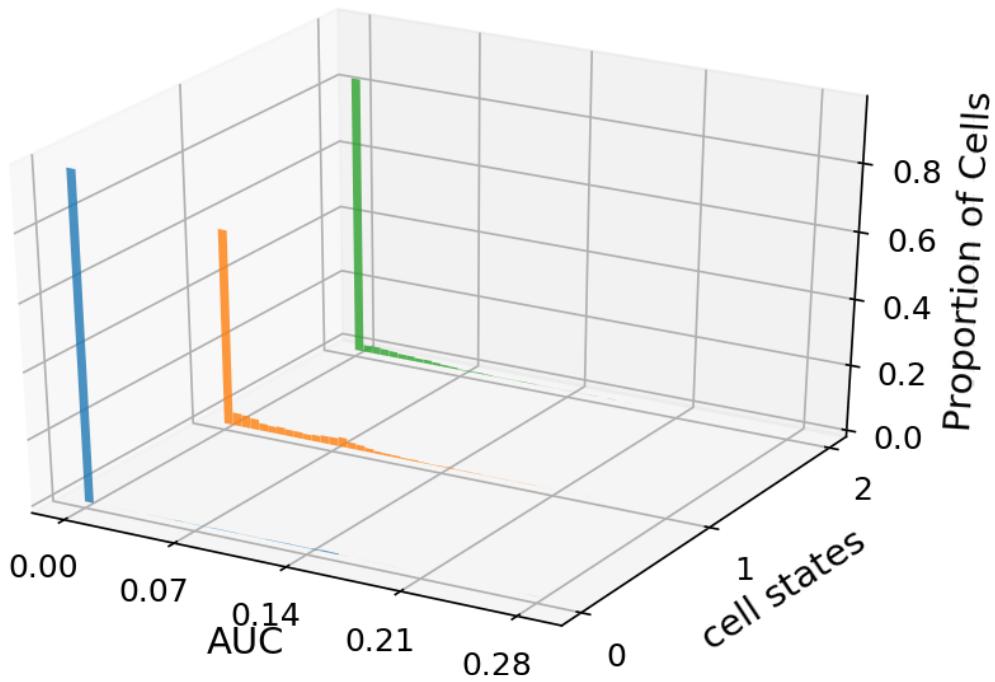
Bach1



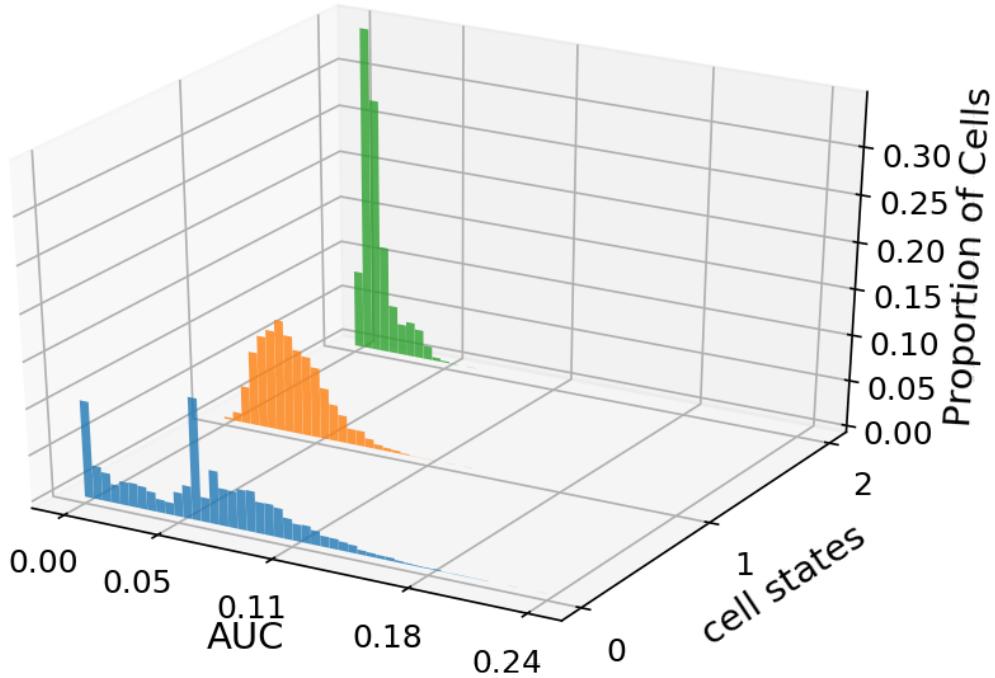
Bc13



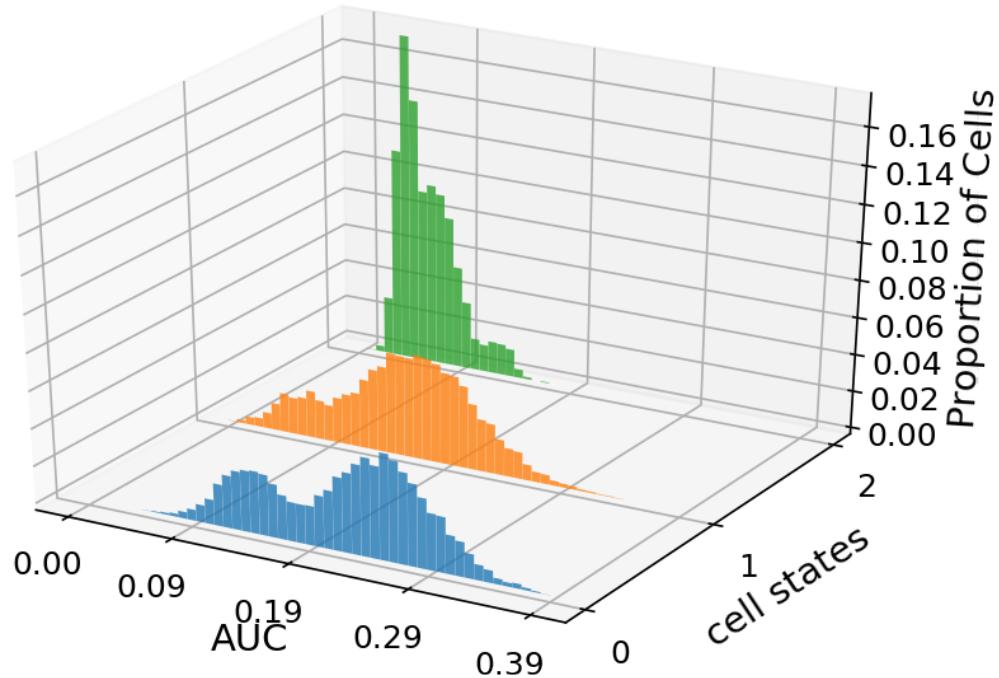
Bc16



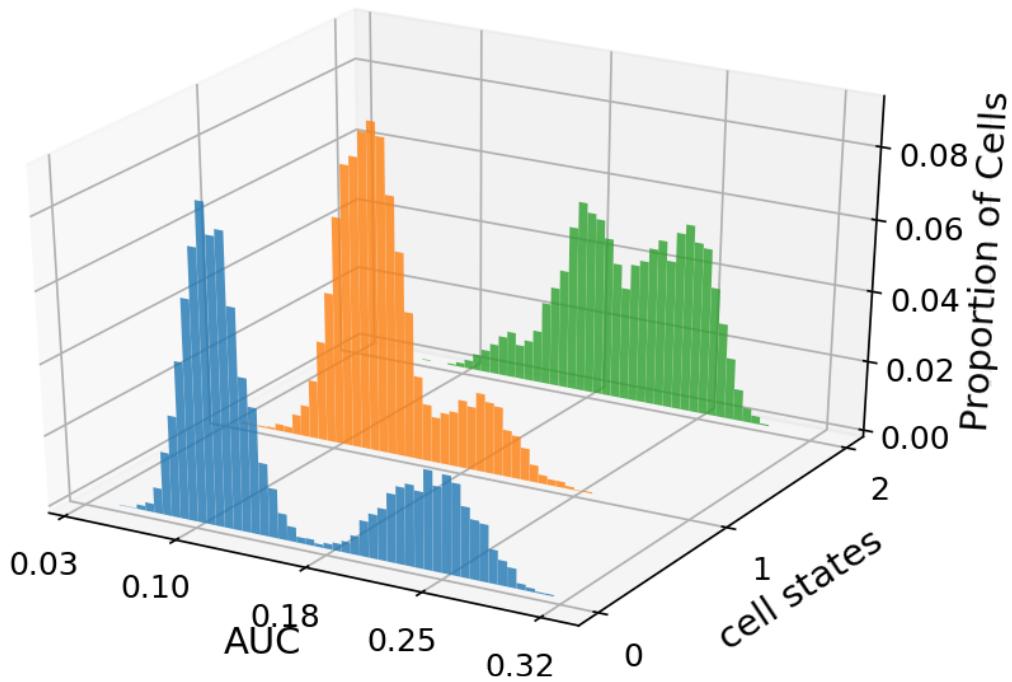
Bhlhe40



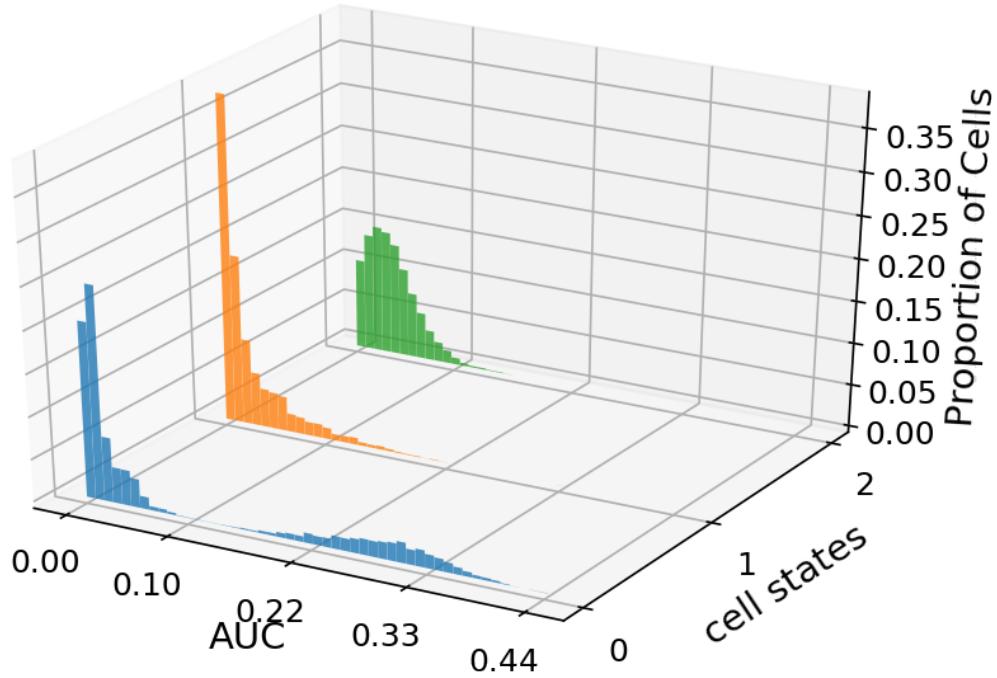
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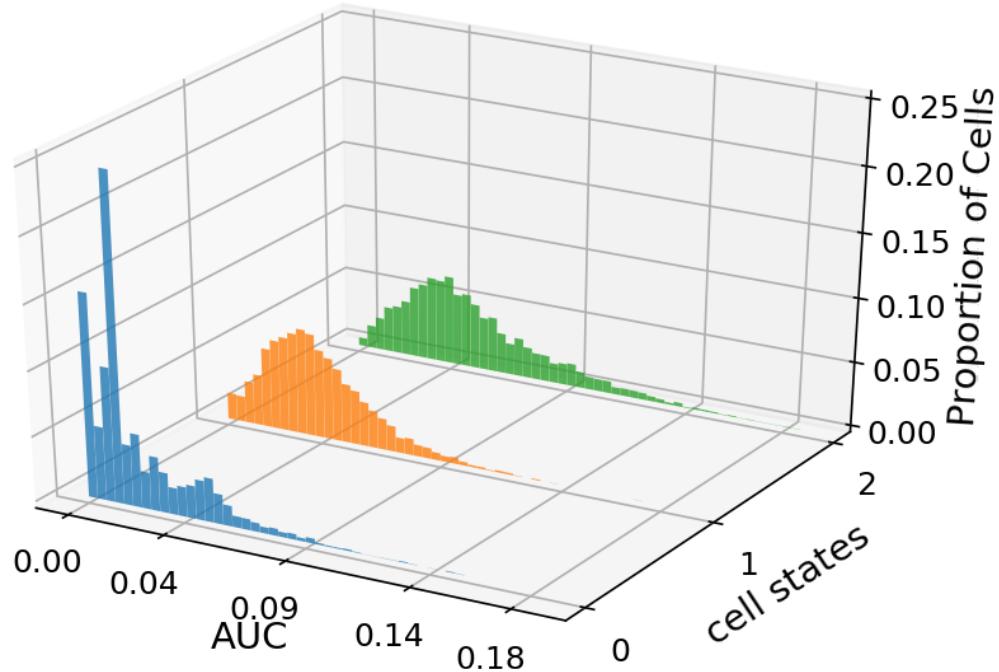
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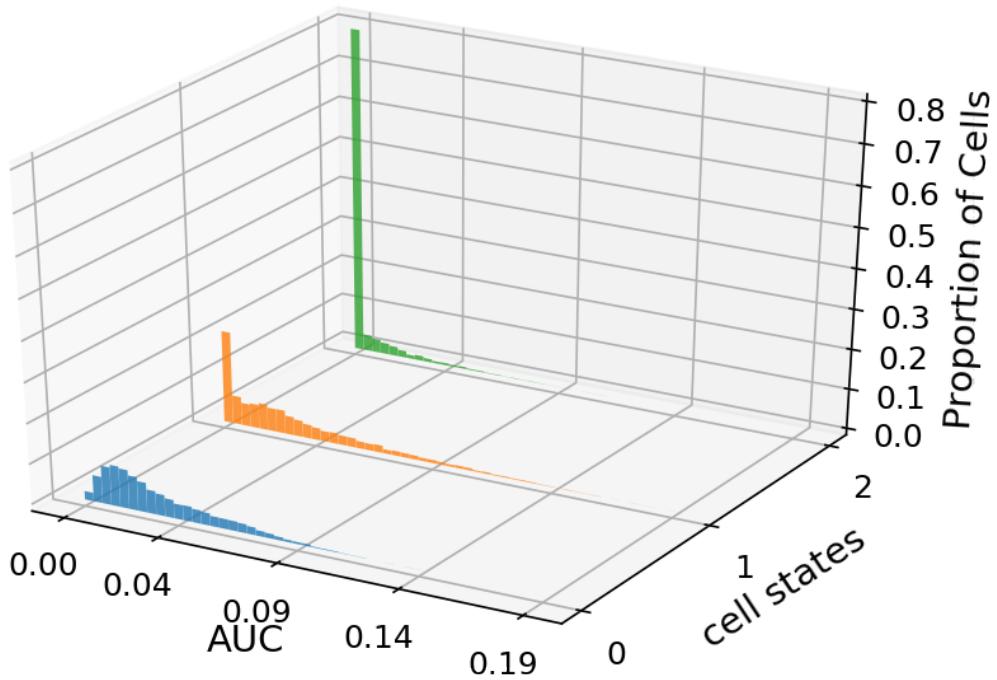
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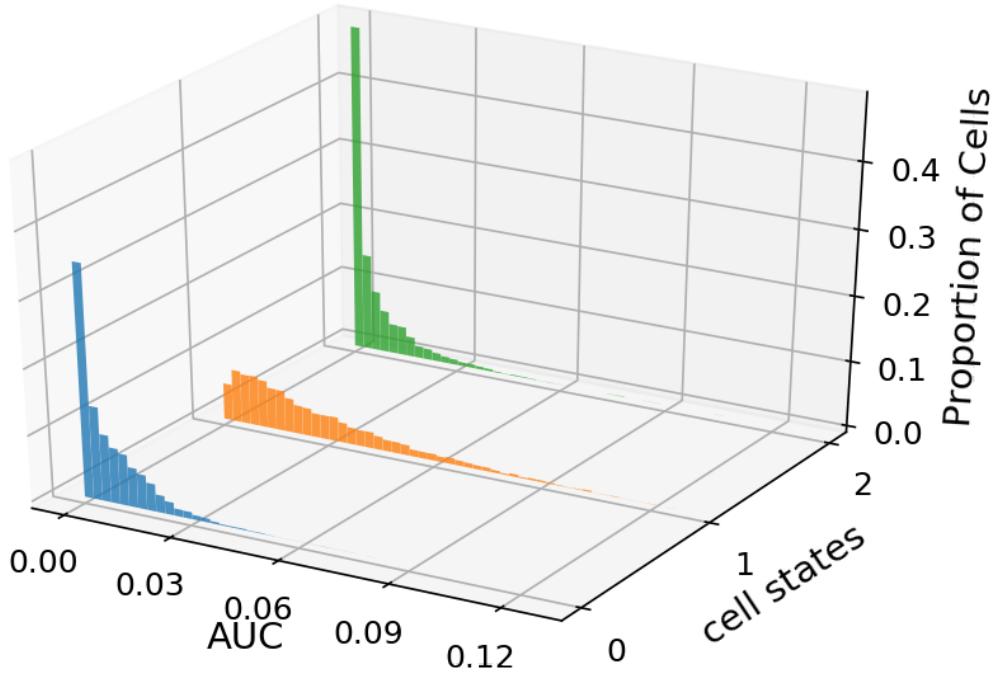
Cebpg



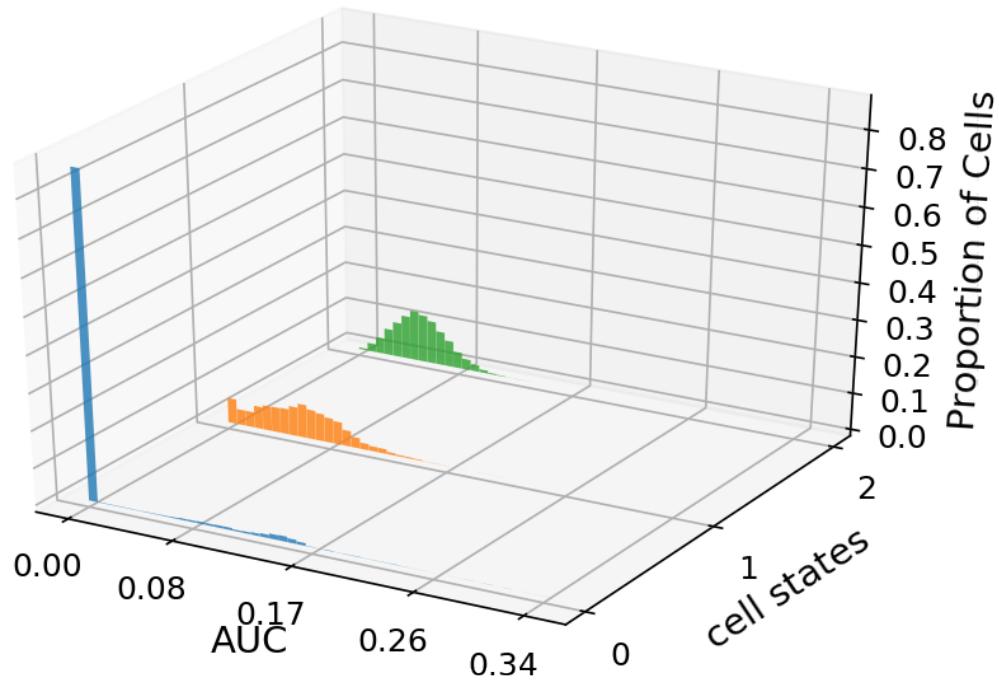
Clock



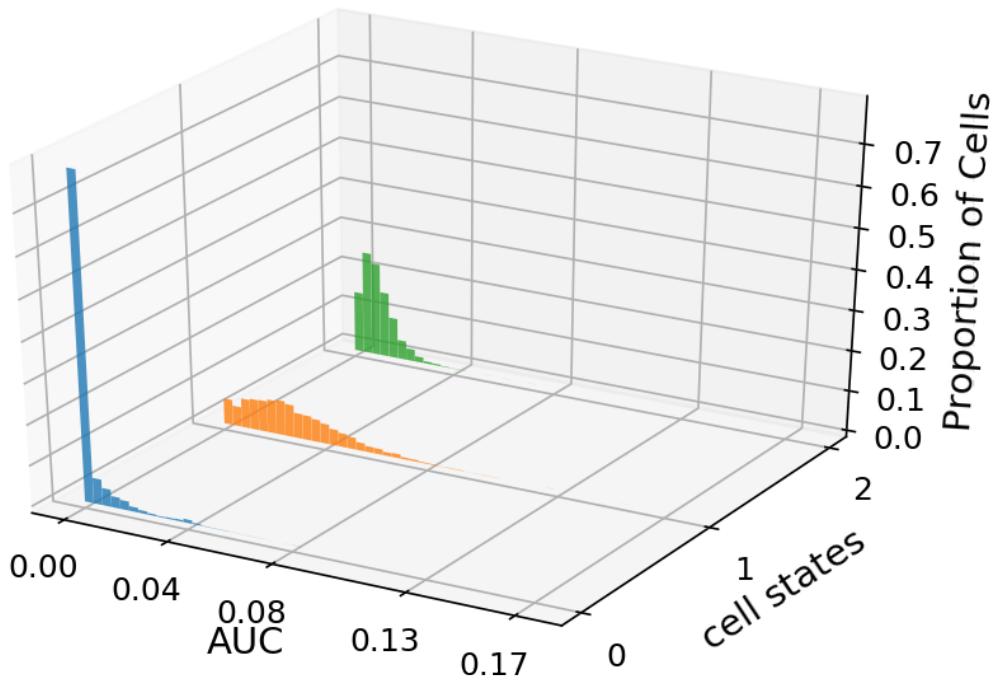
Creb3l2



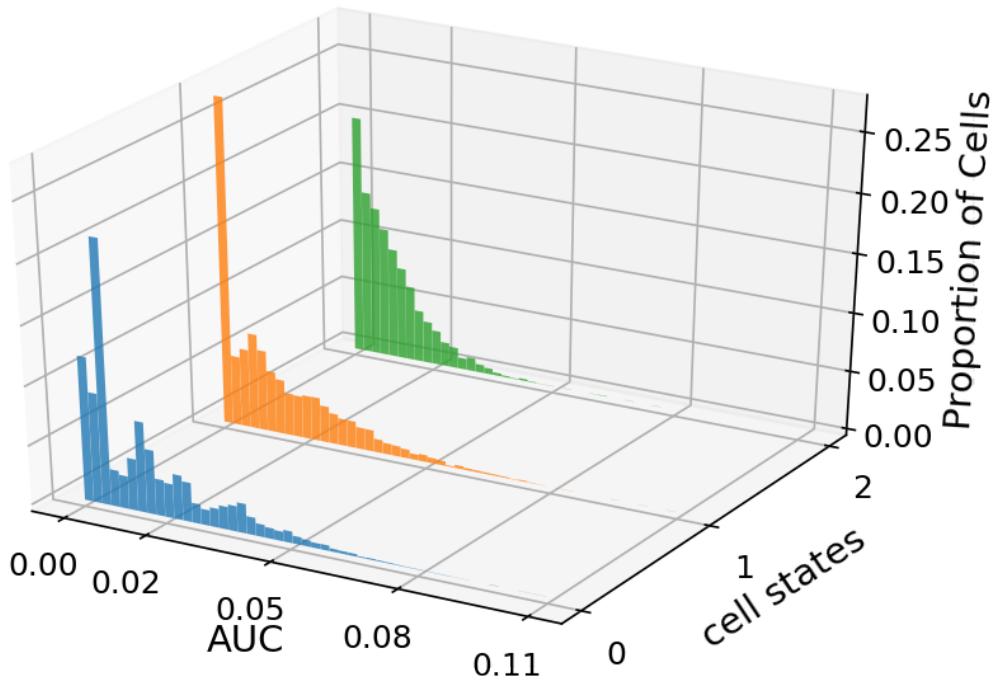
Crem



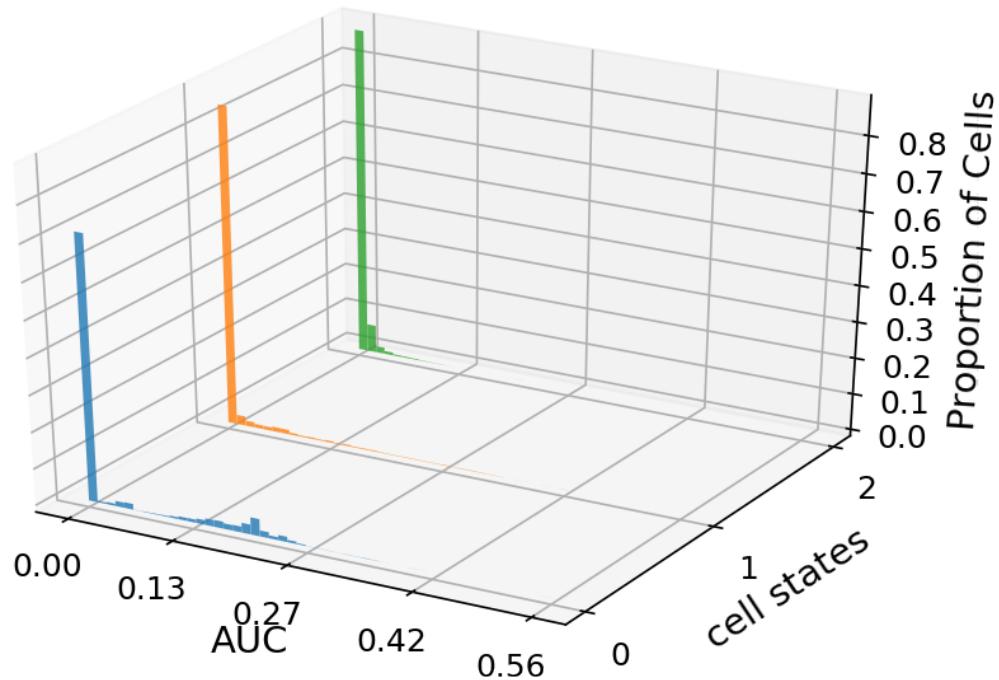
Ctcf



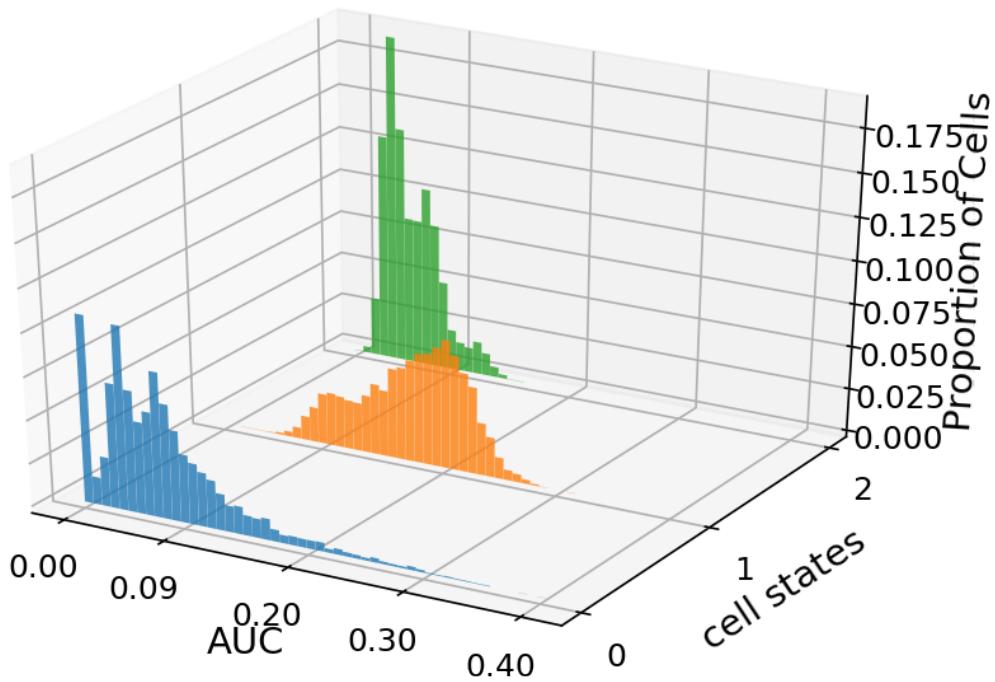
Cux1



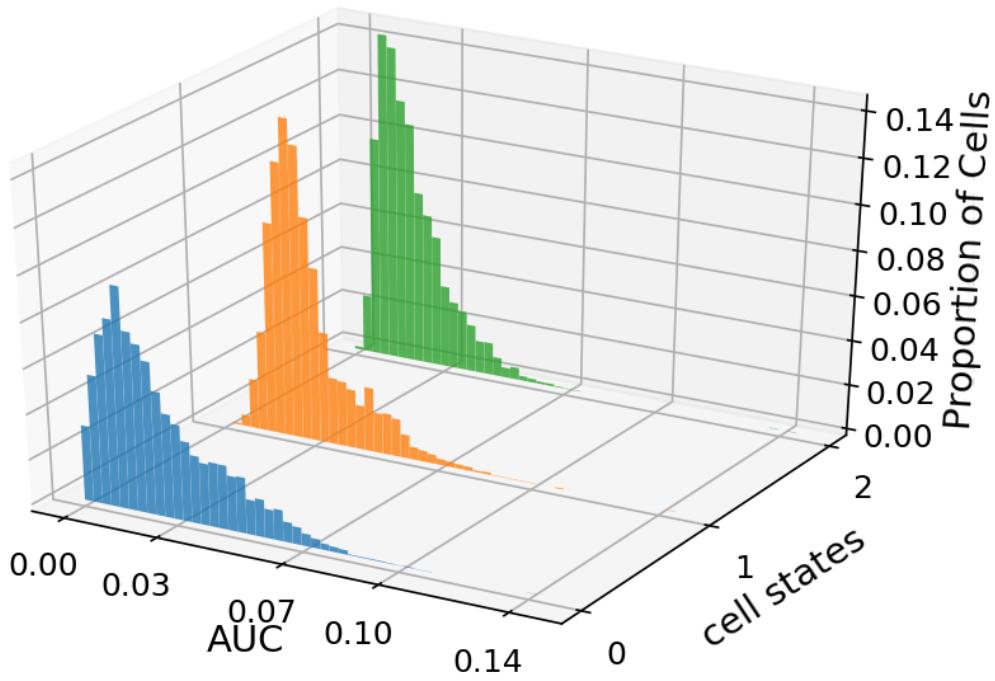
Cux2



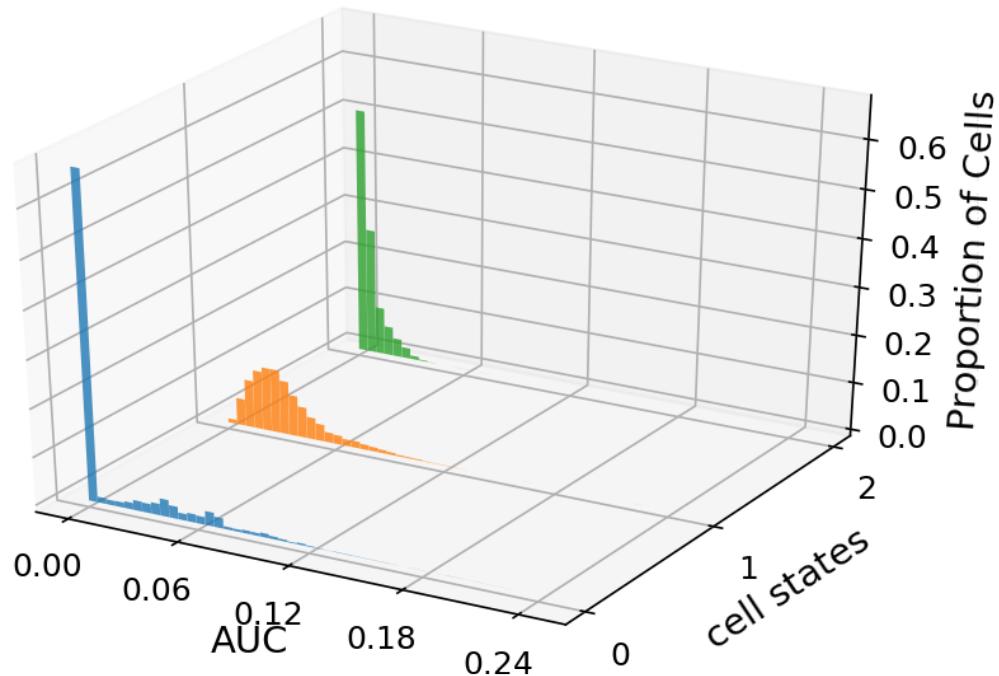
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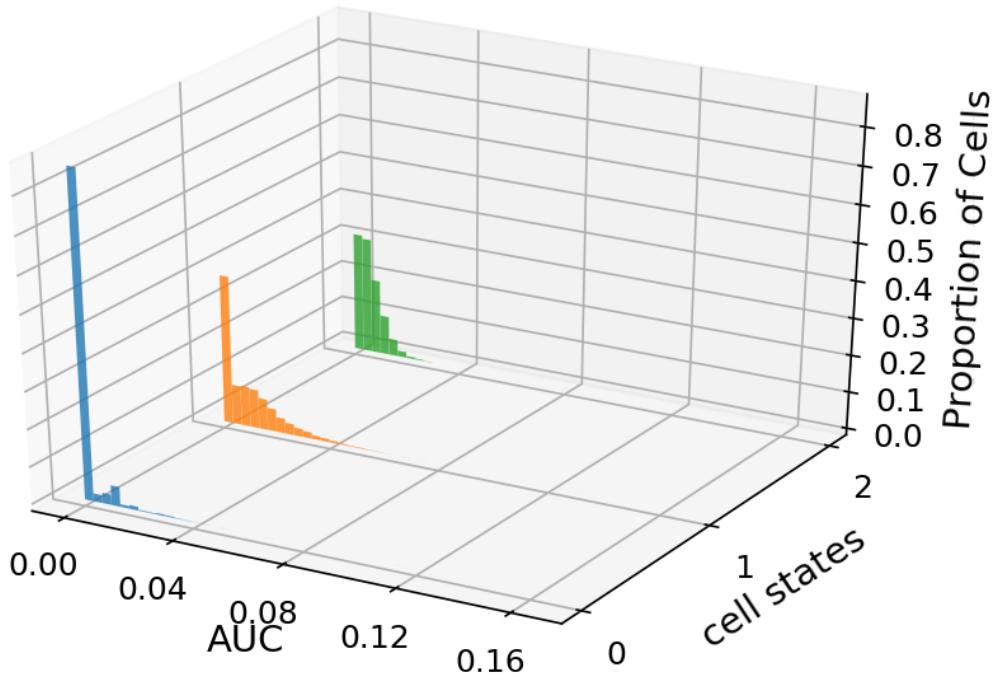
E2f1



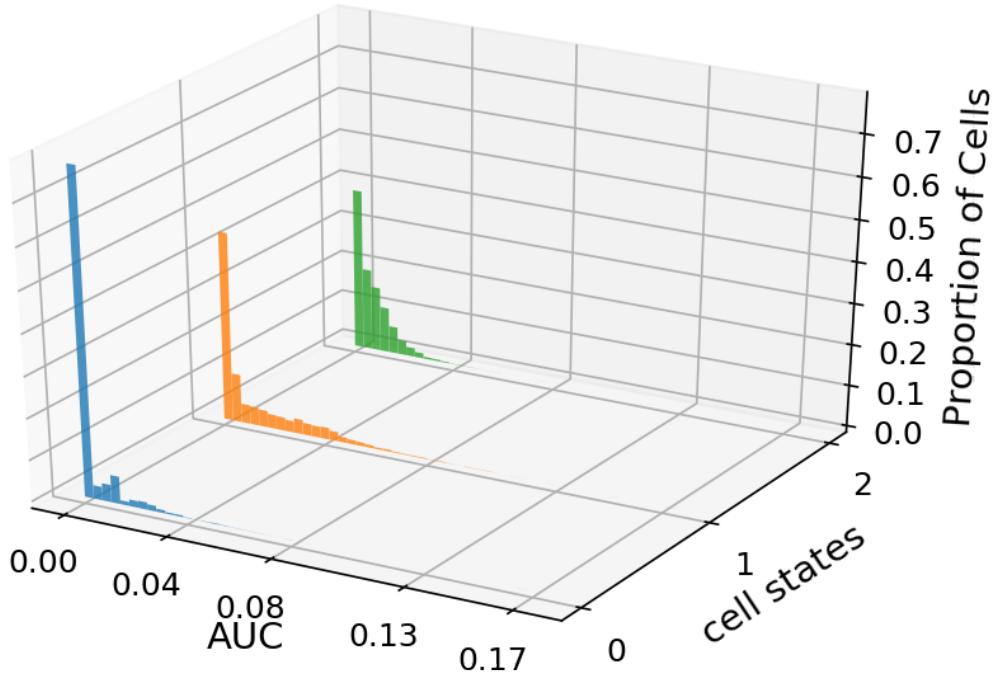
Egr1



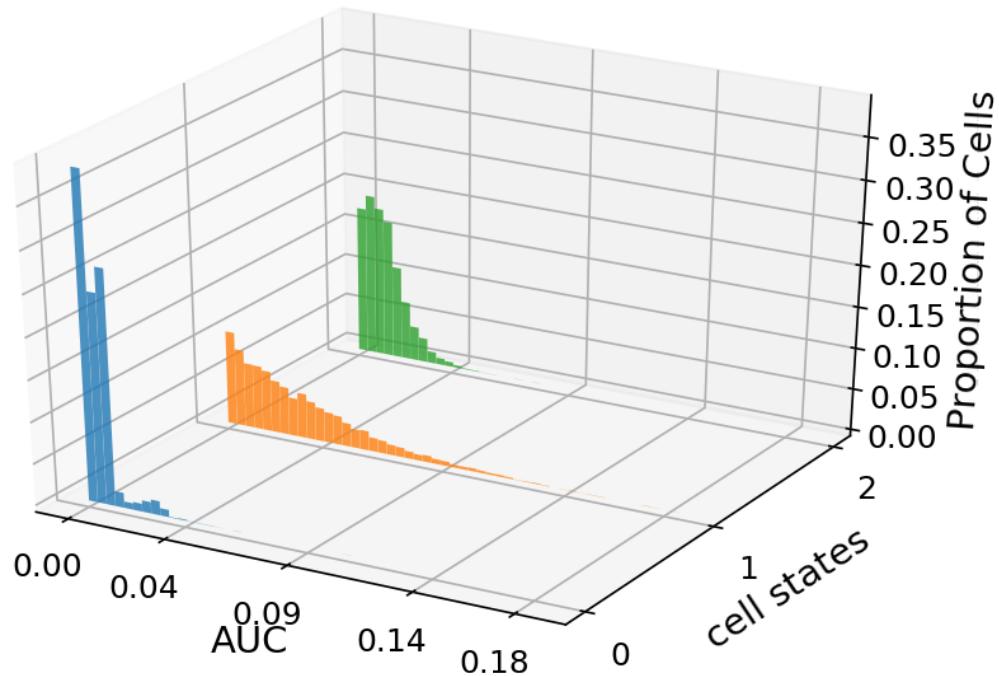
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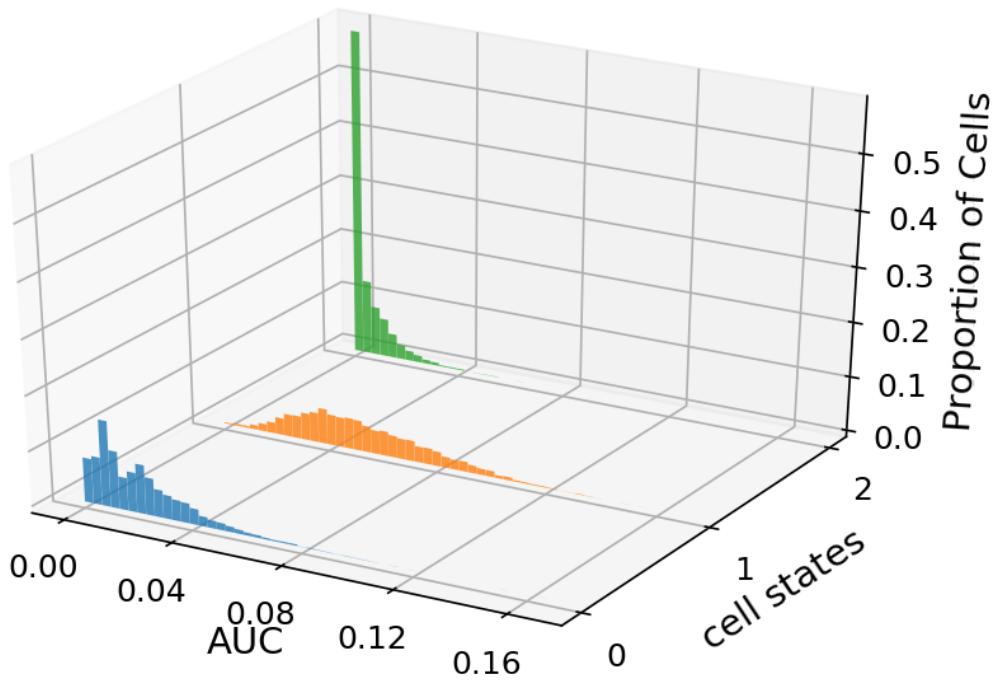
Elk4



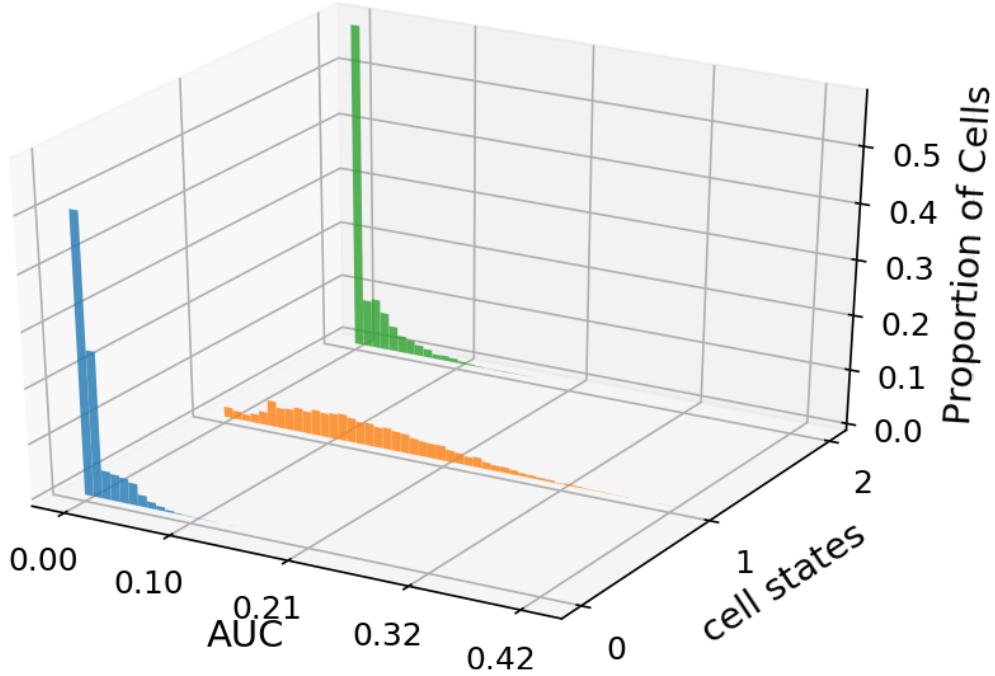
Ets2



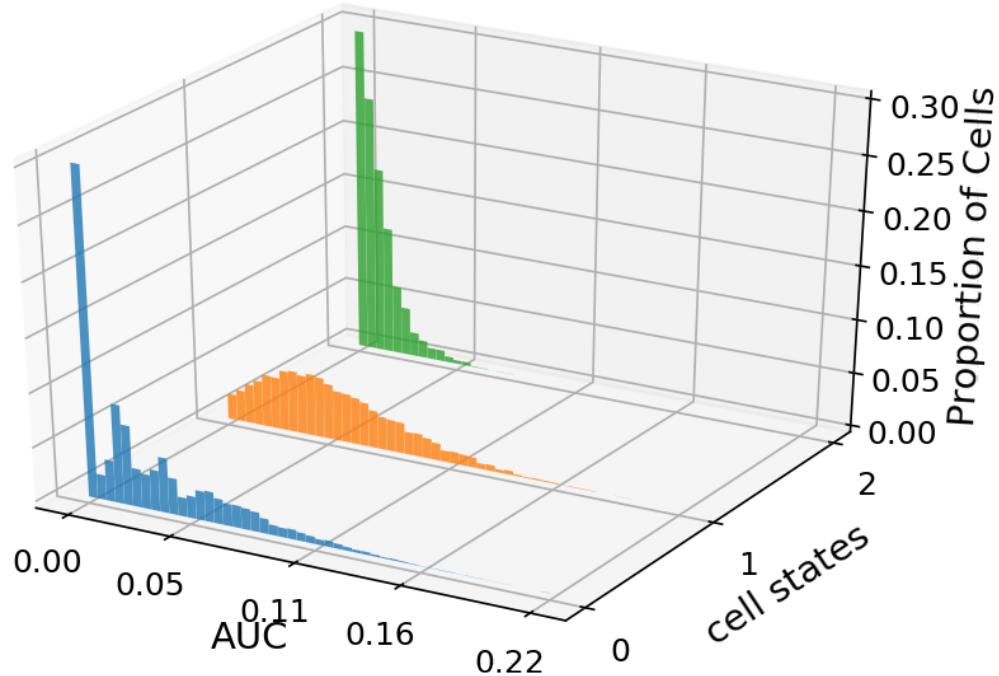
Foxa1



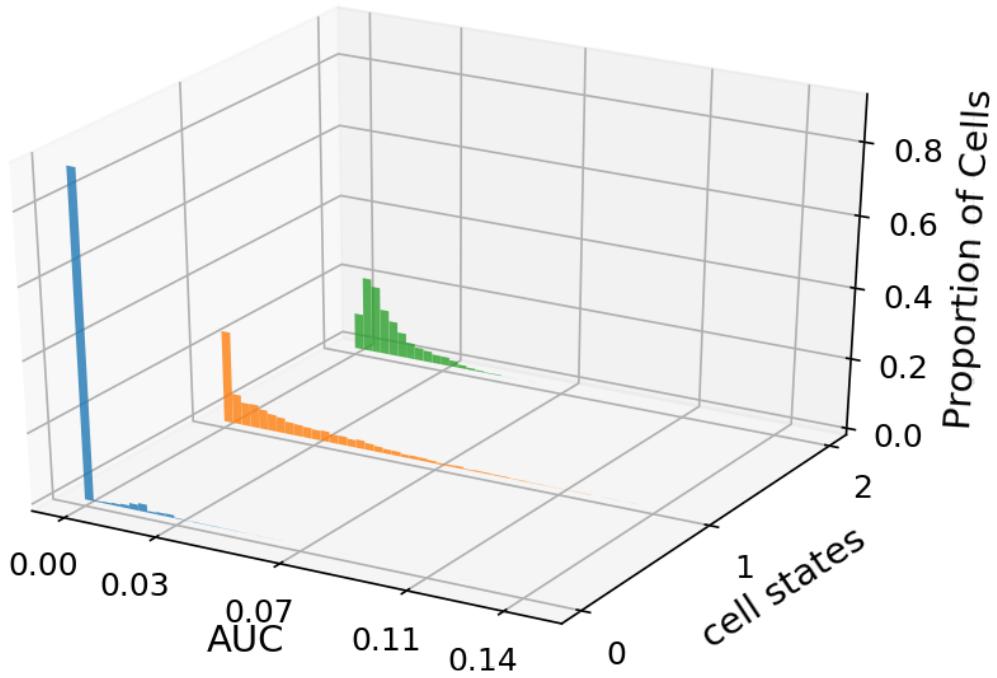
Foxa3



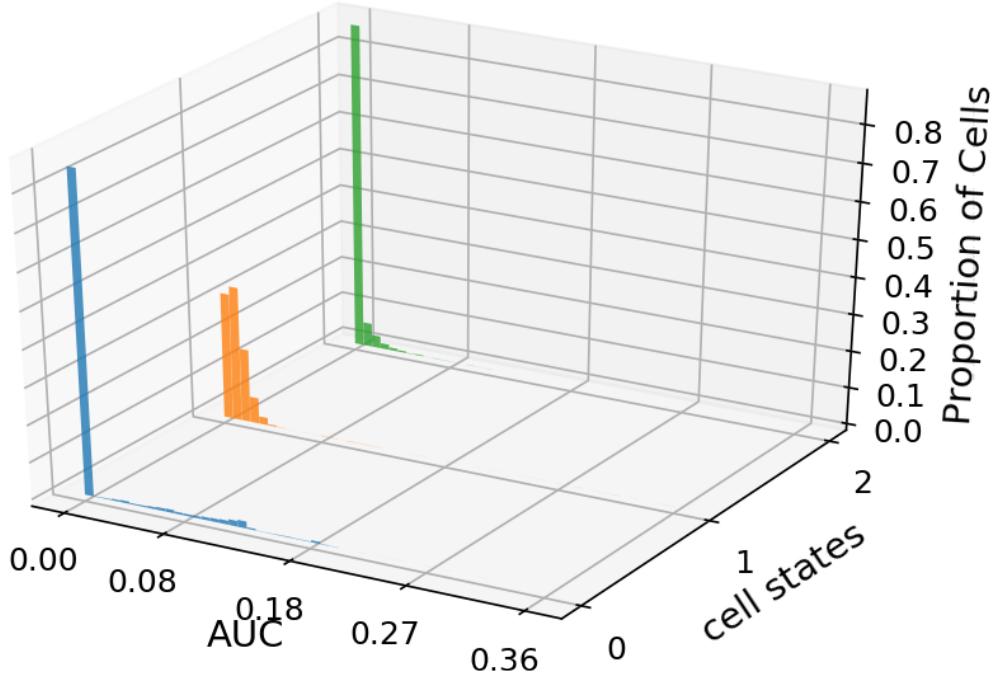
Foxn3



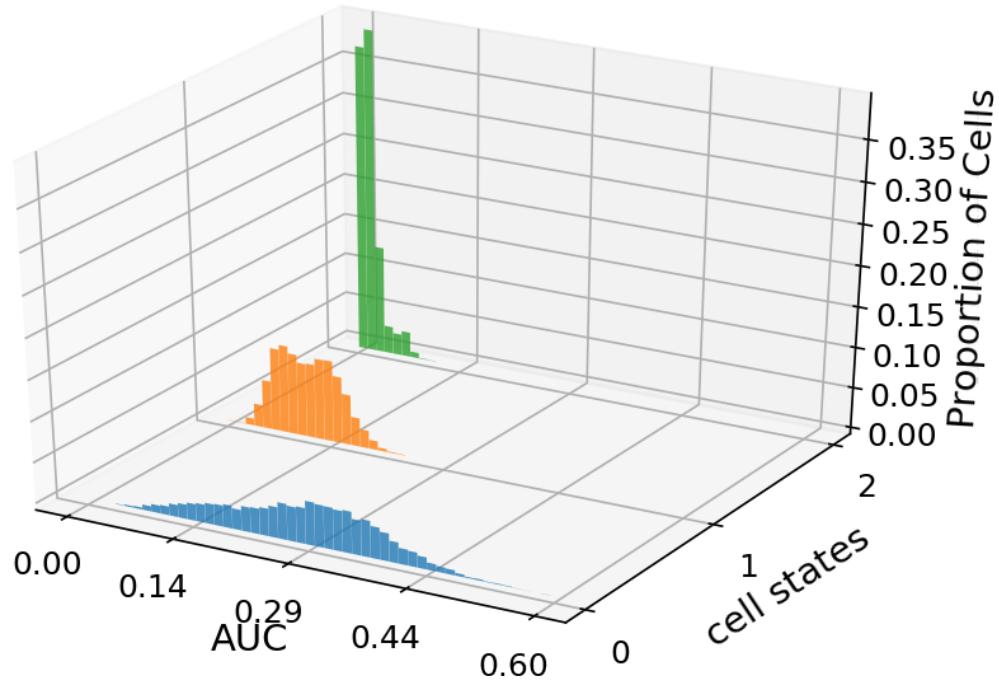
Foxo1



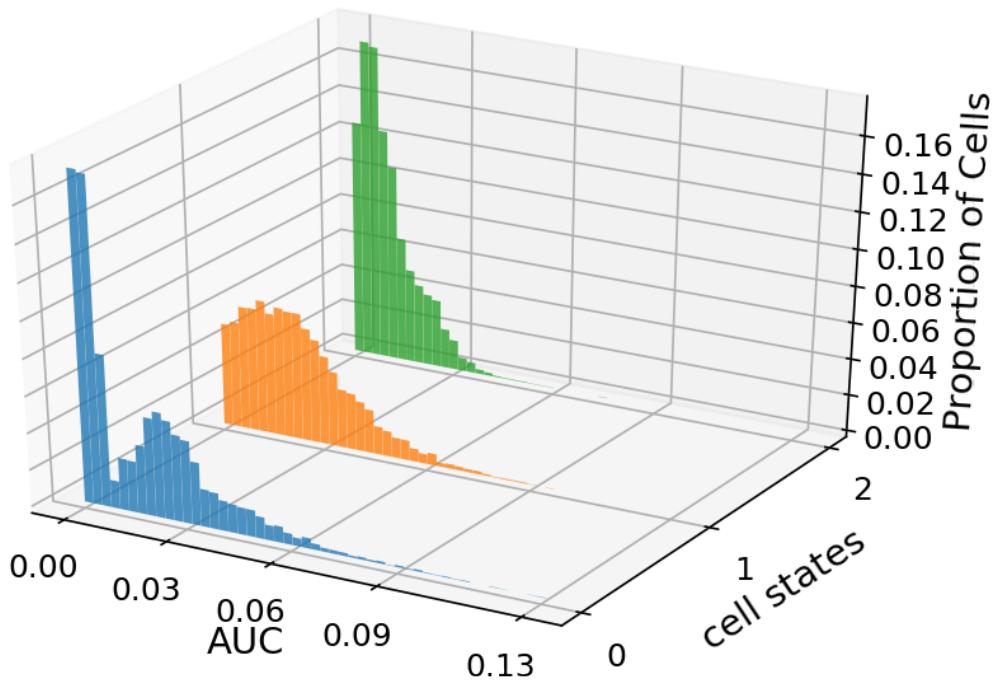
Foxo3



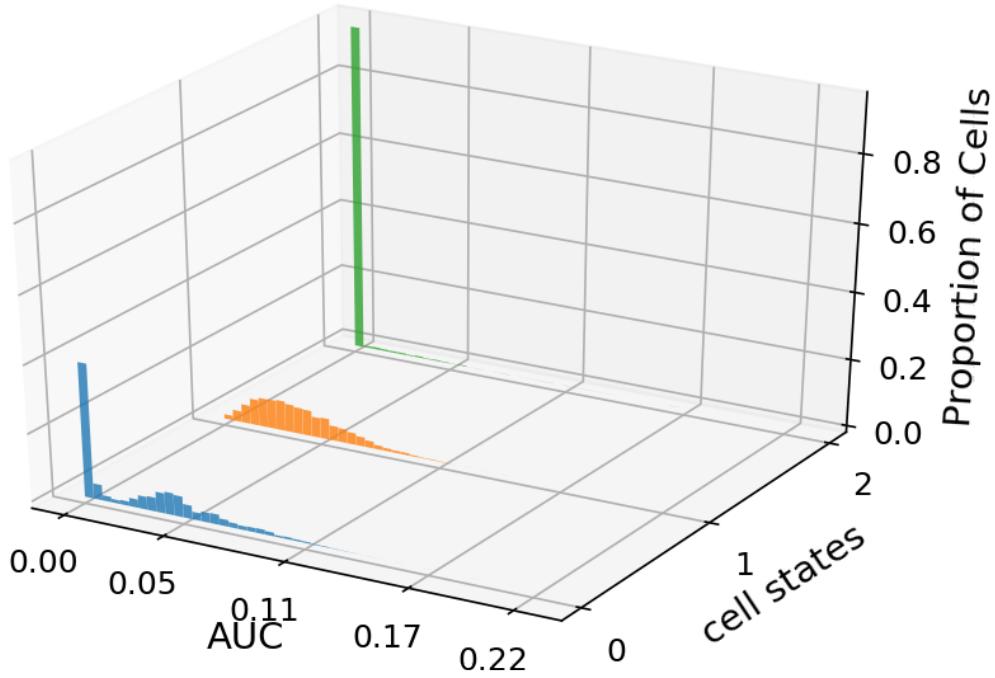
Foxq1



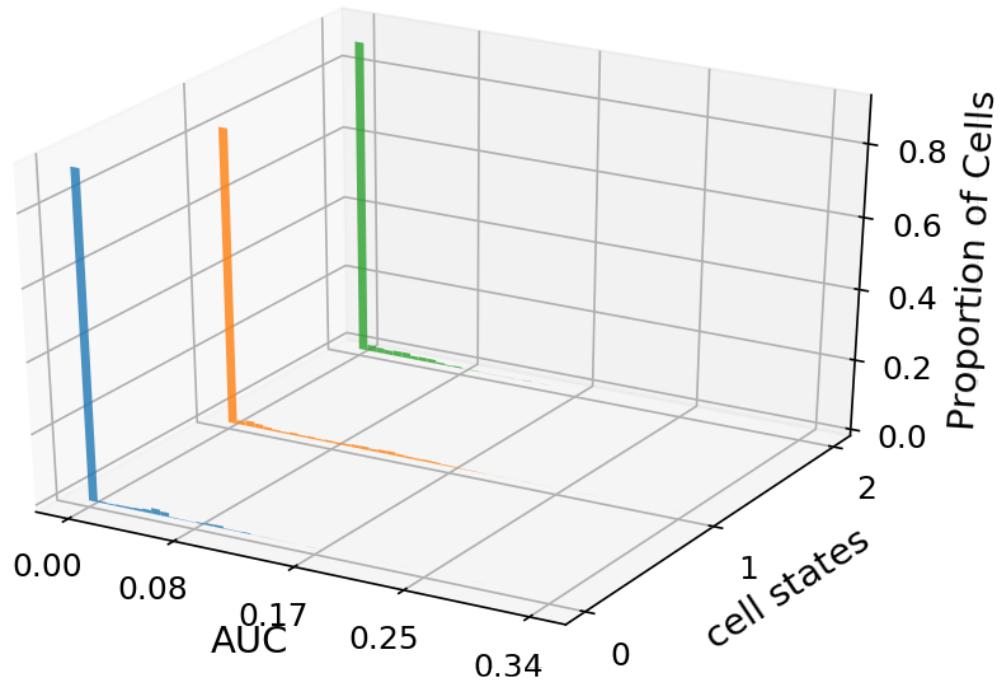
Gabpa



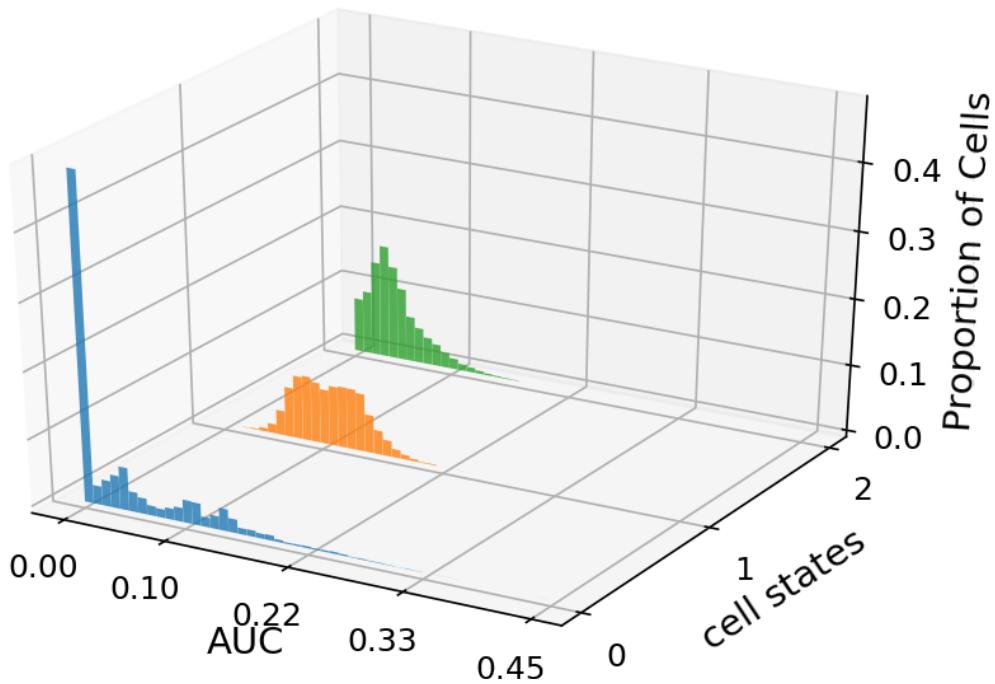
Hes1



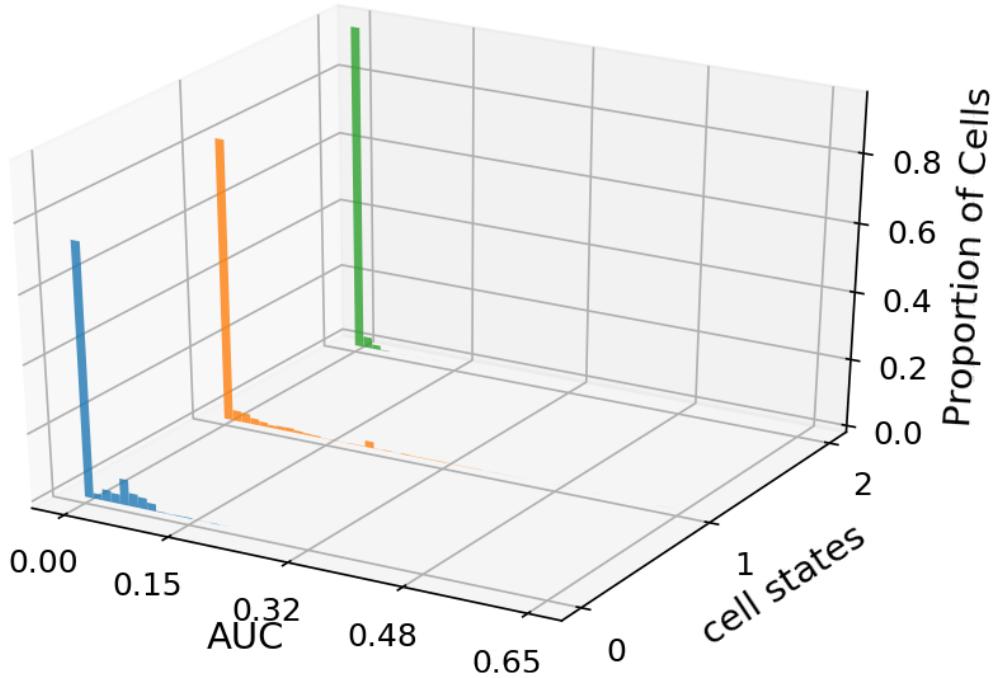
Hif1a



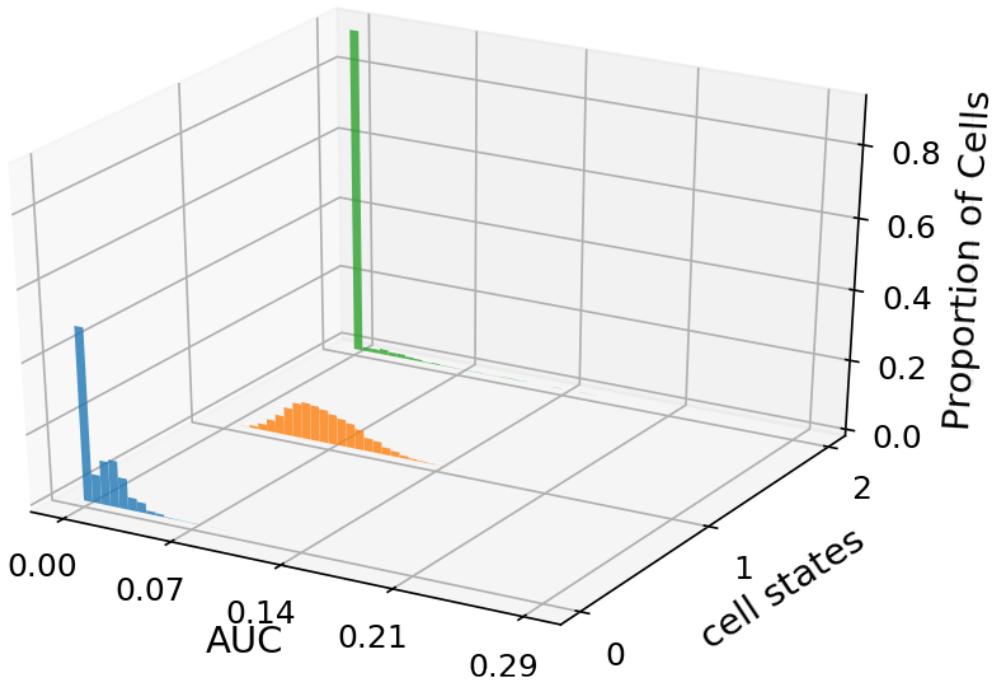
Hnf4a



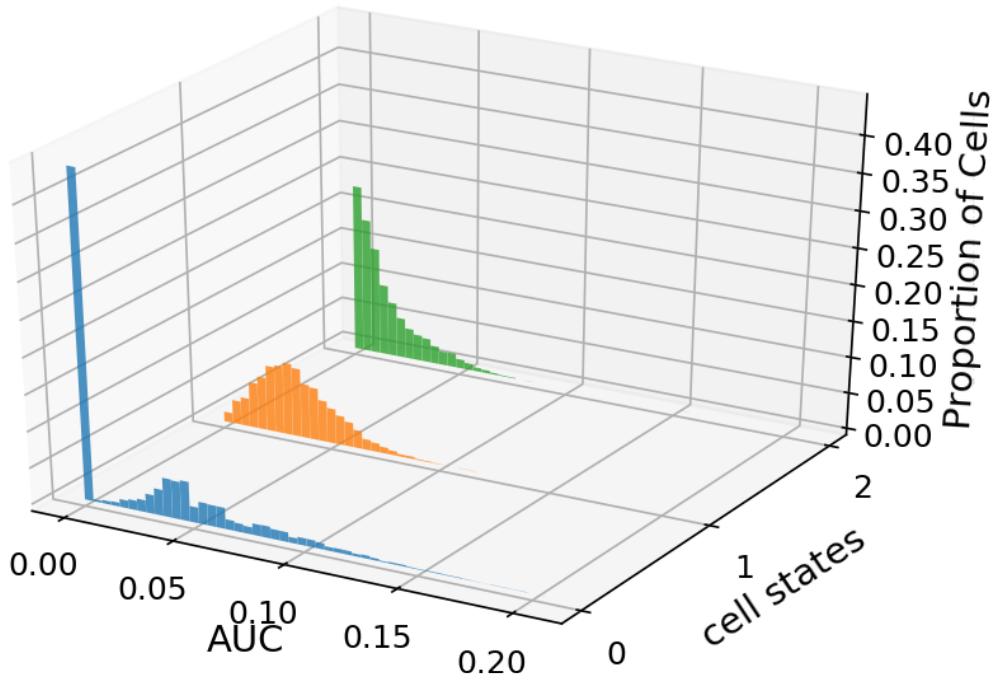
Hsf2



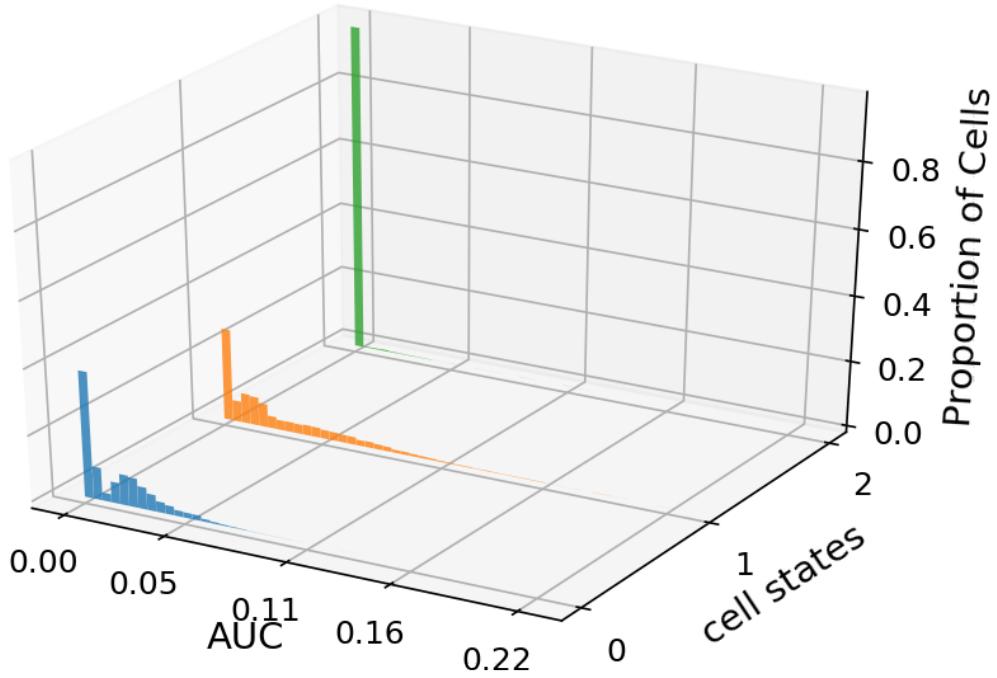
Irf2



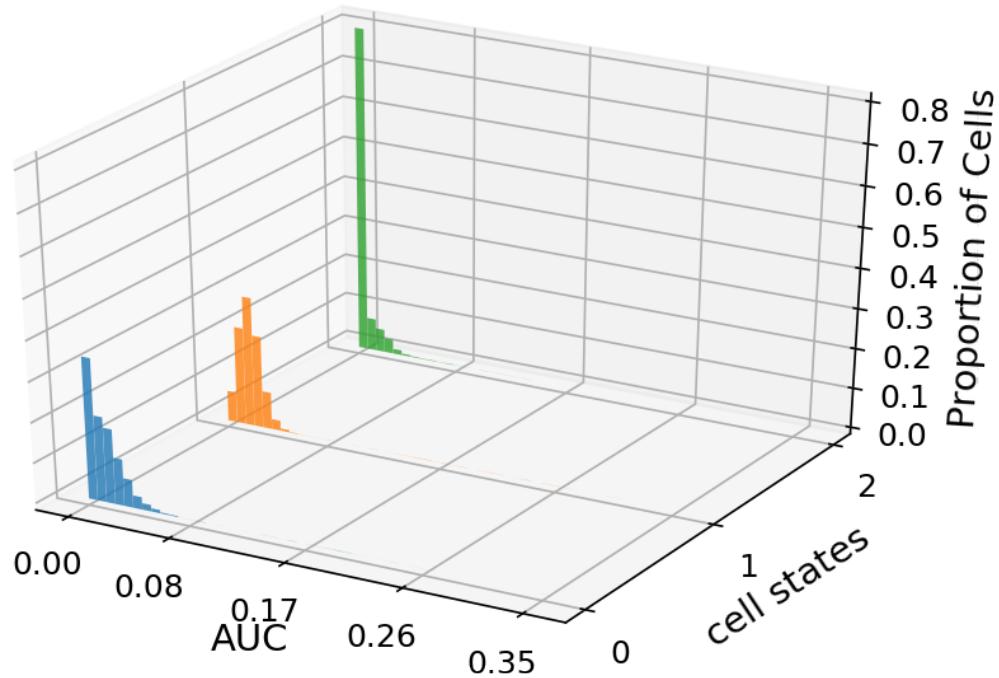
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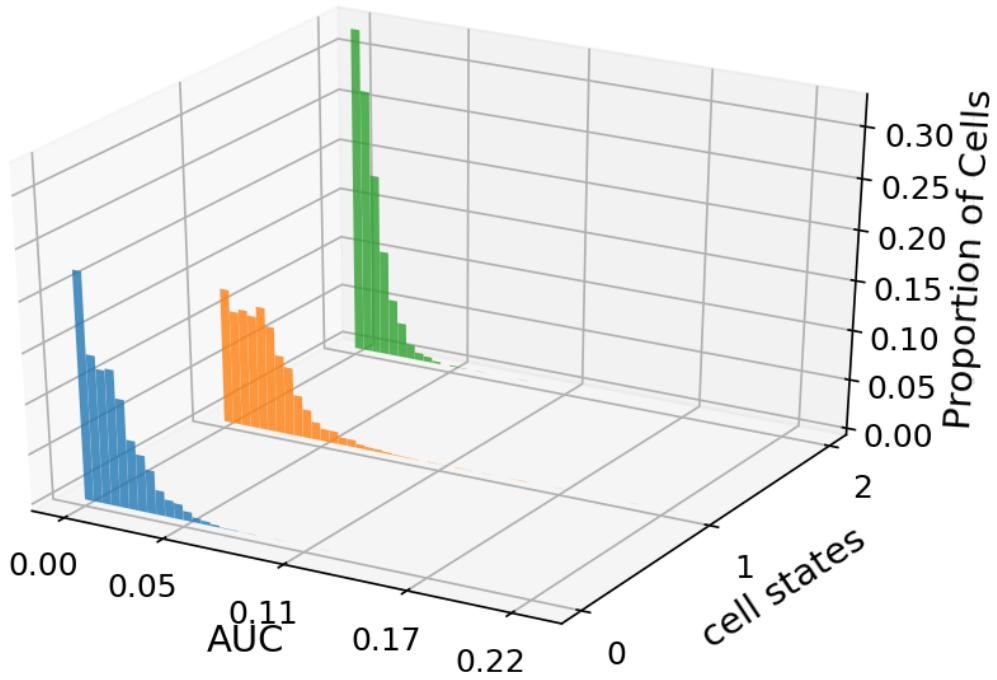
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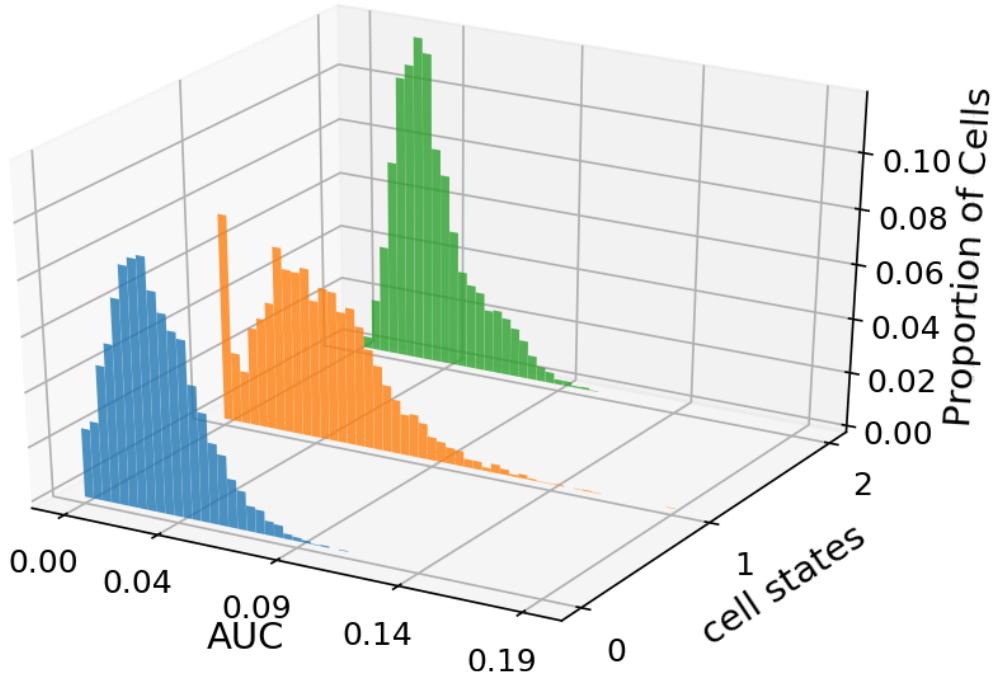
Irf7



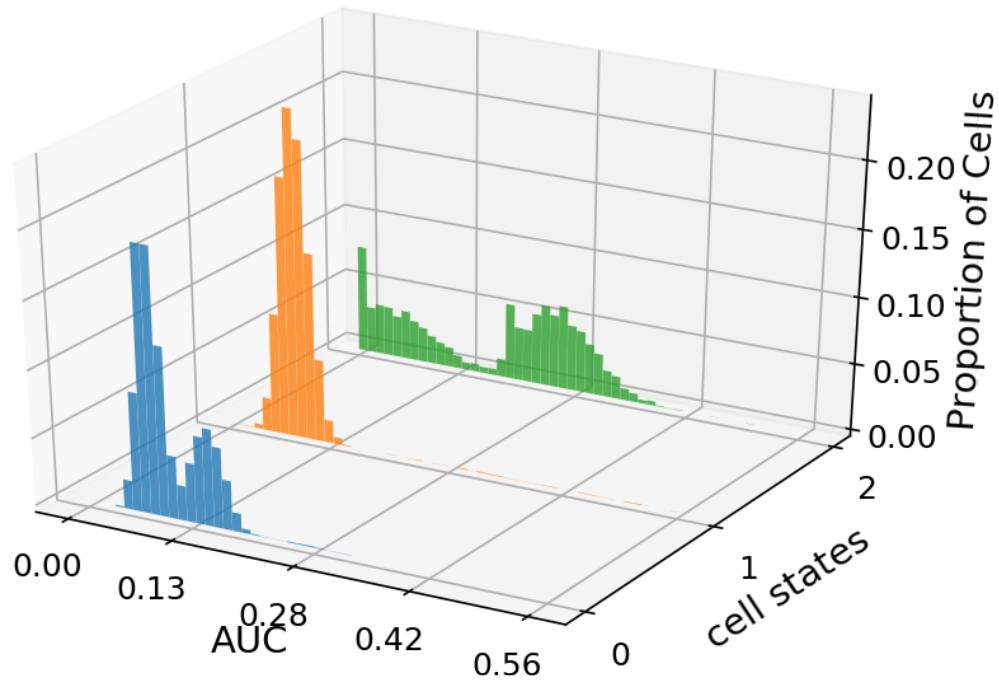
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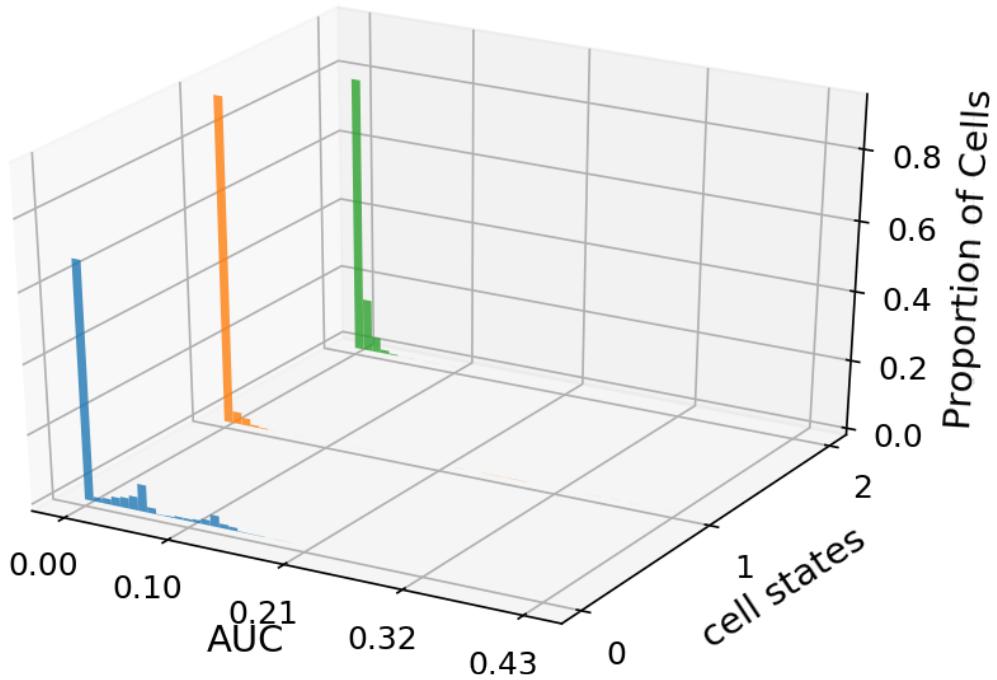
Junb



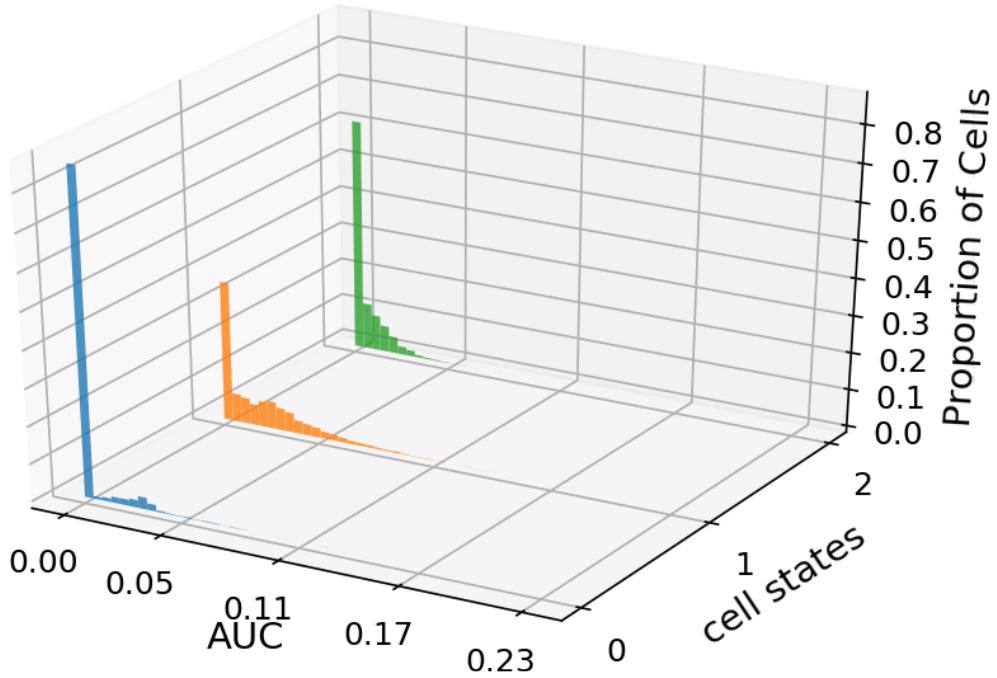
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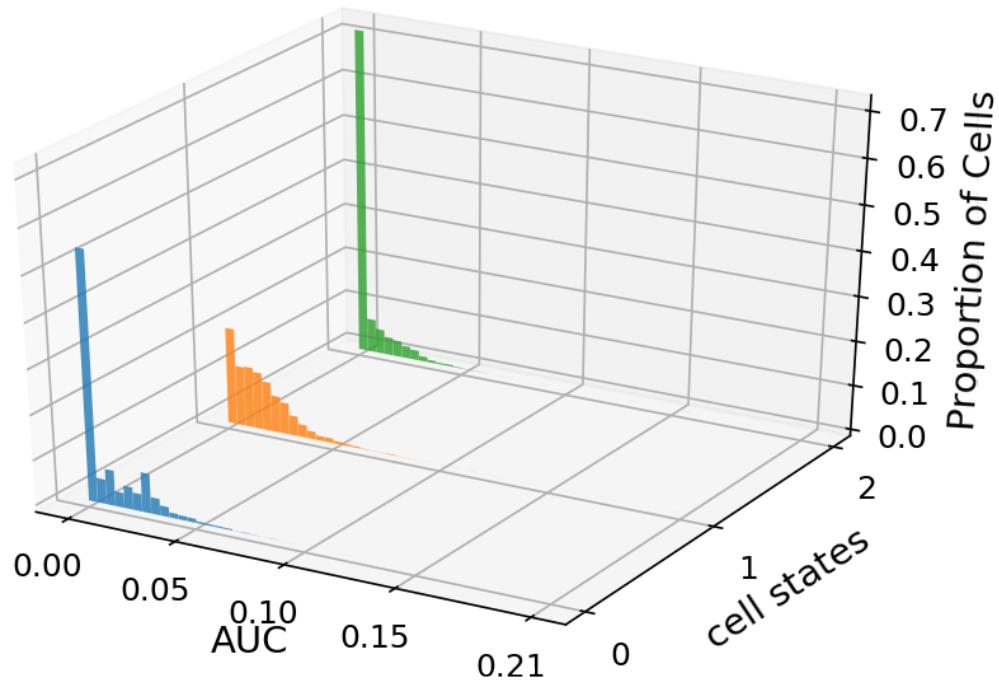
Klf10



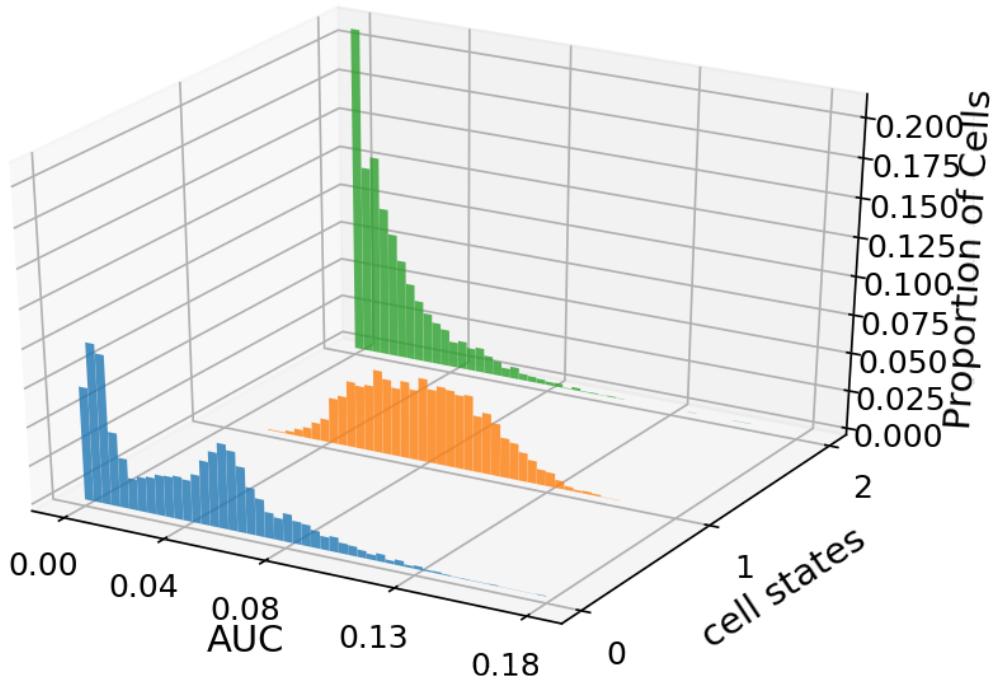
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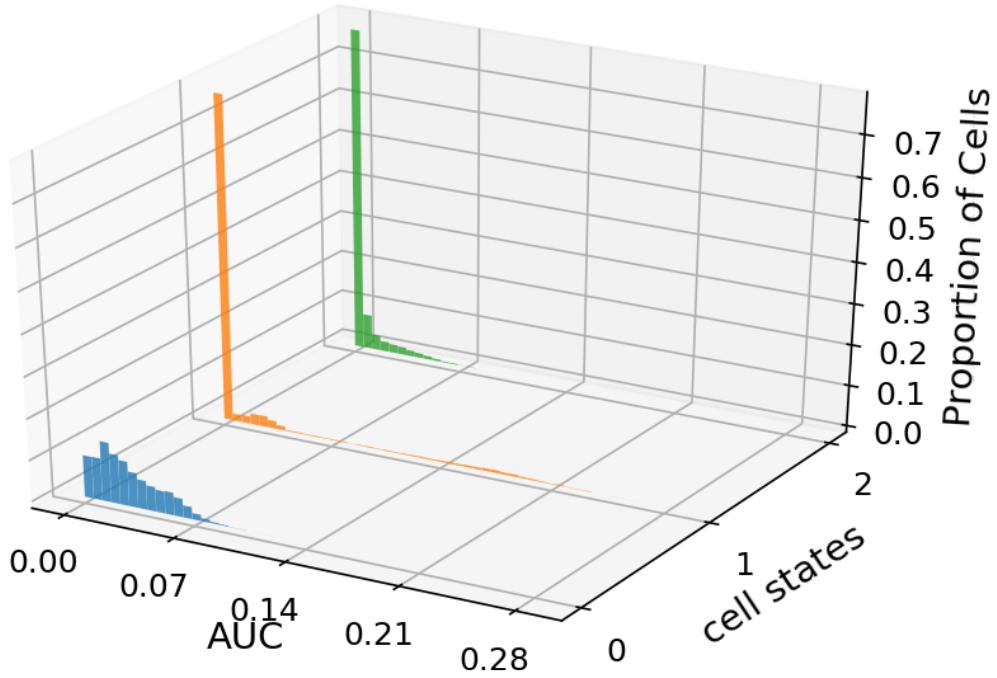
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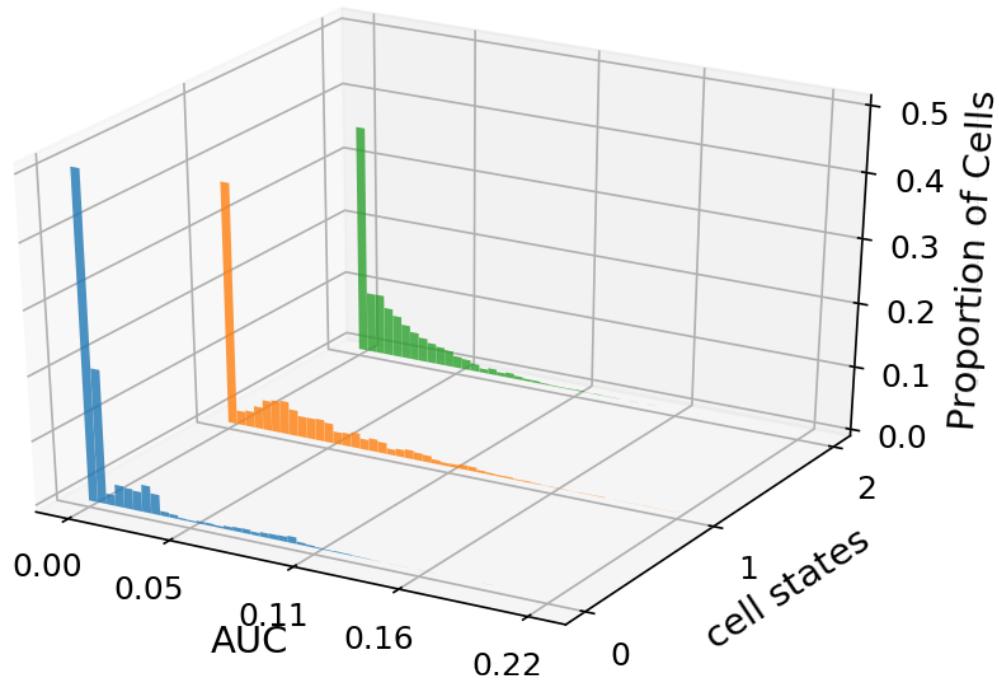
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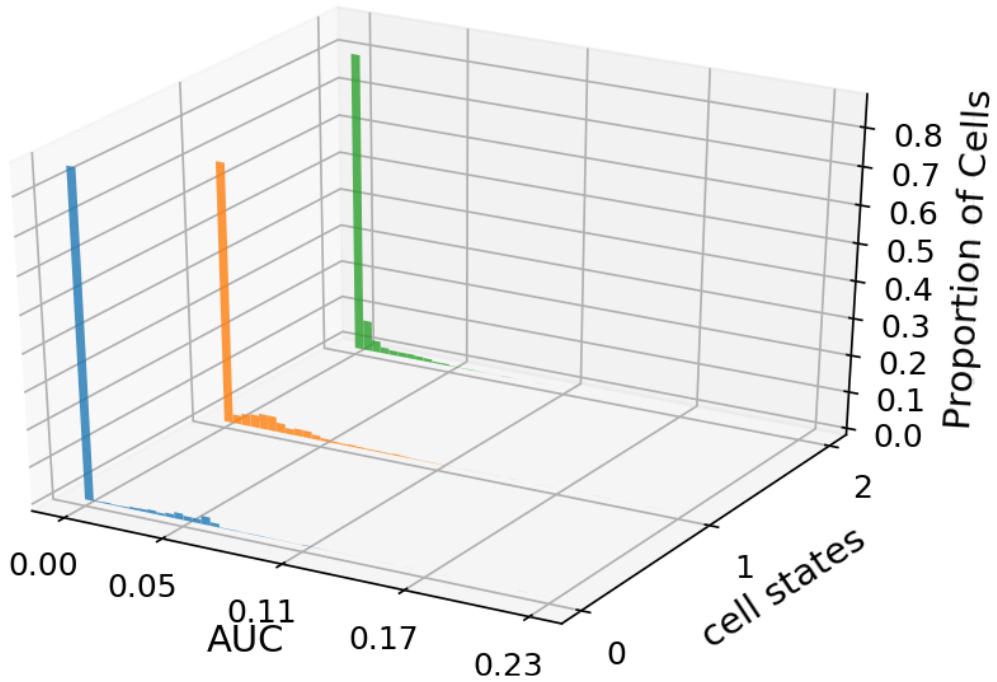
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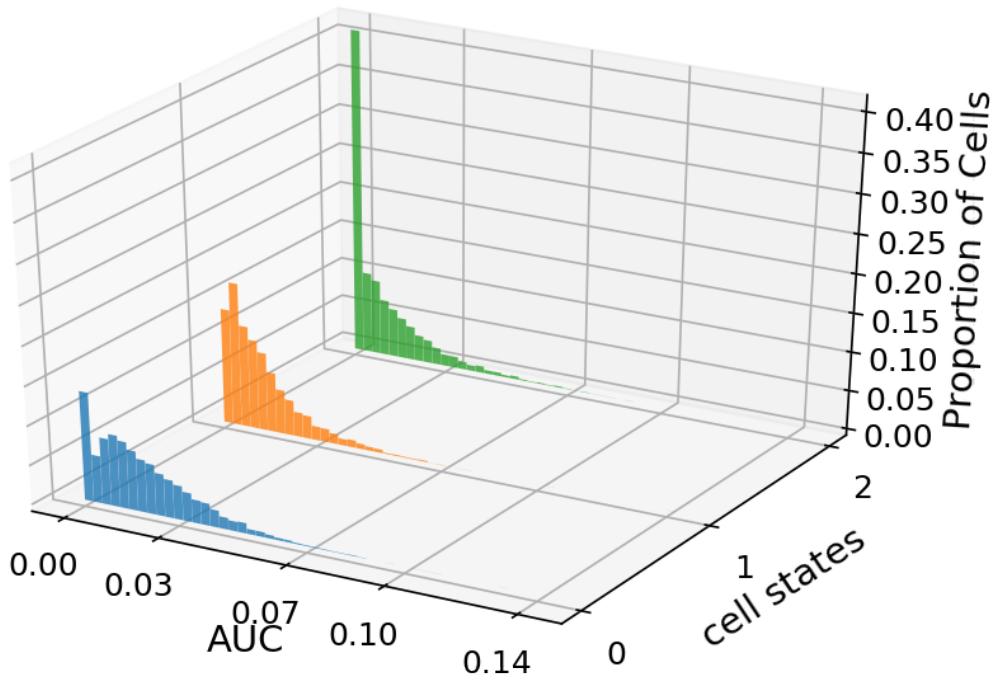
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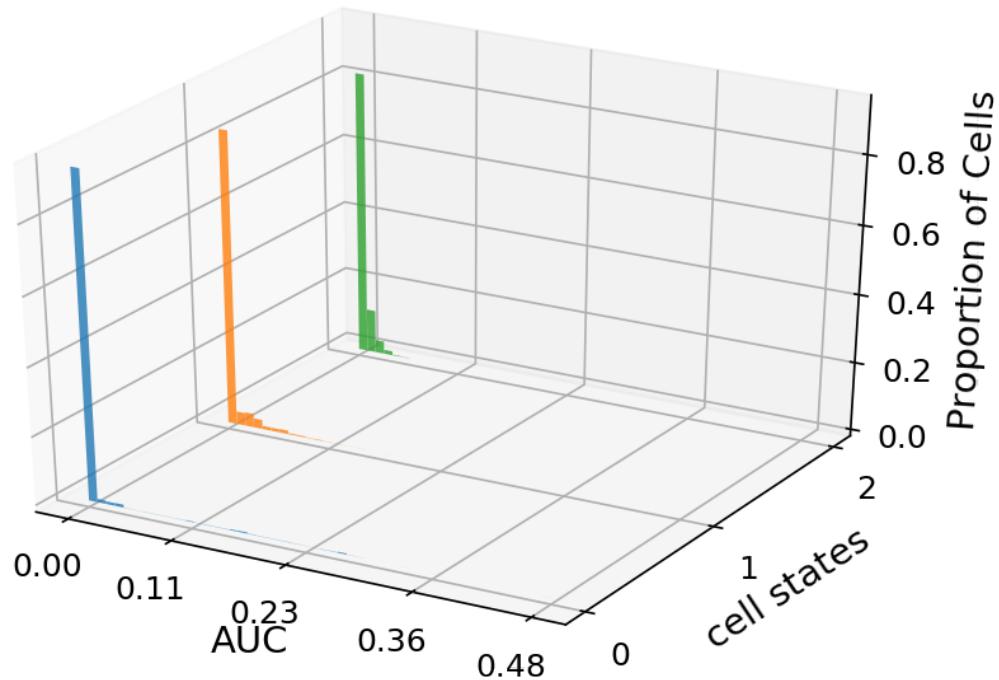
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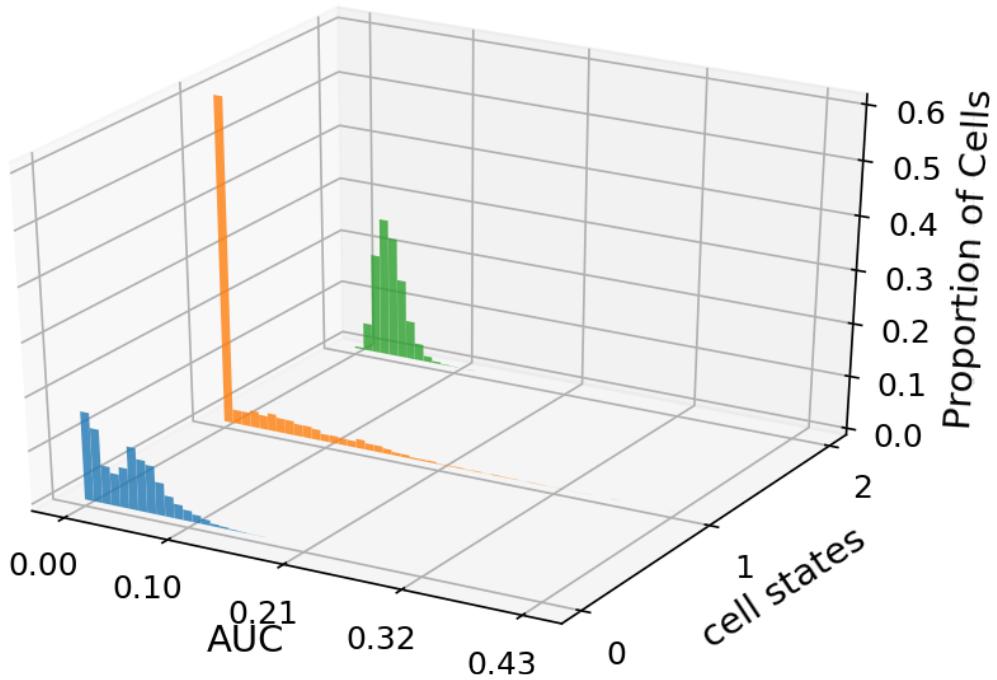
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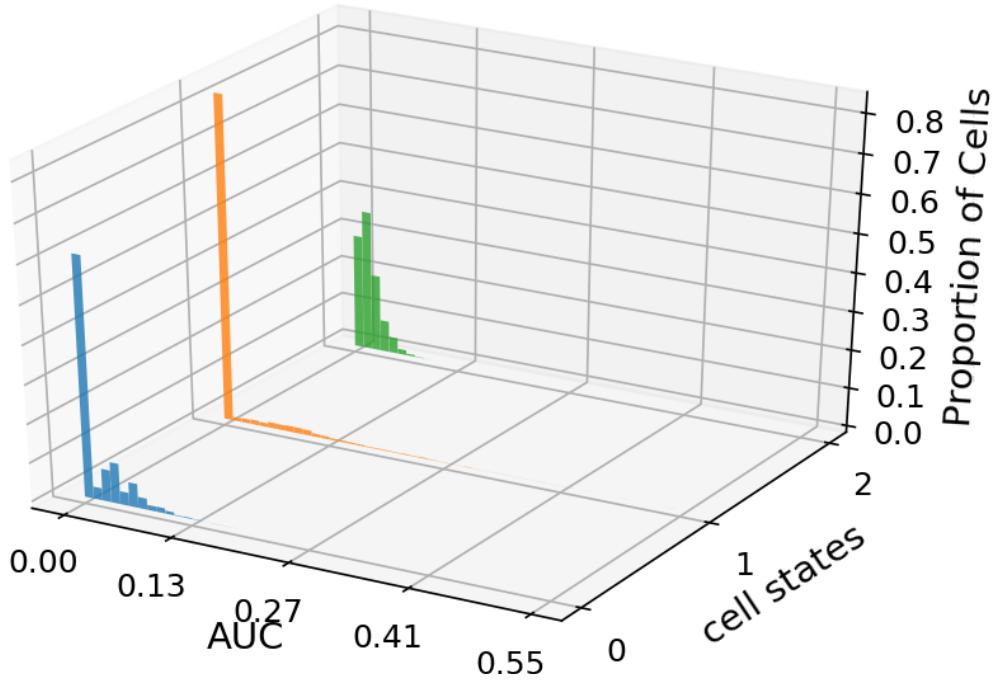
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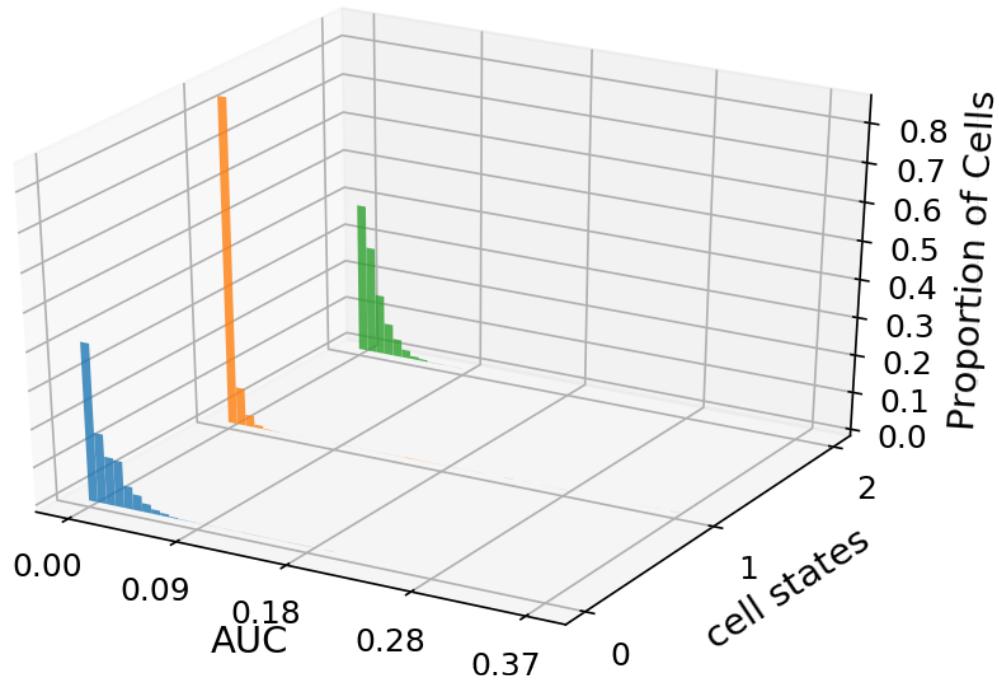
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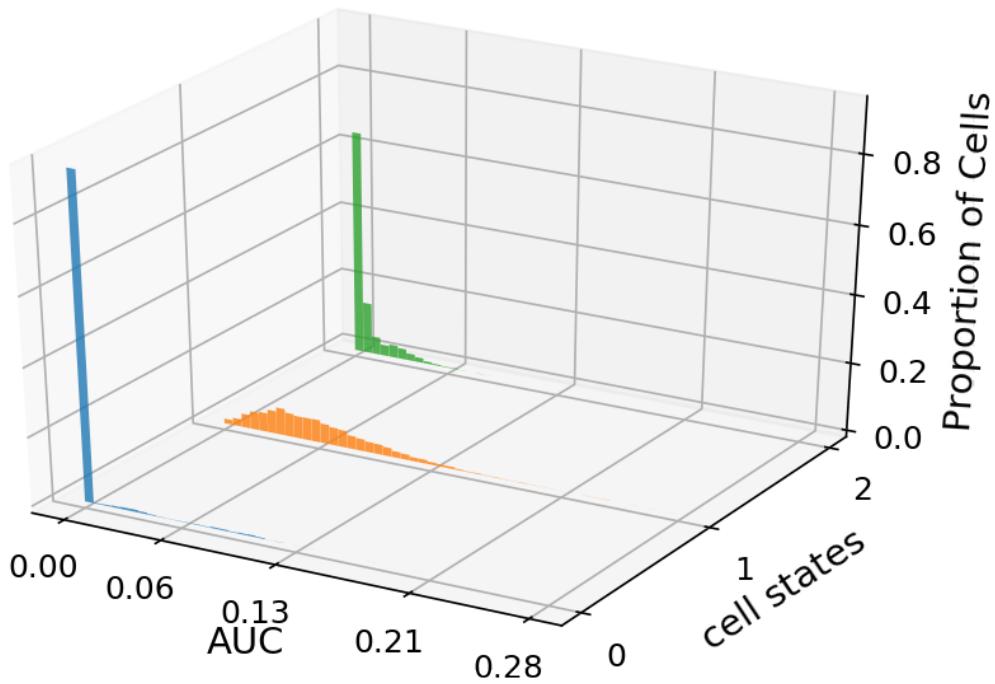
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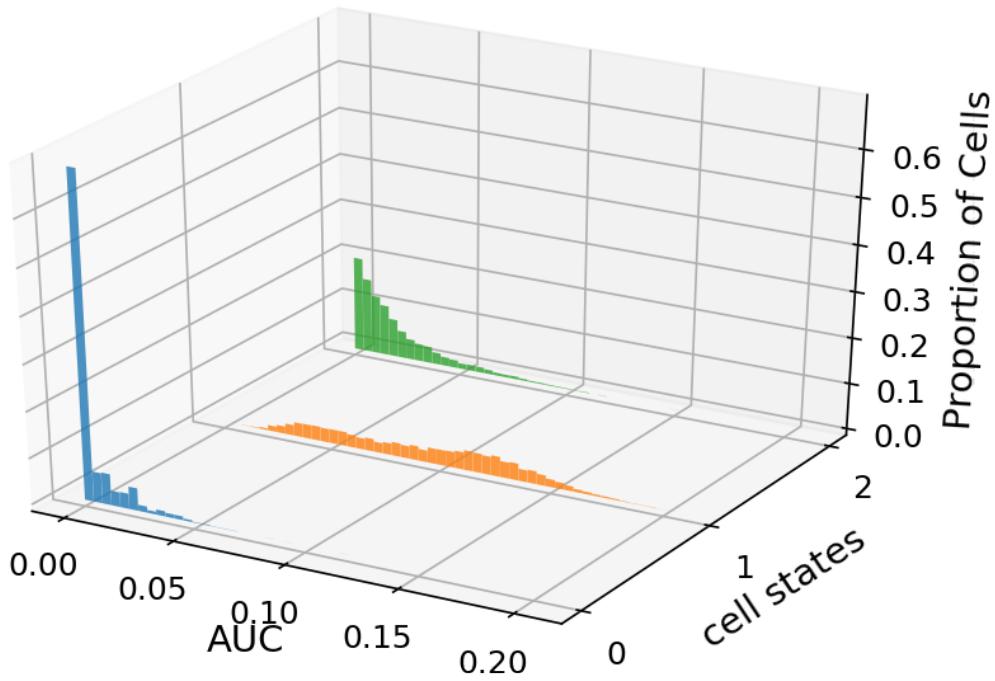
Mxi1



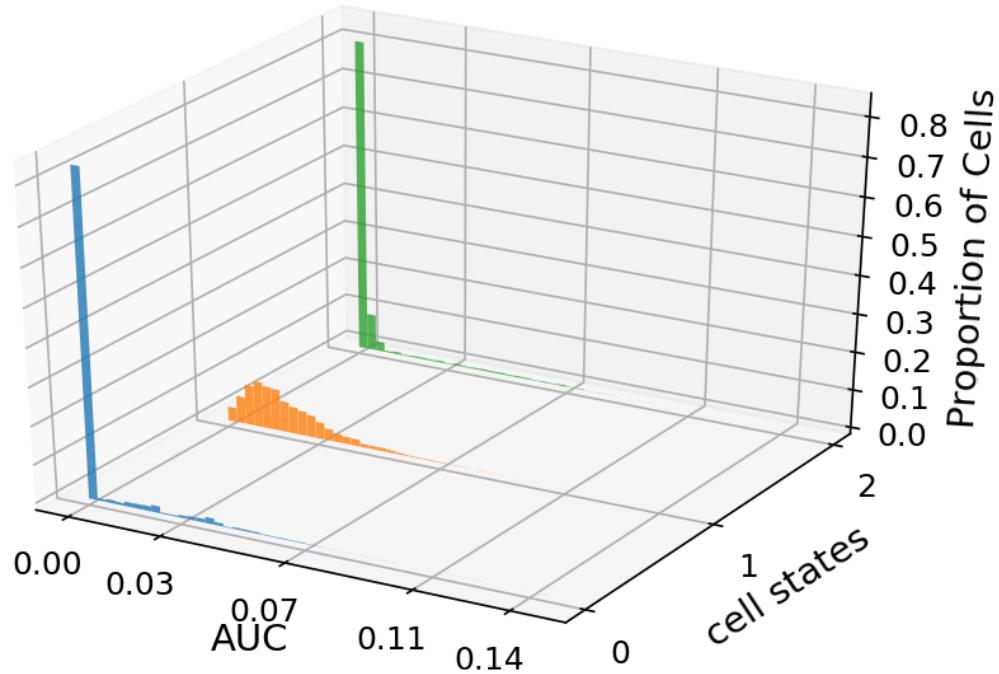
Nfe2l1



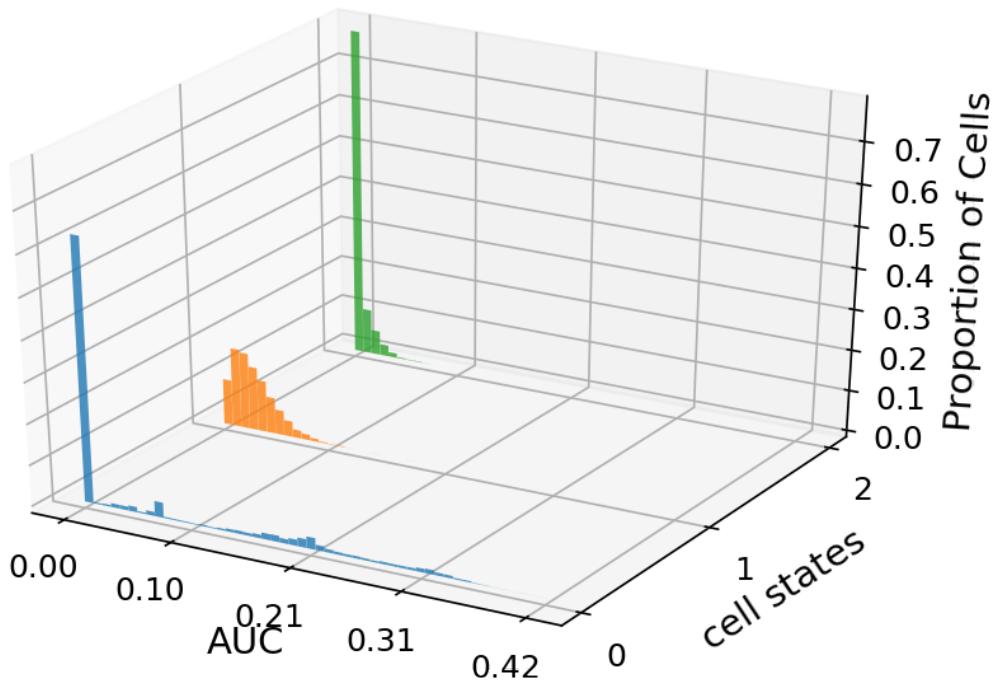
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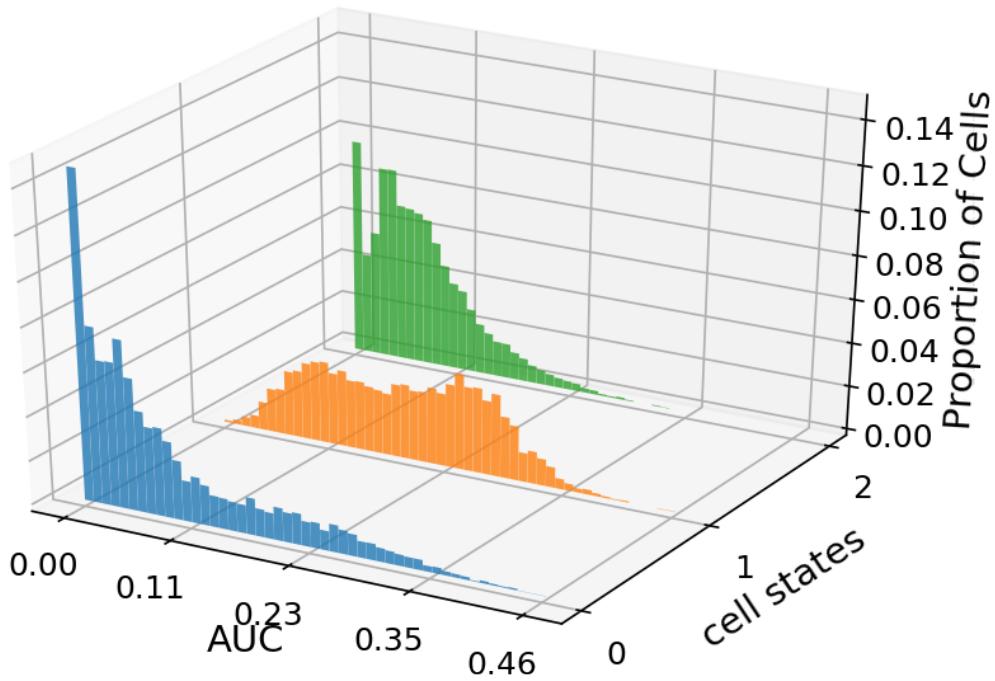
Nfyb



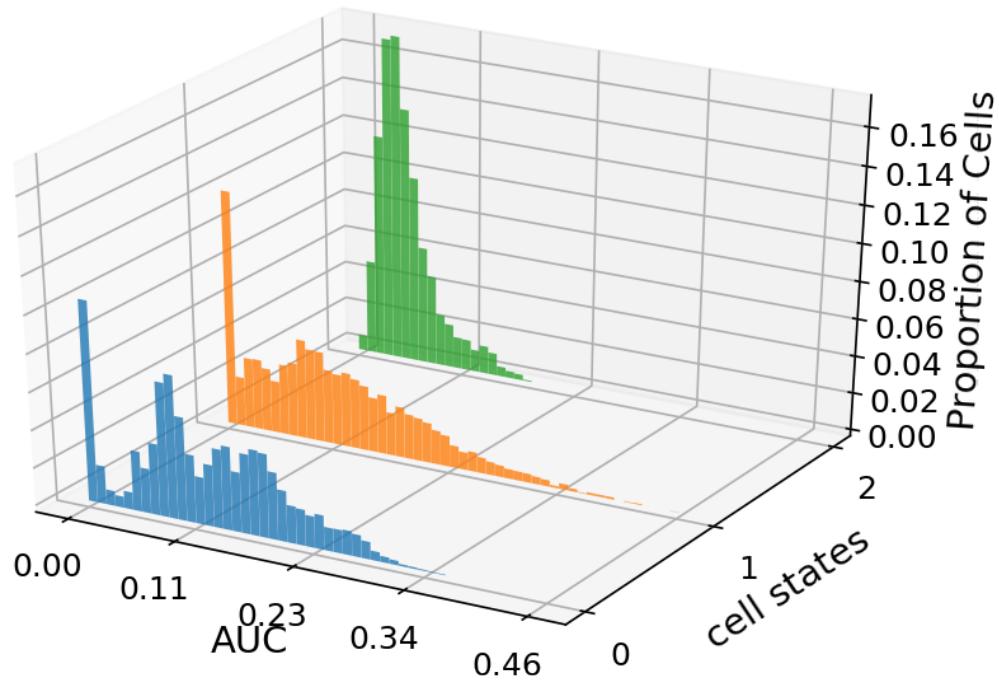
Nr1d1



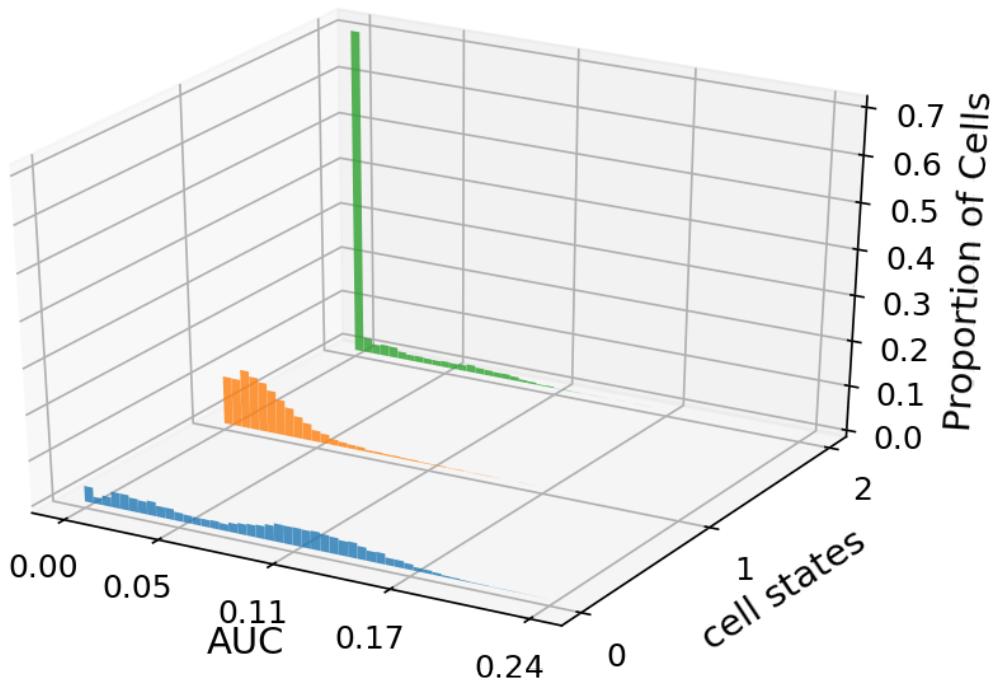
Nr1h3



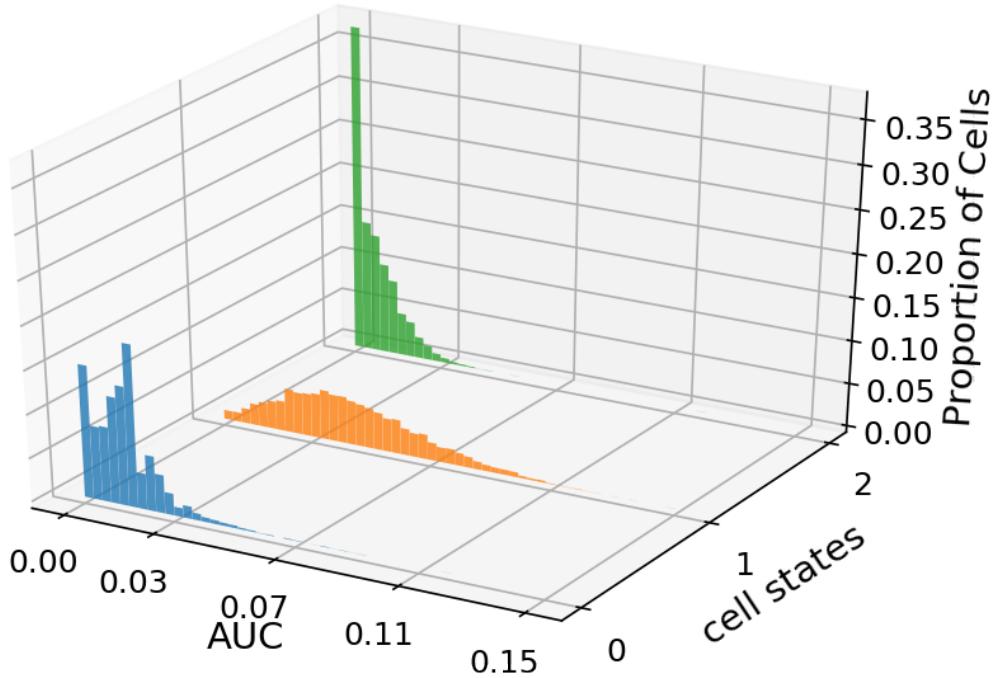
Nr1h4



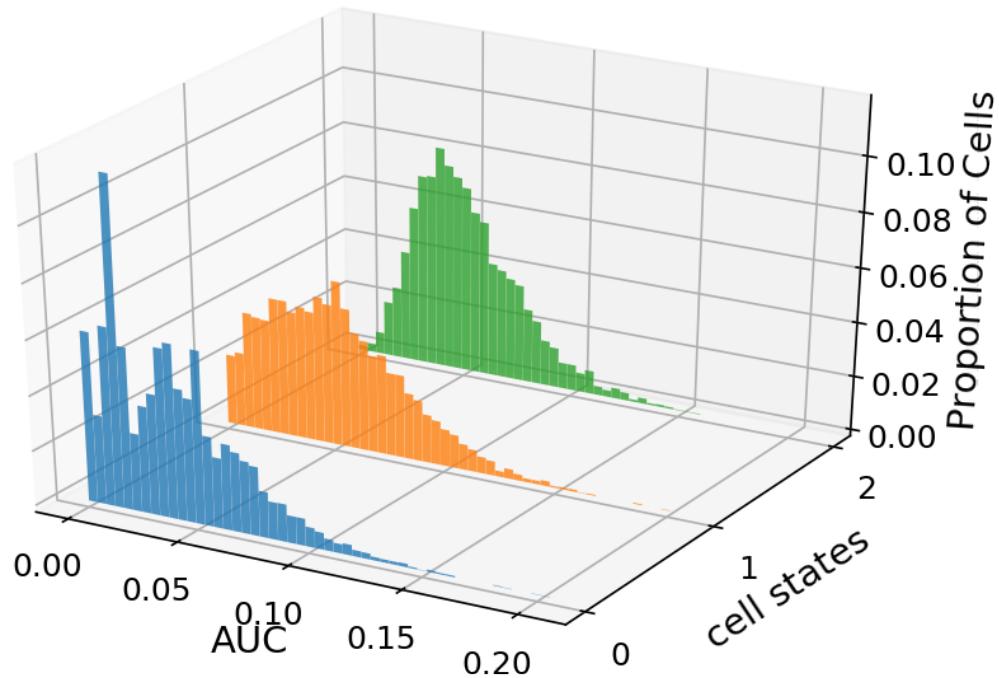
Nr1i2



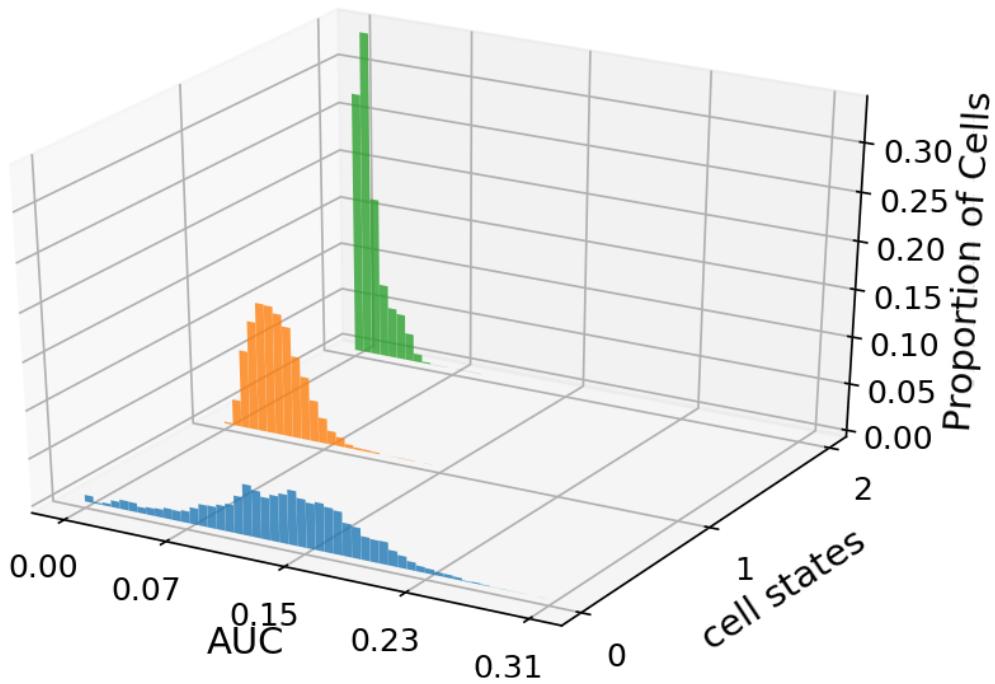
Nr2f2



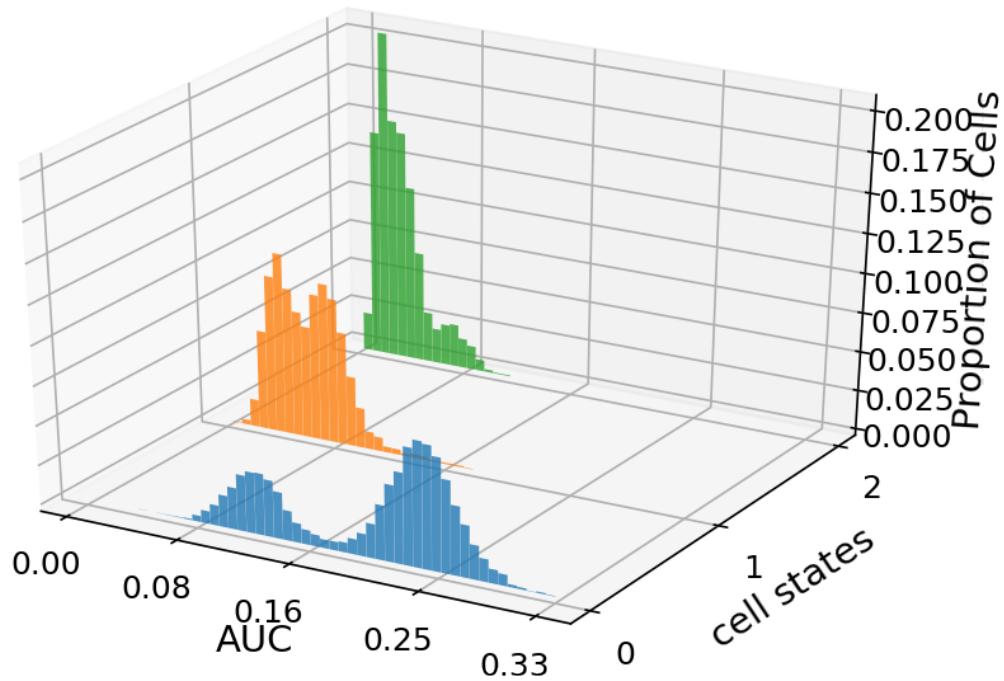
Nr2f6



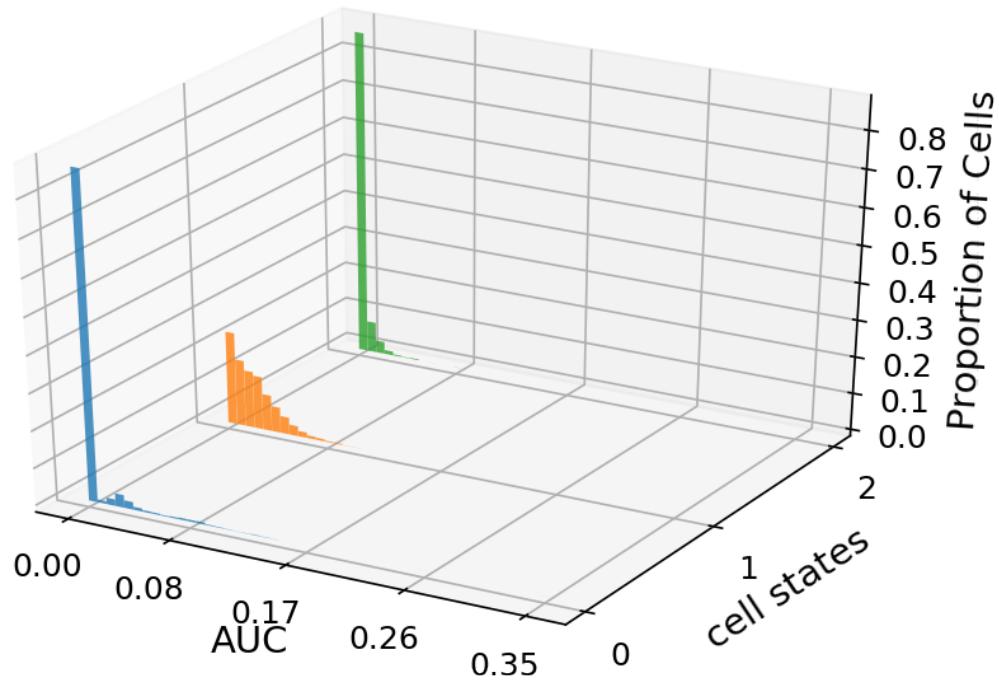
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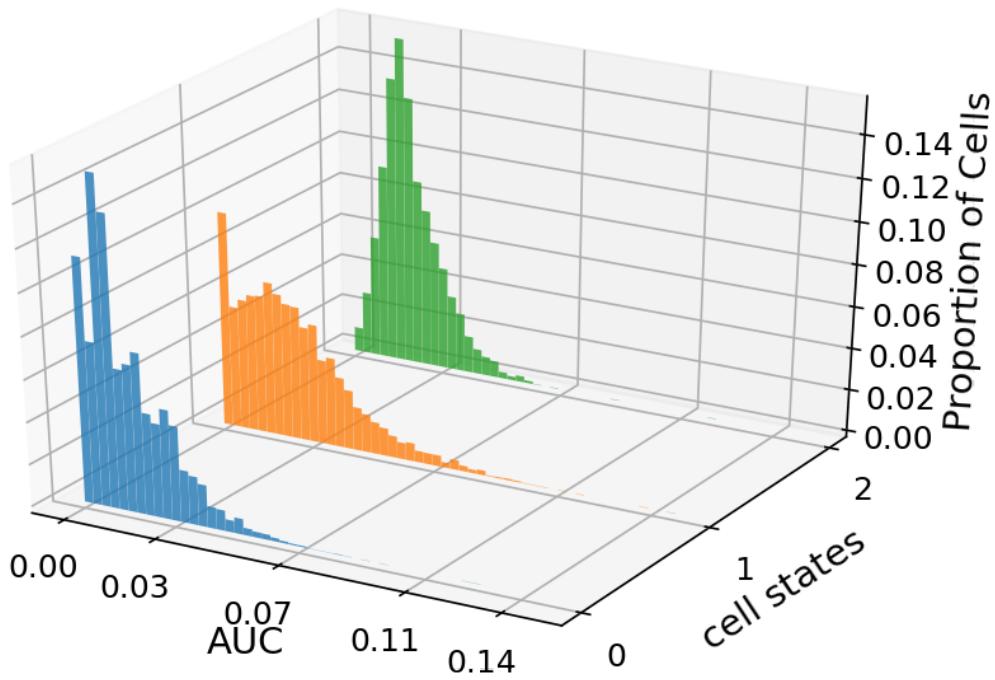
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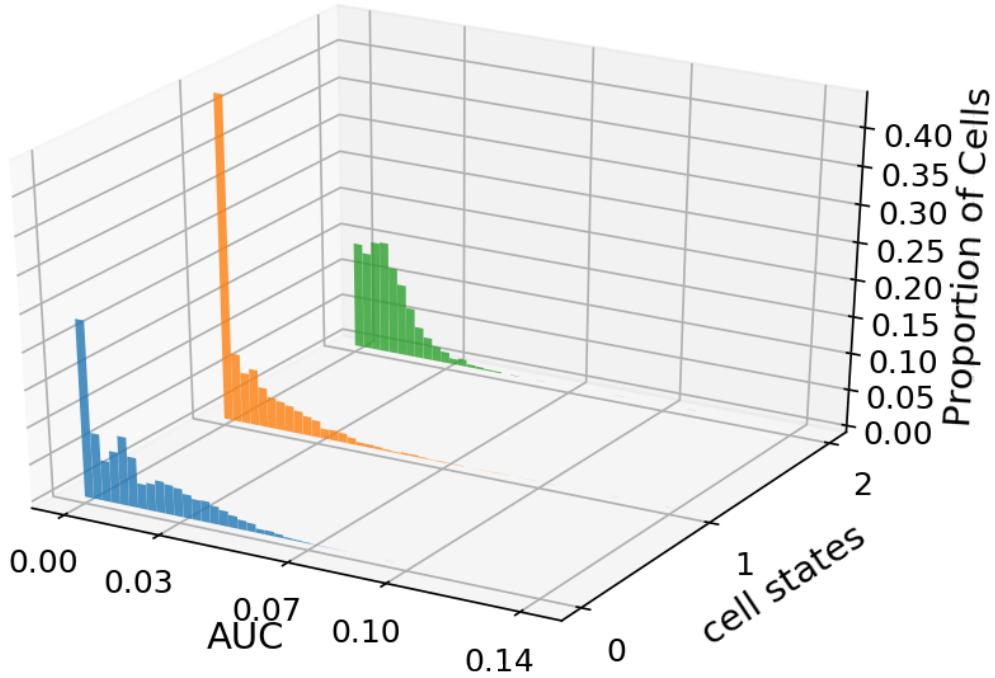
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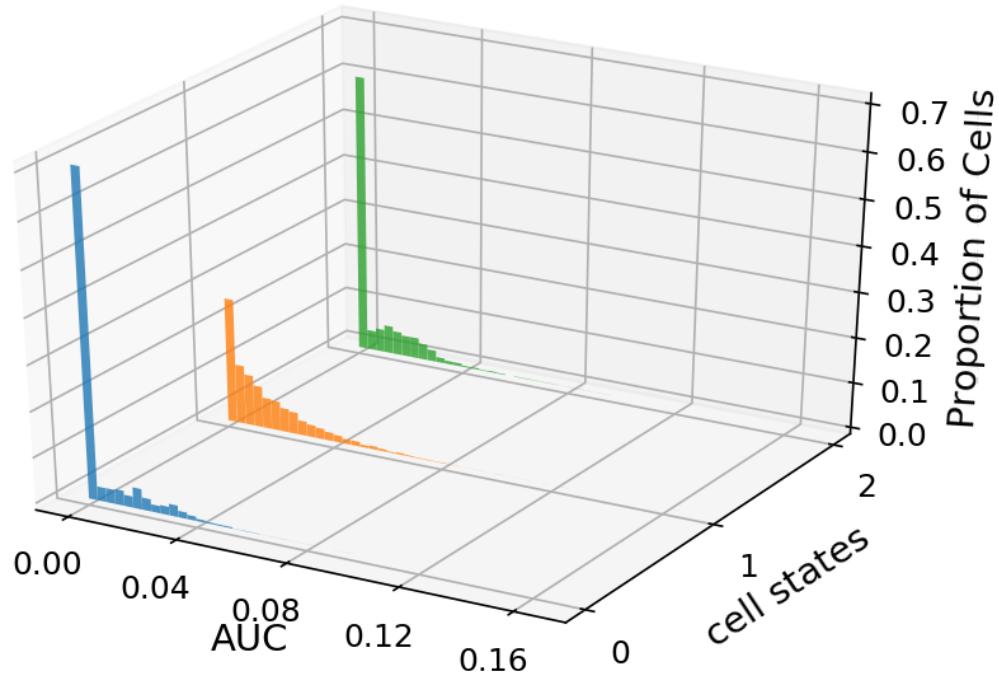
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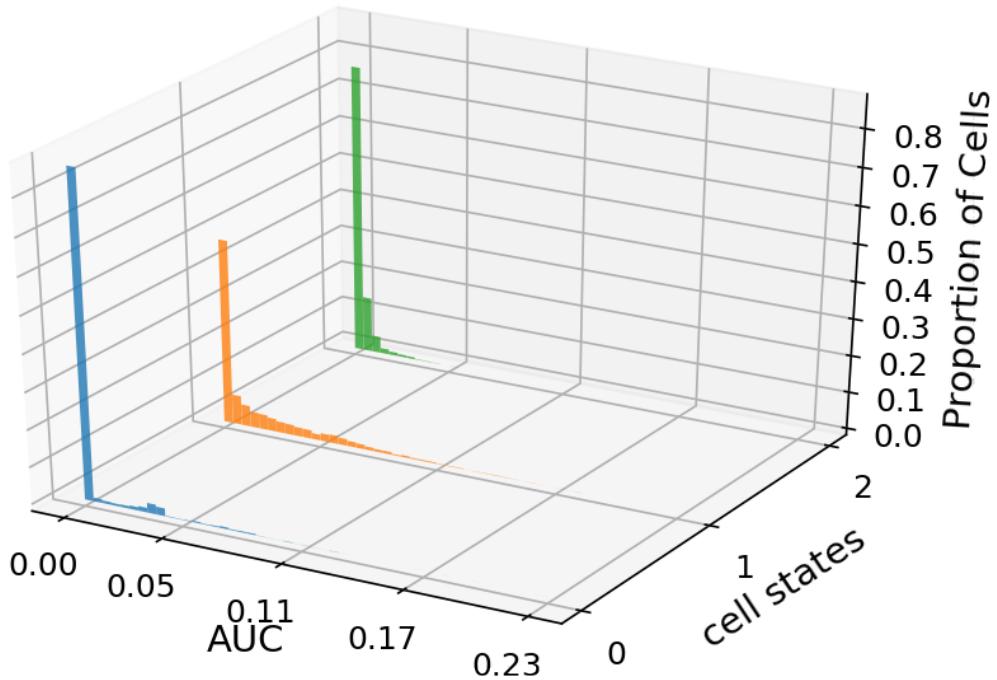
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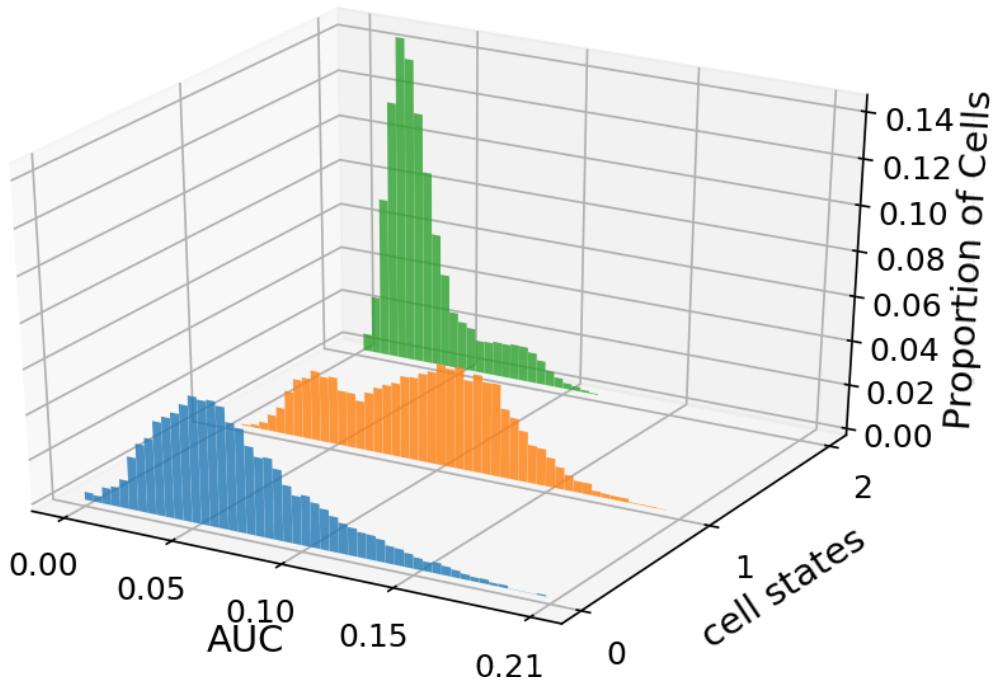
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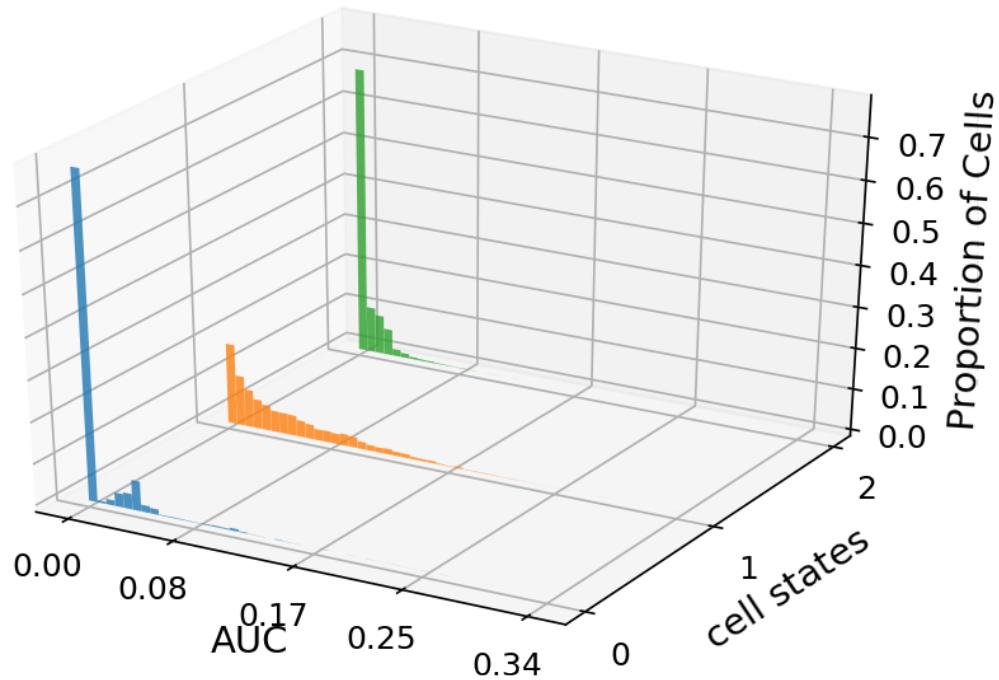
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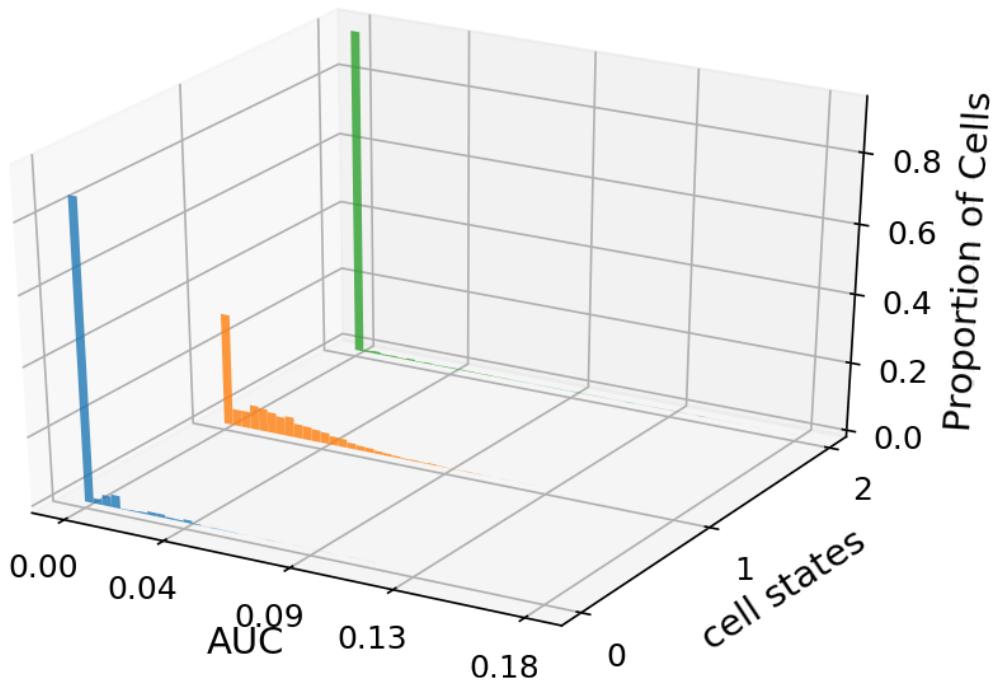
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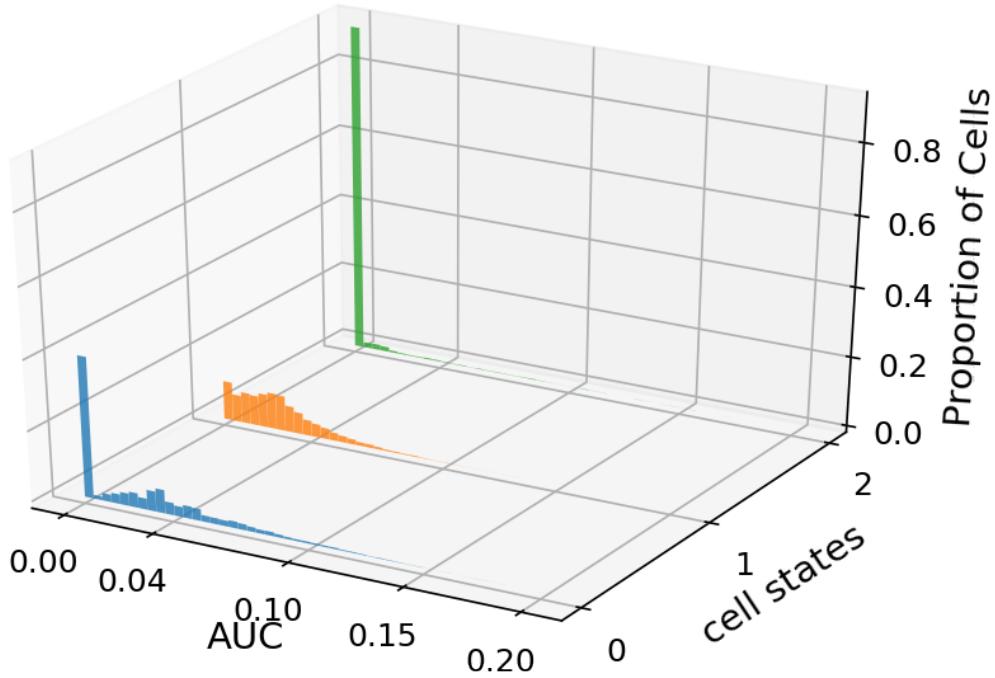
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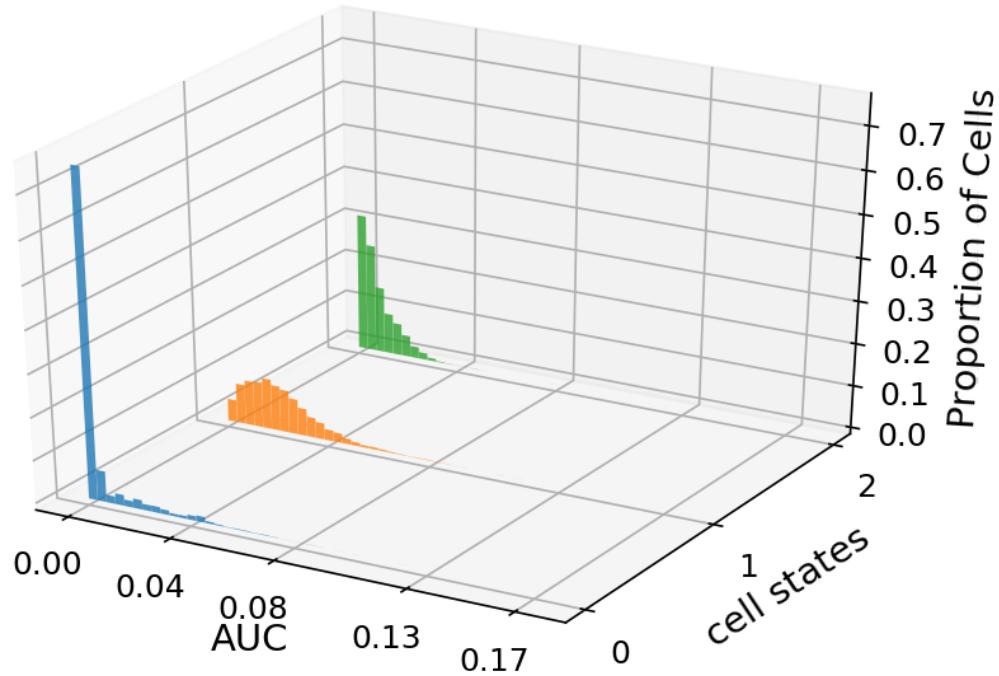
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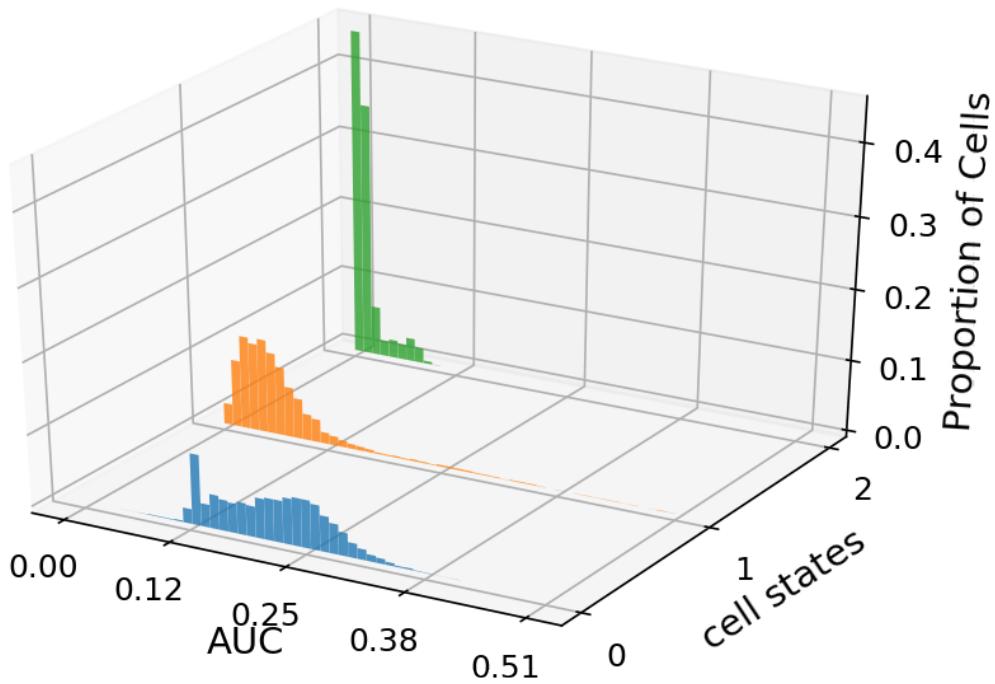
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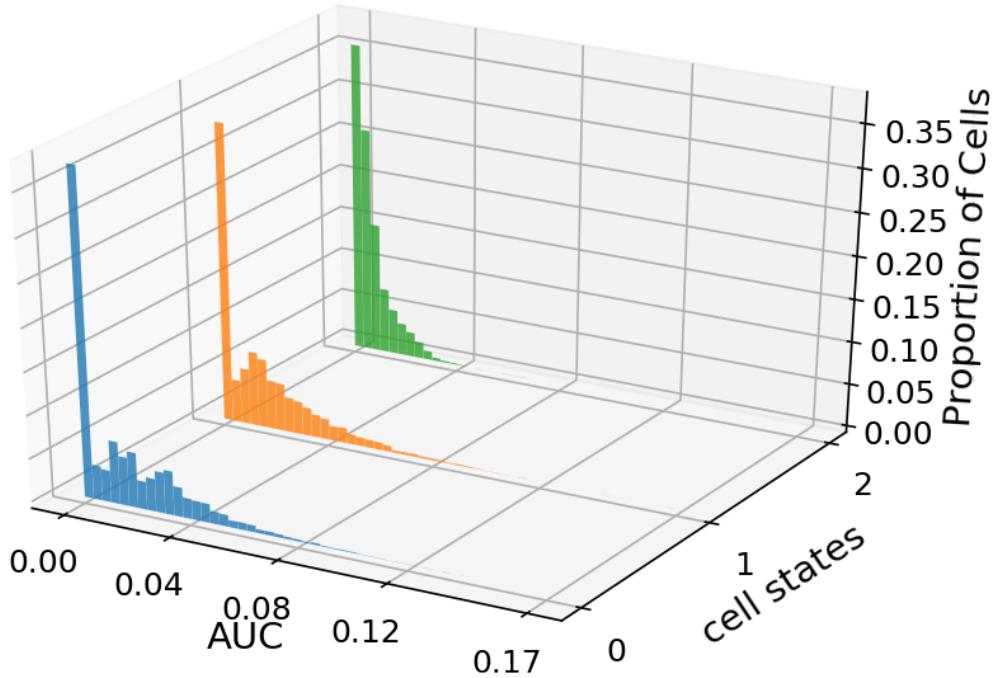
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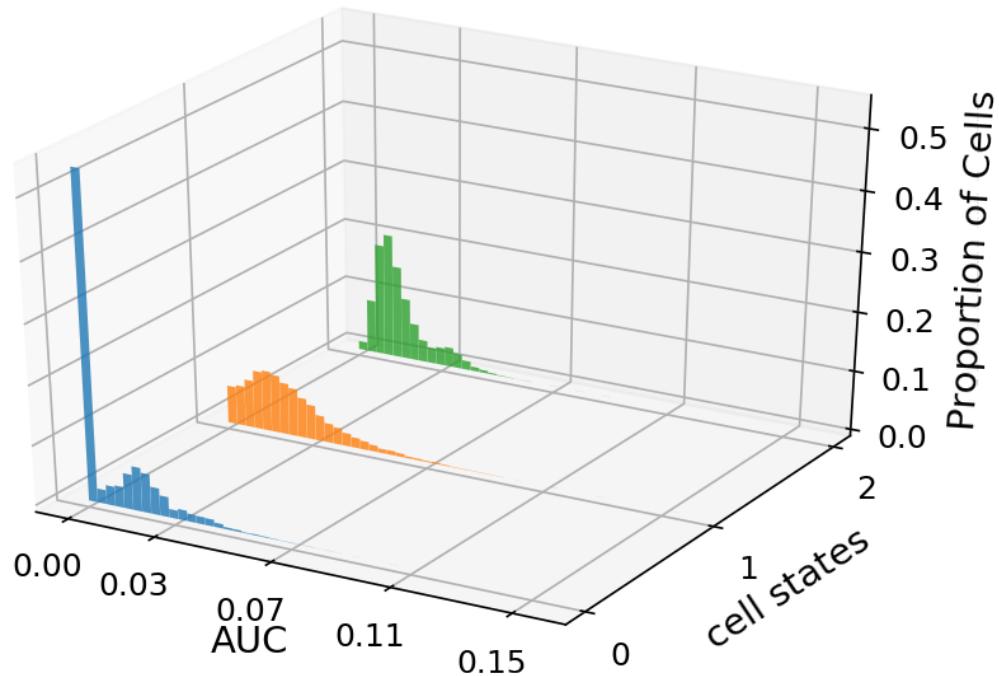
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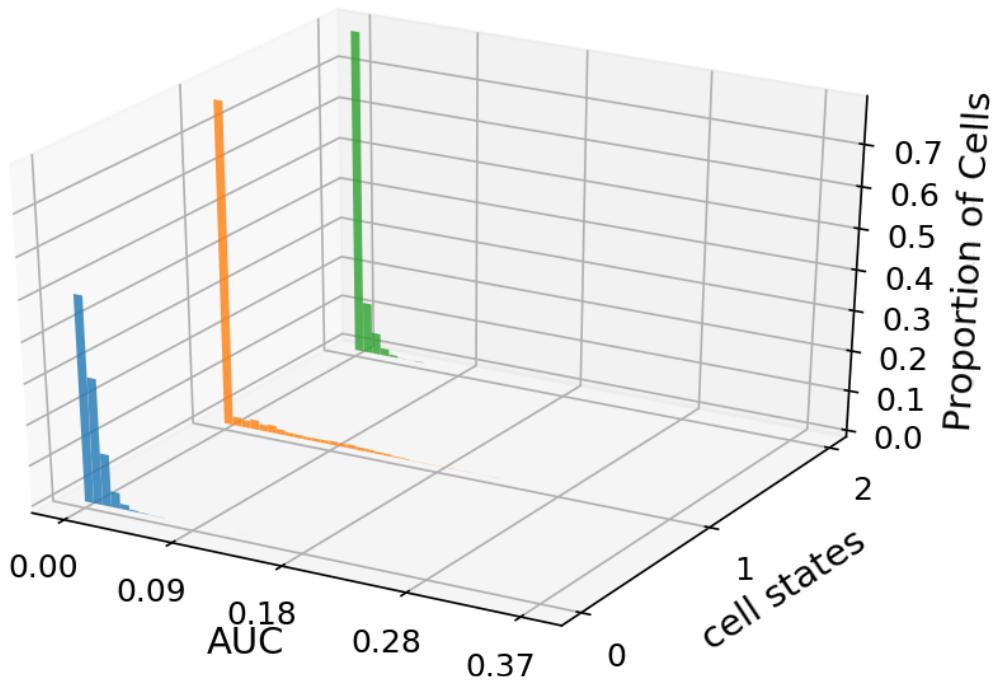
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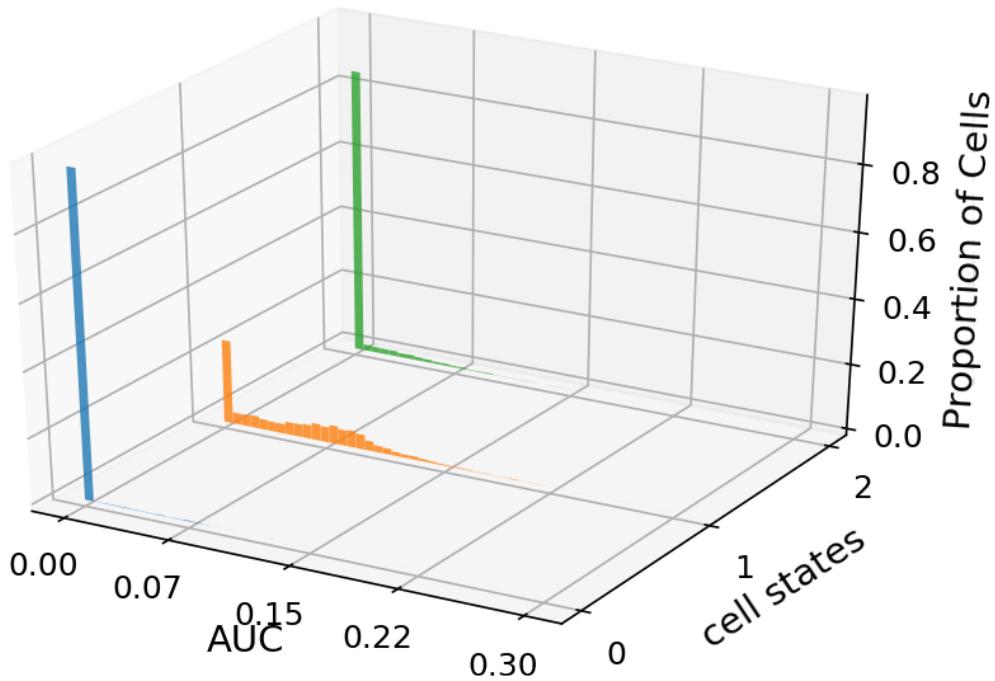
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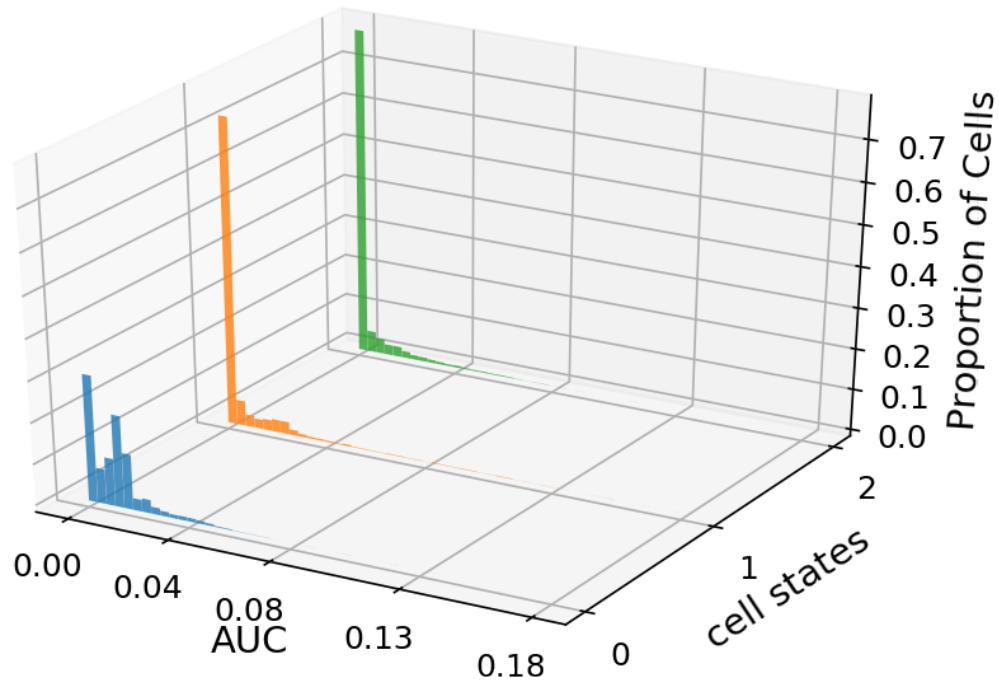
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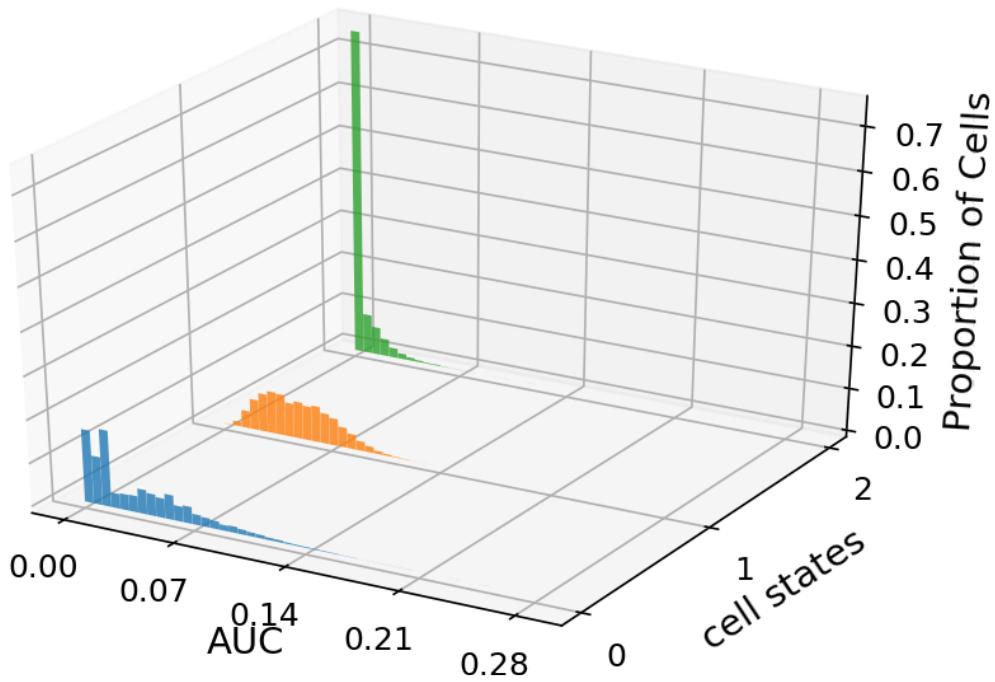
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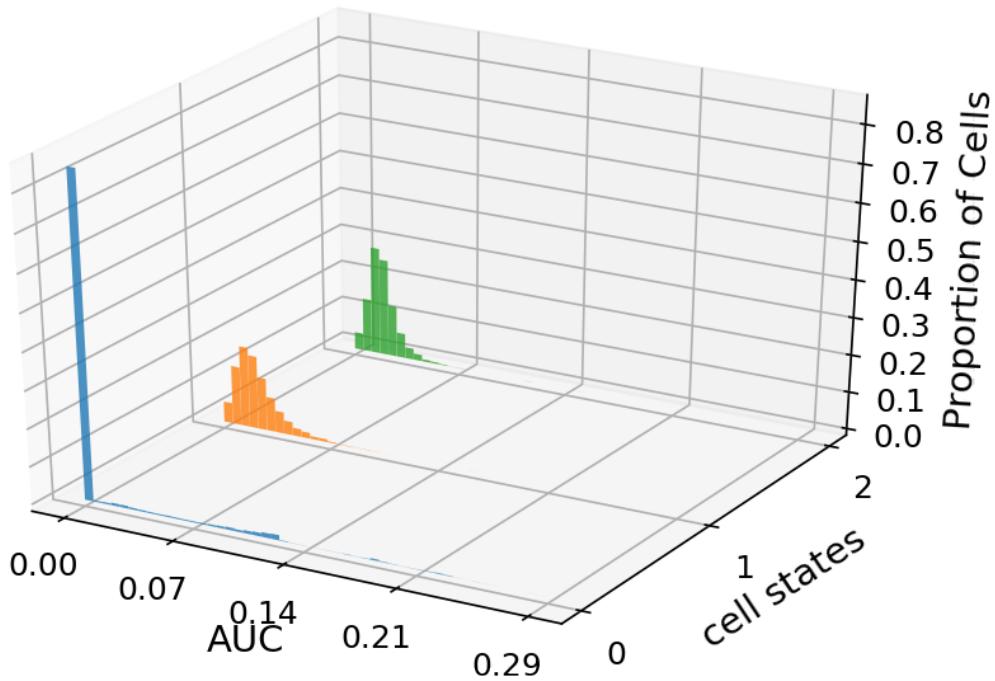
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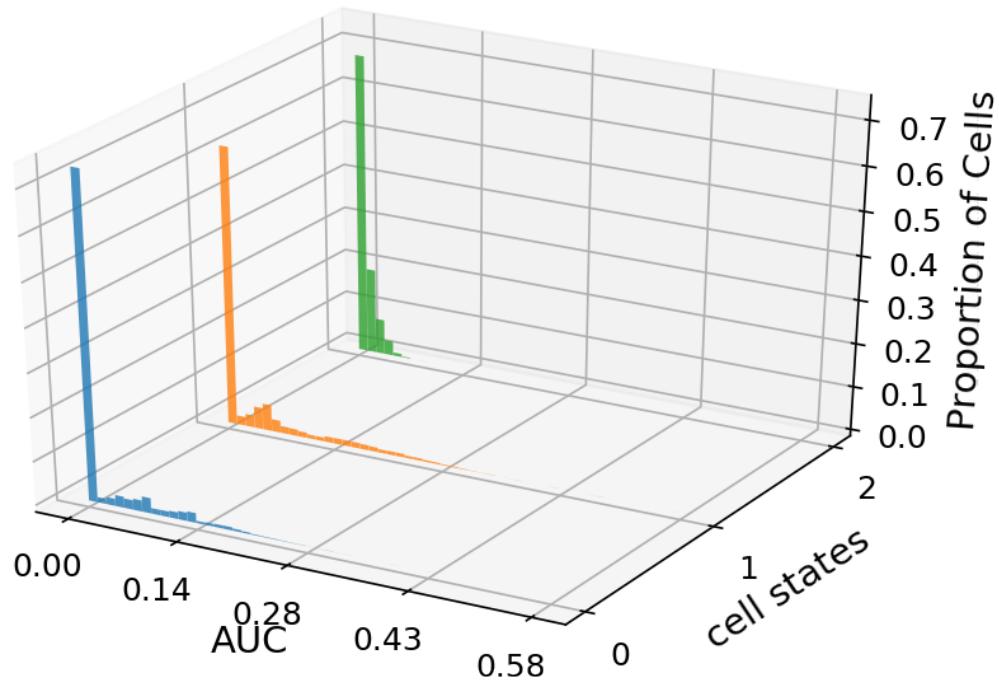
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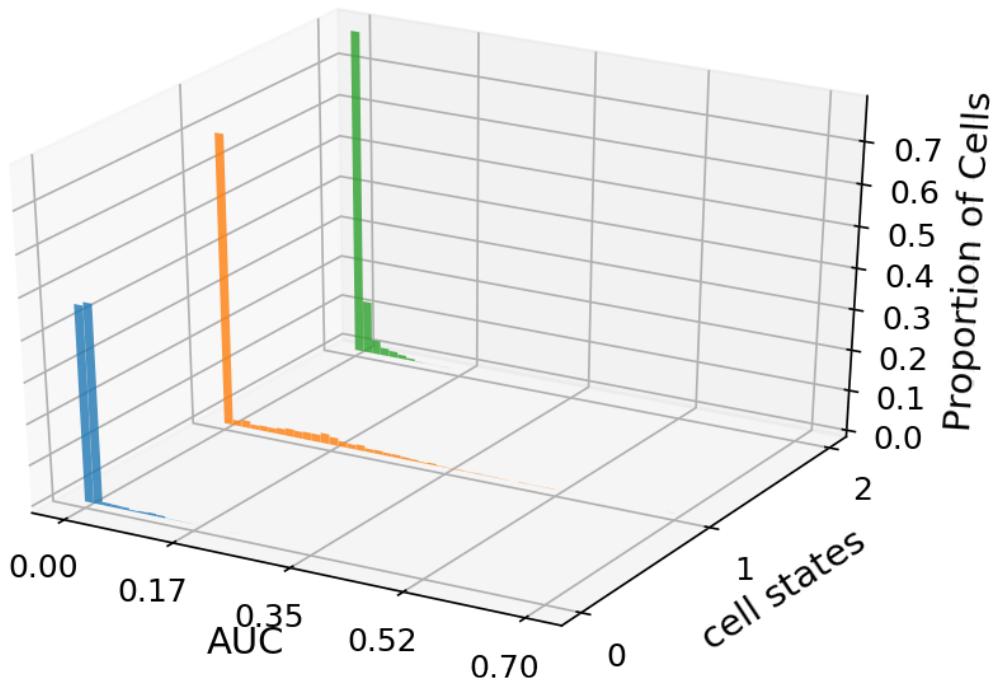
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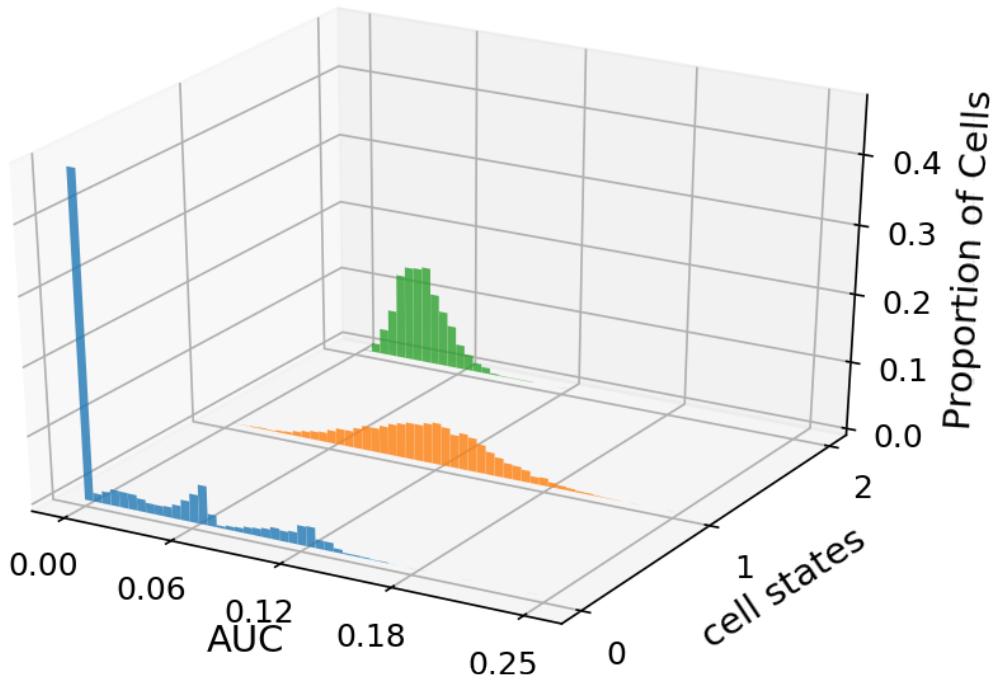
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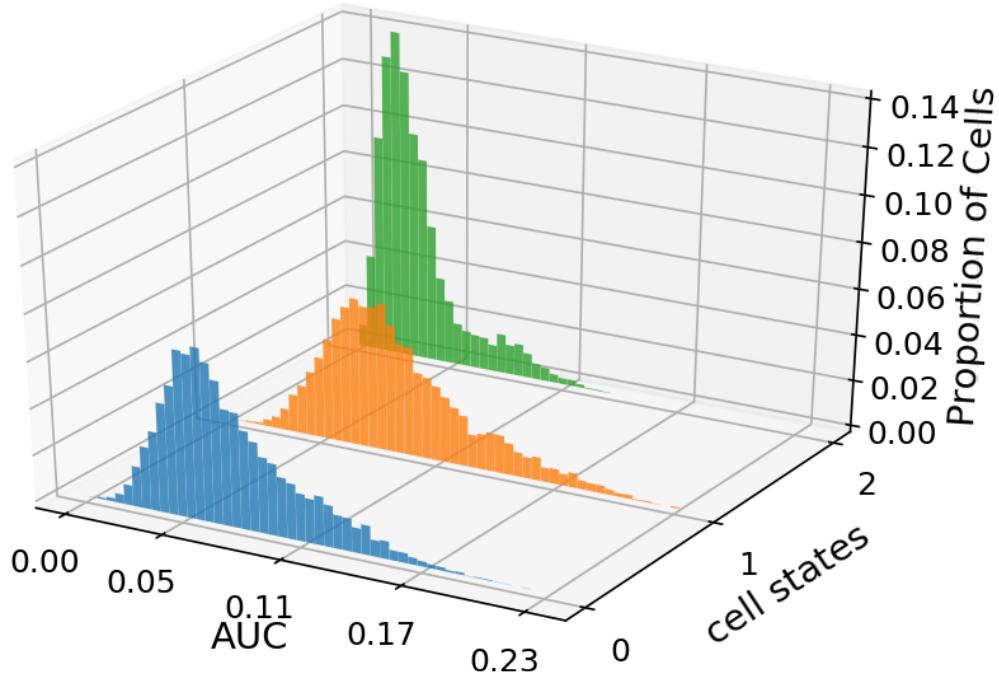
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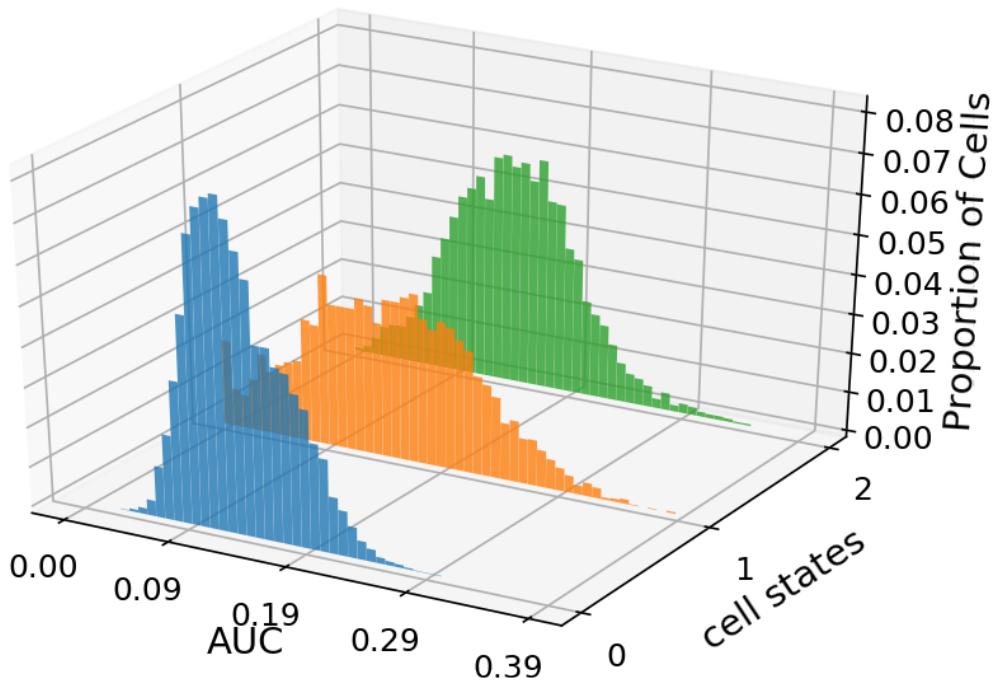
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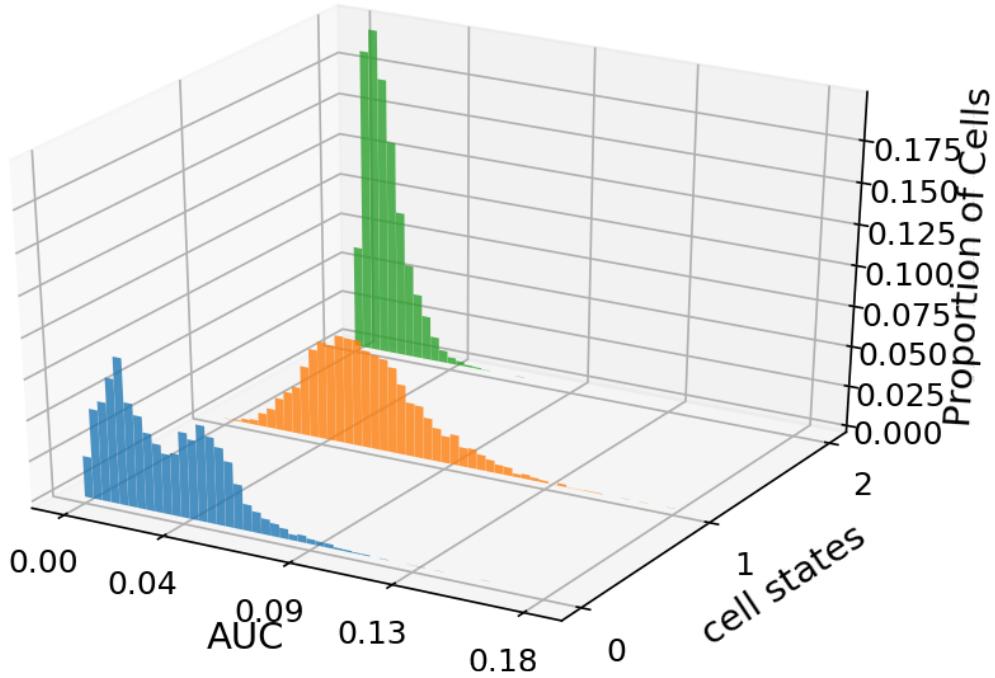
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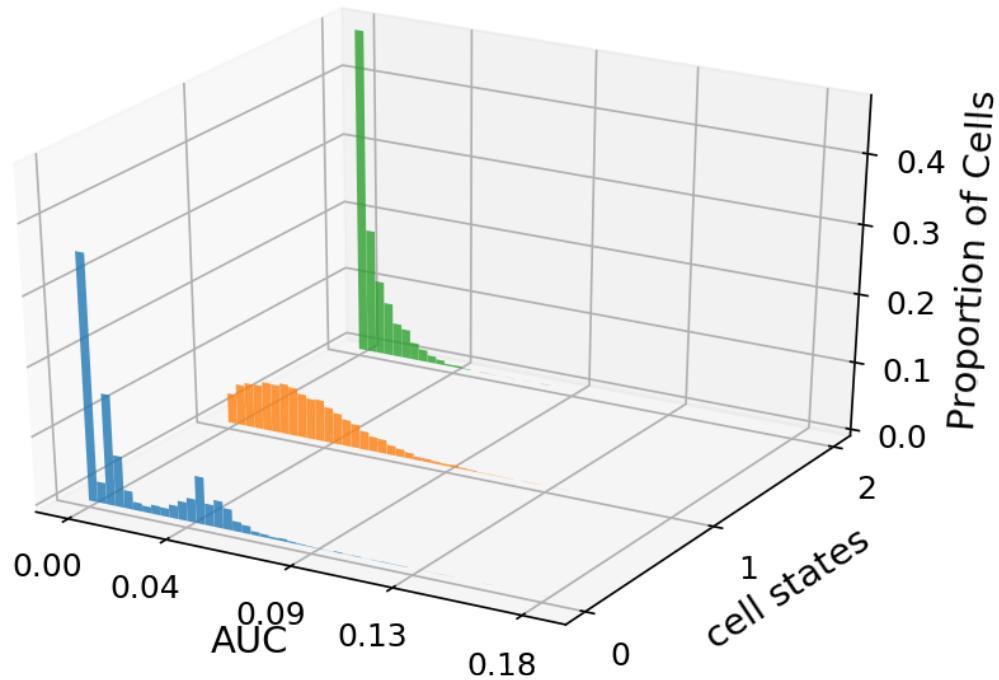
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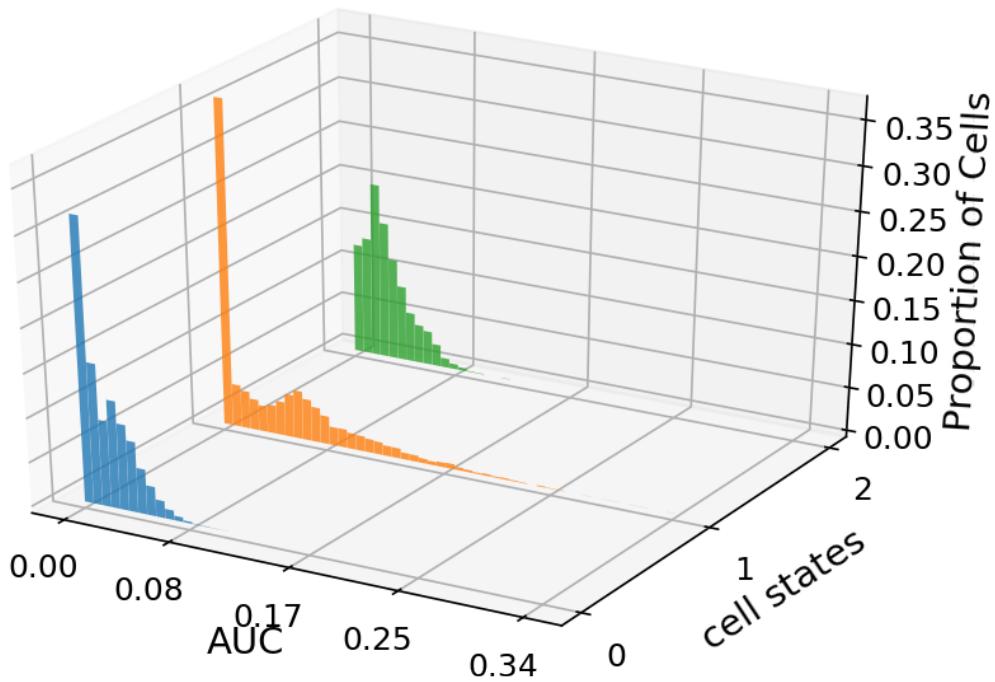
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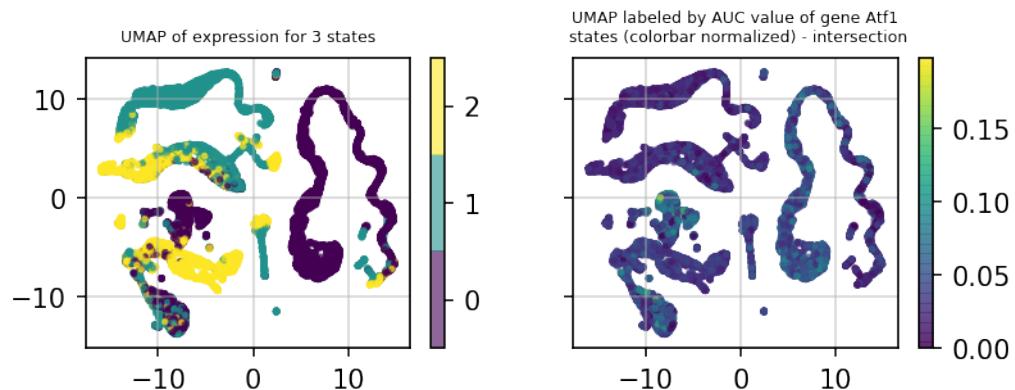


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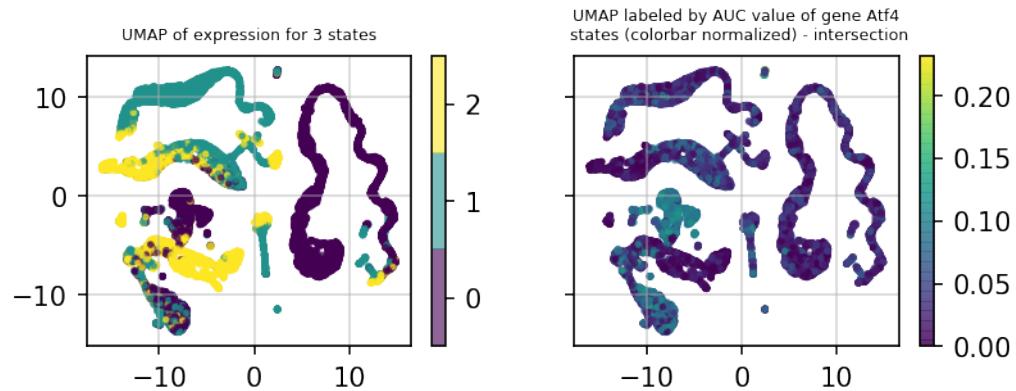
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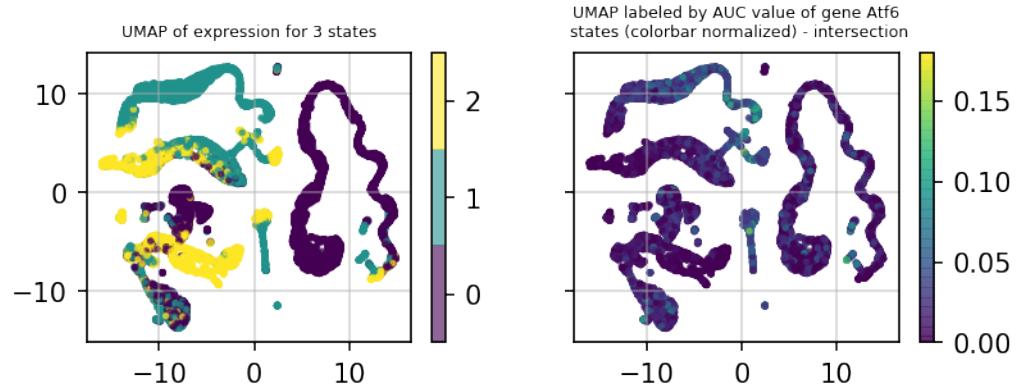


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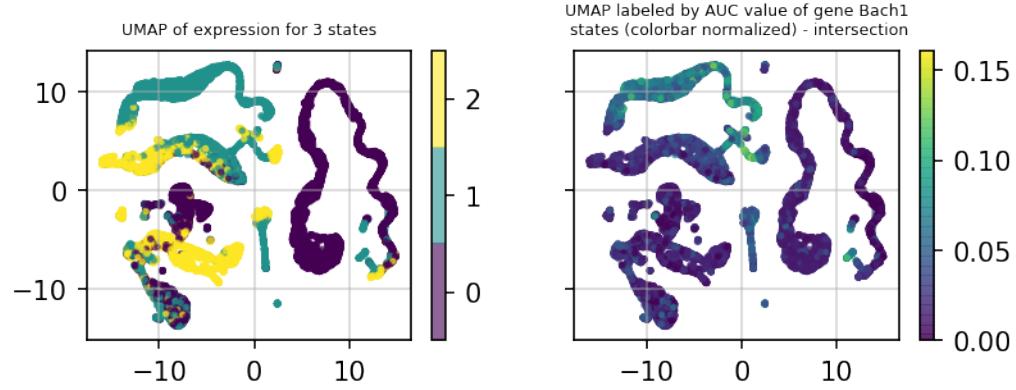
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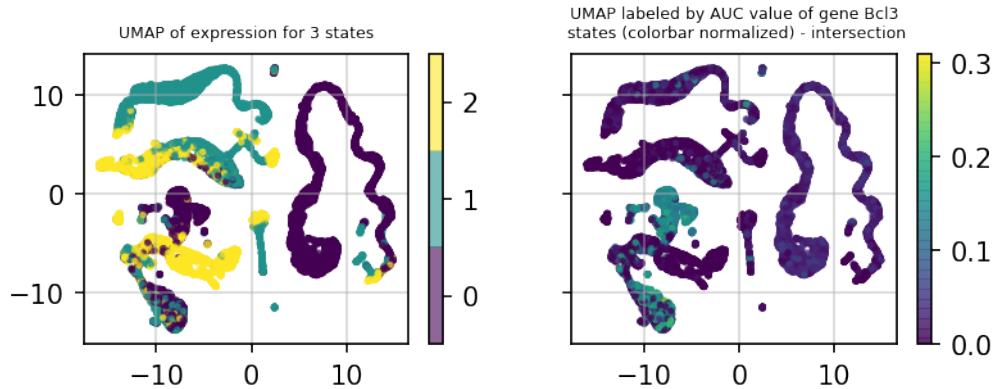
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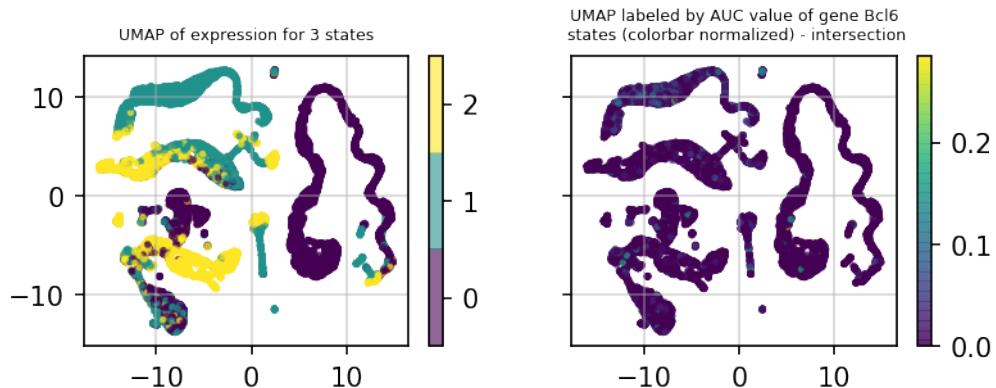
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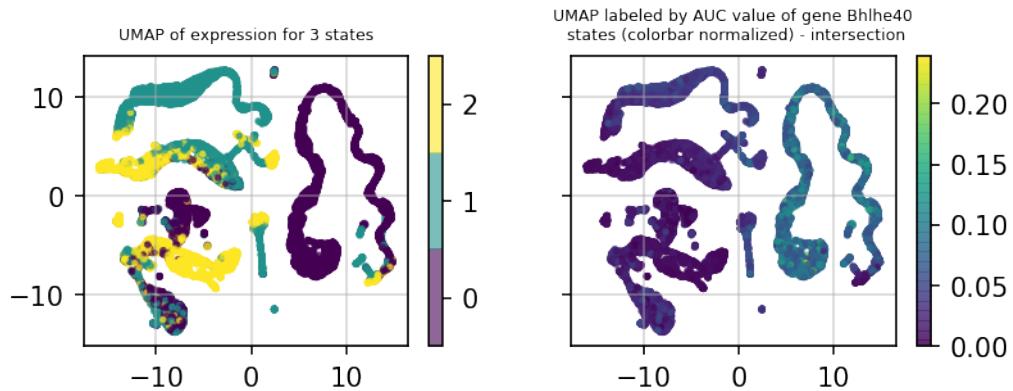
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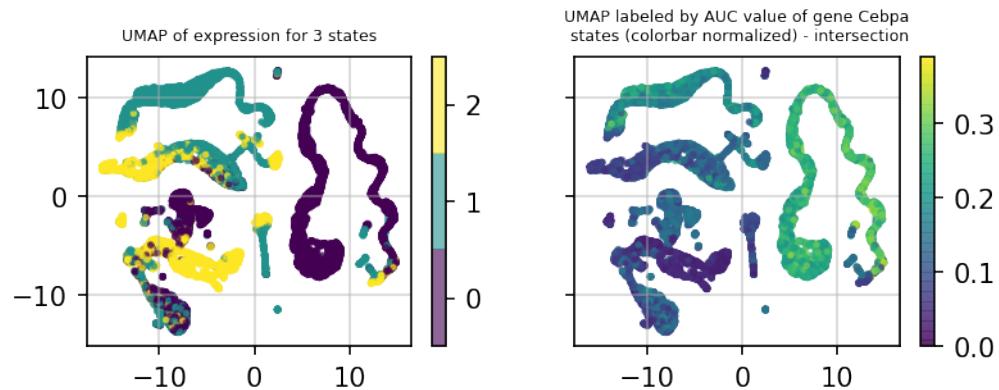
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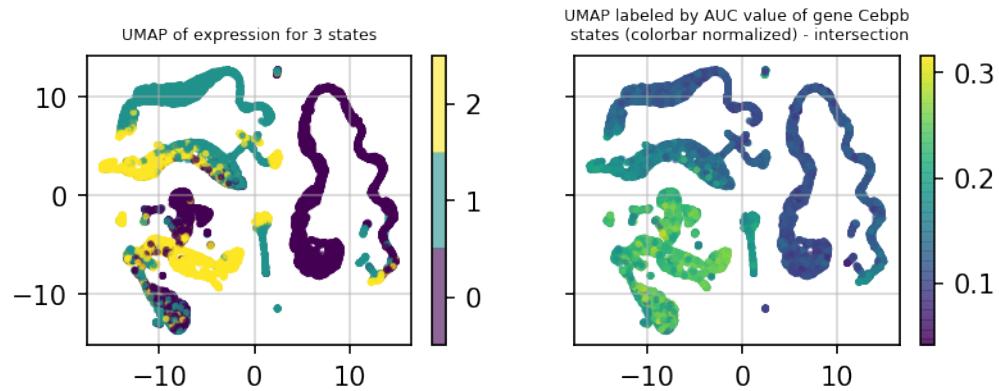
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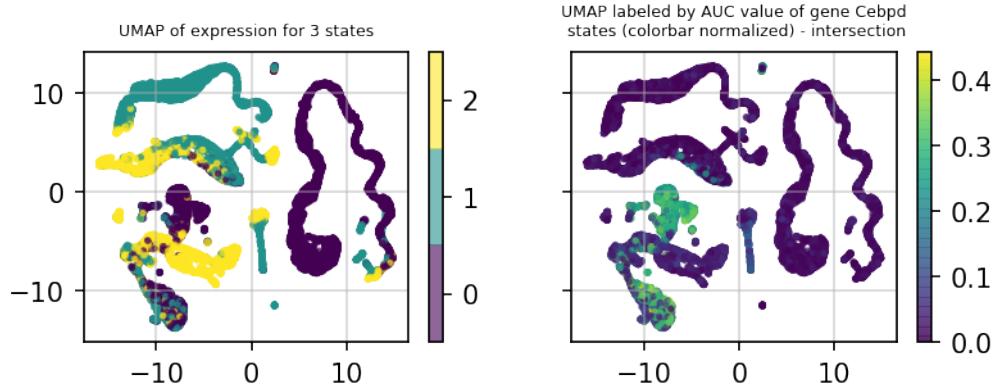
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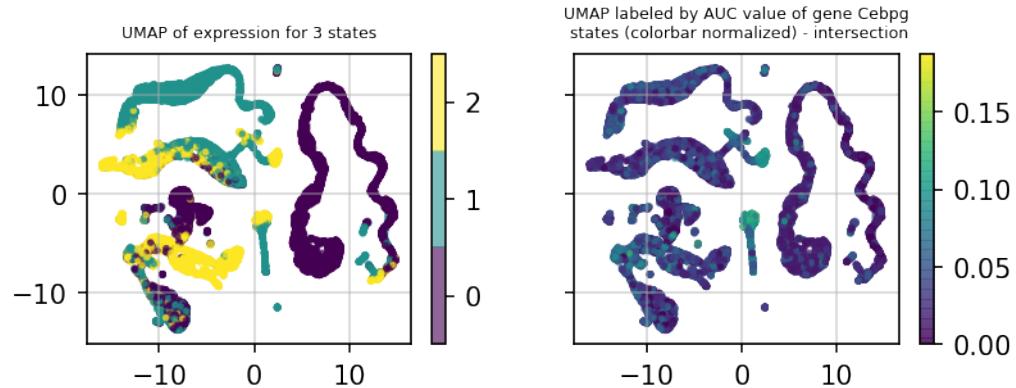
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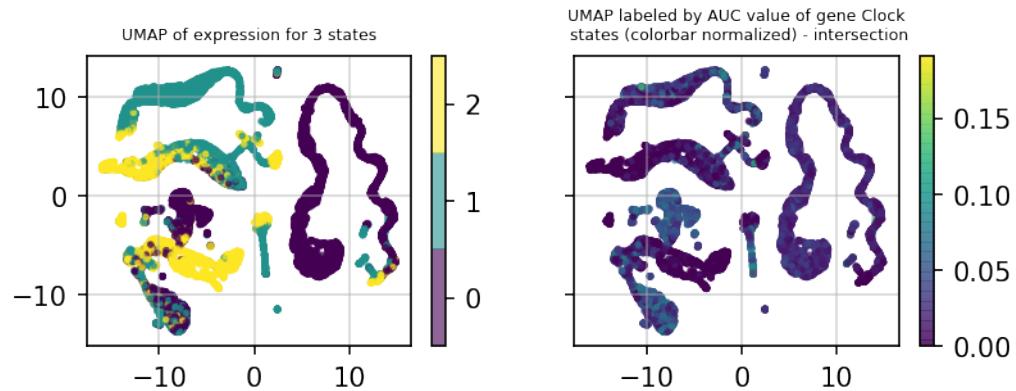
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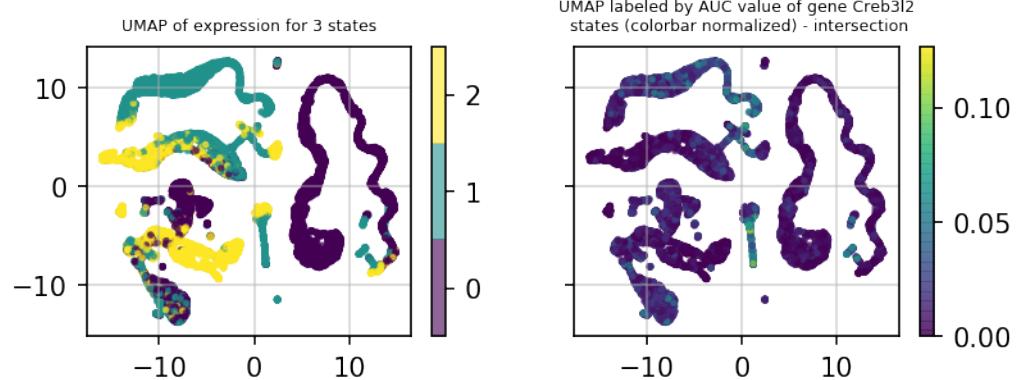
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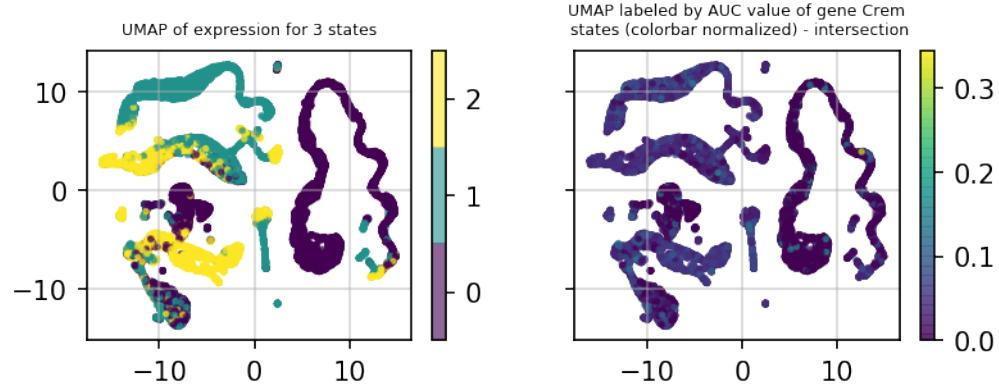
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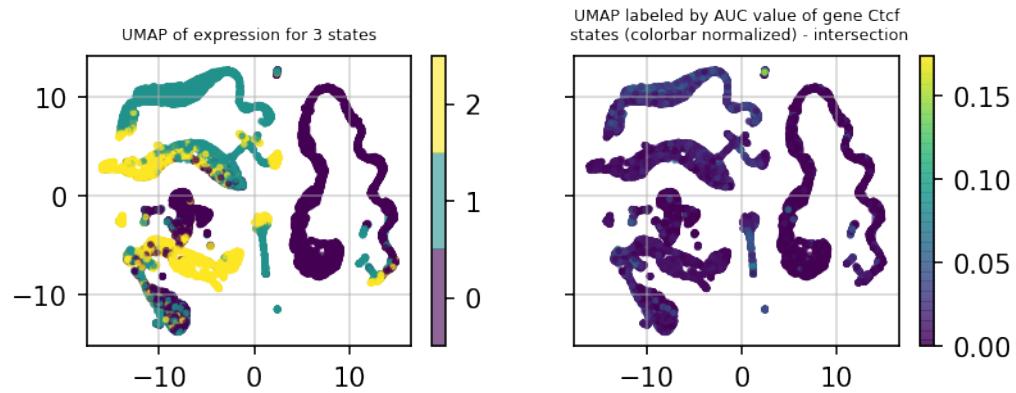
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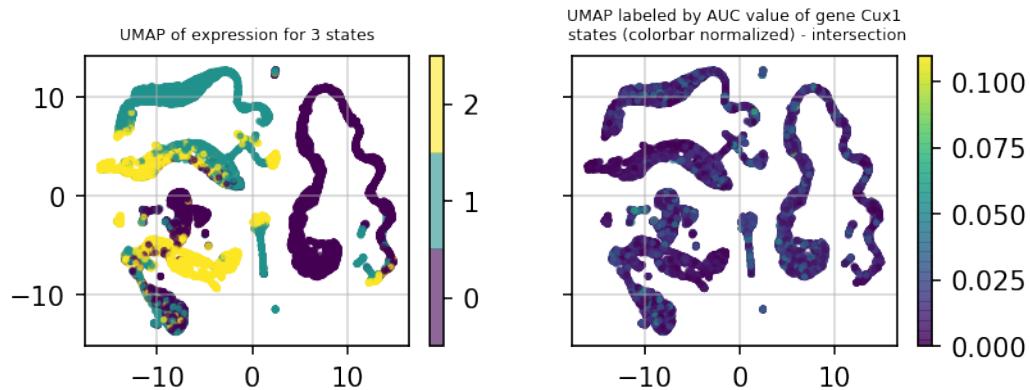
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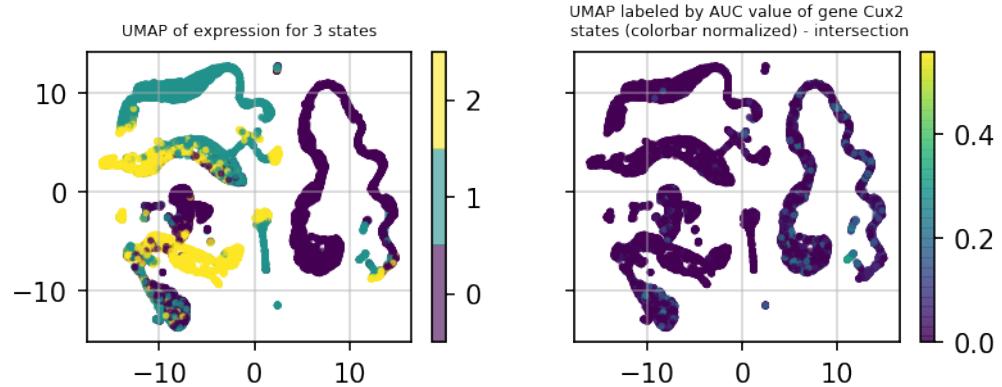
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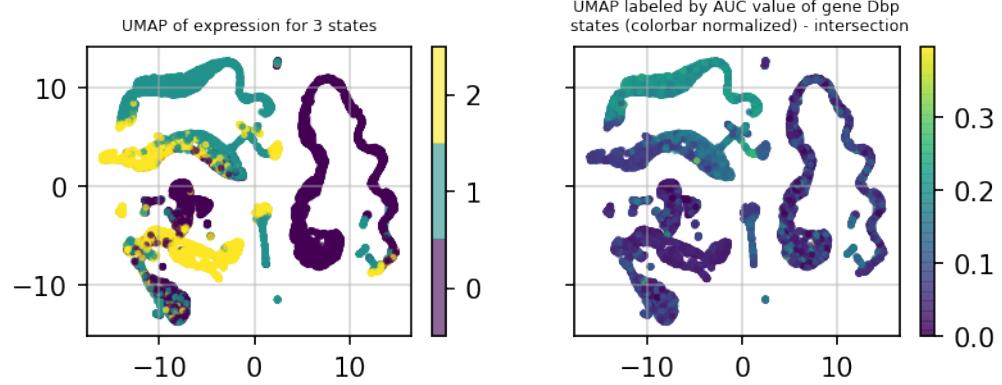


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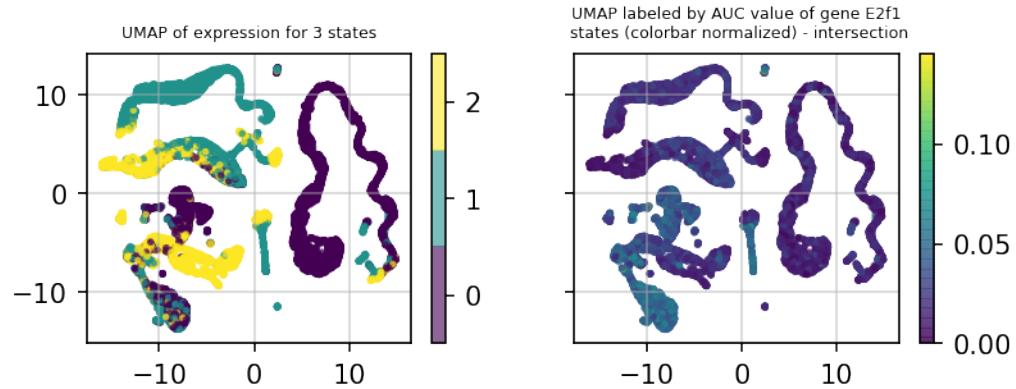
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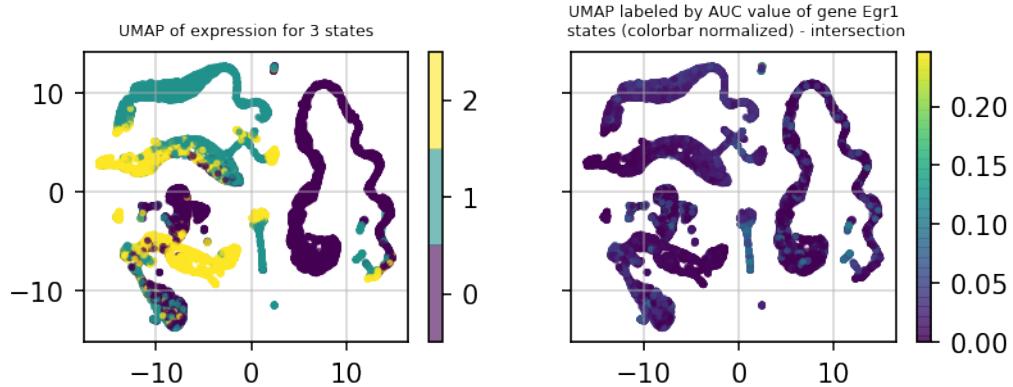


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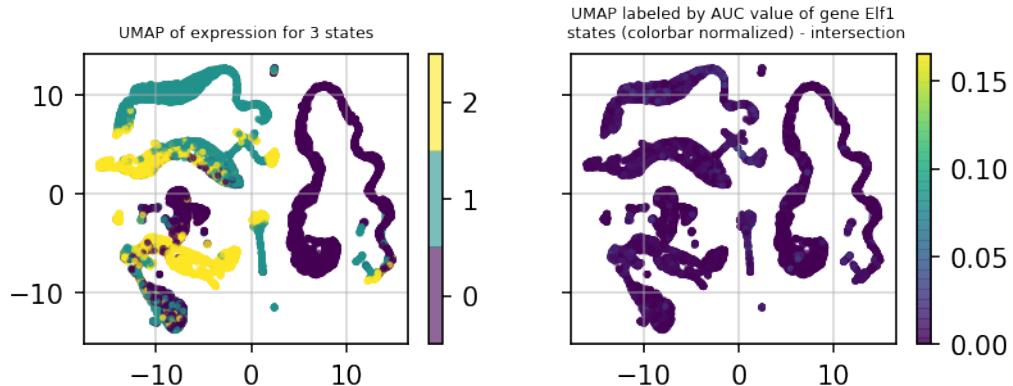
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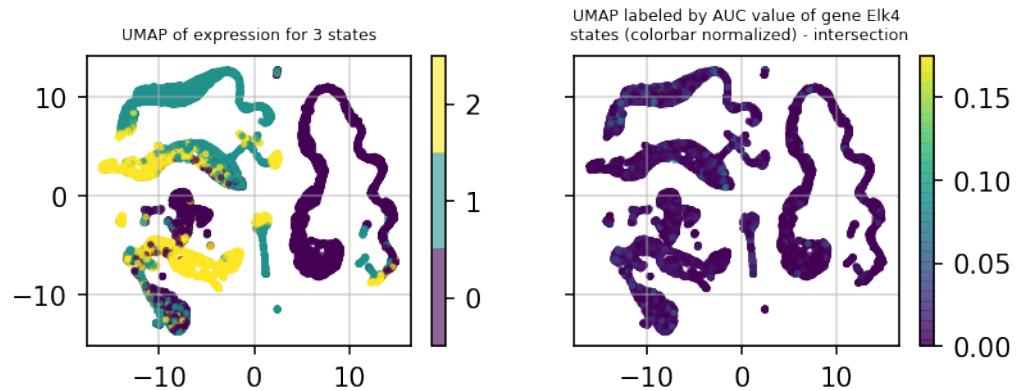
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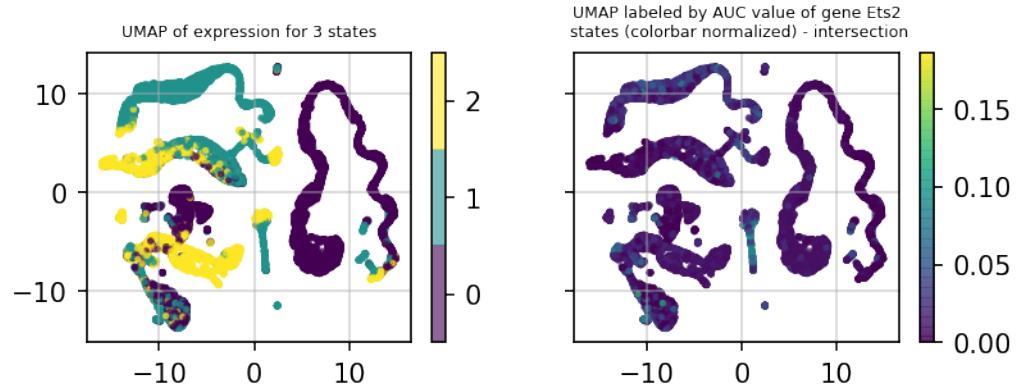


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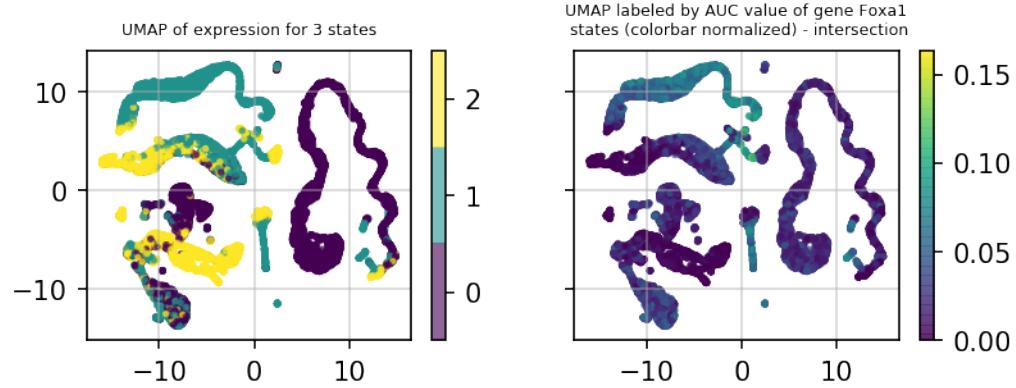
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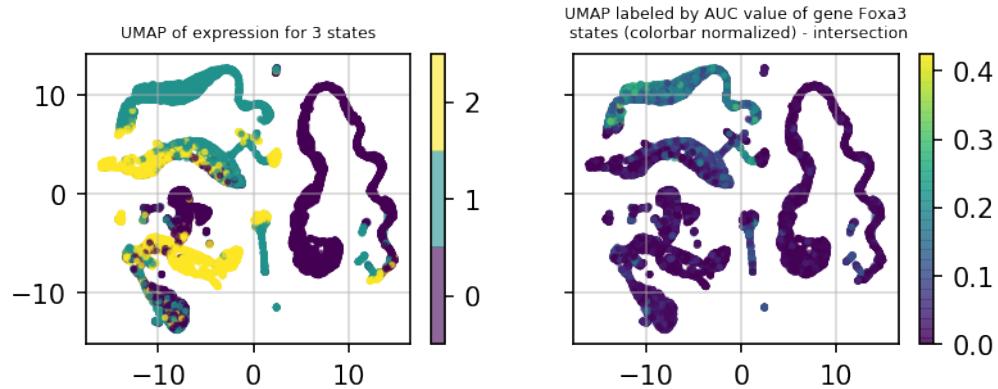


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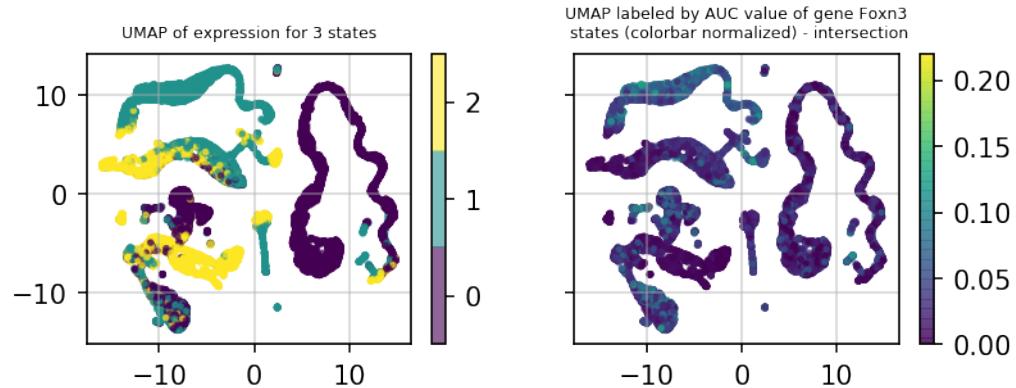
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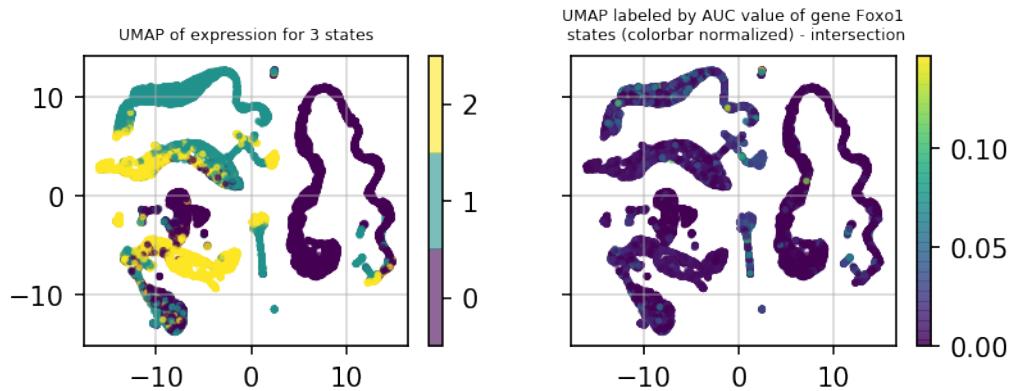
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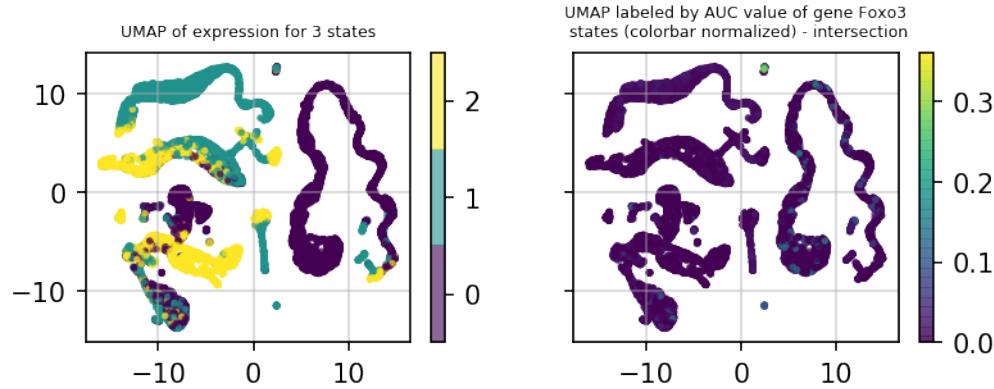
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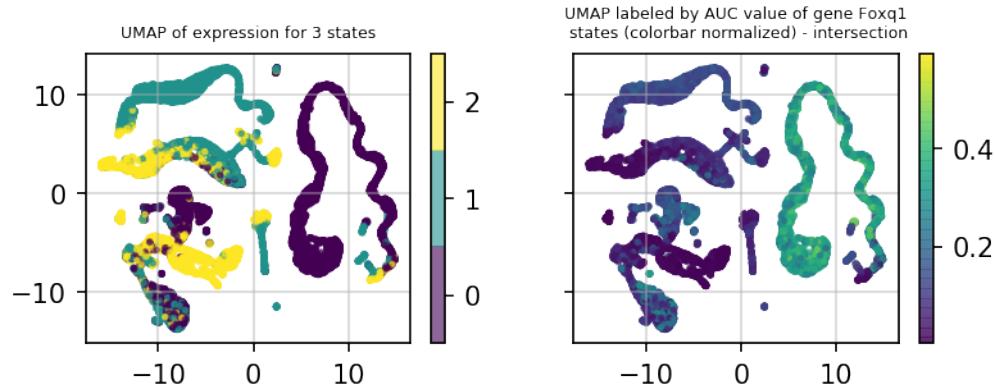
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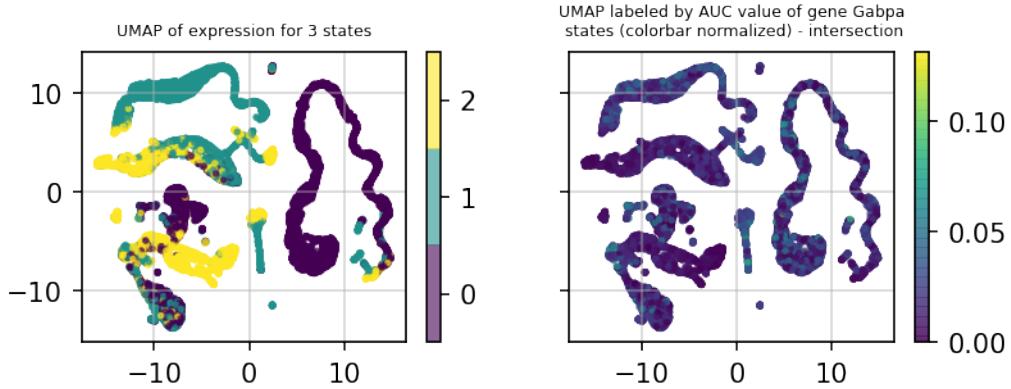
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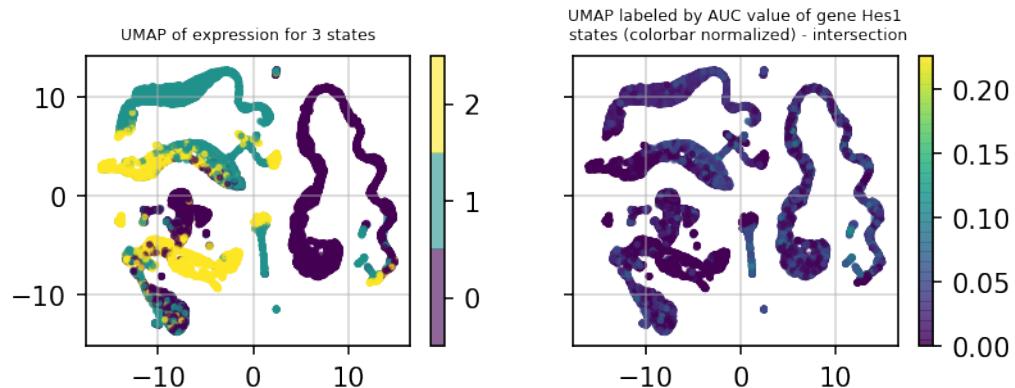
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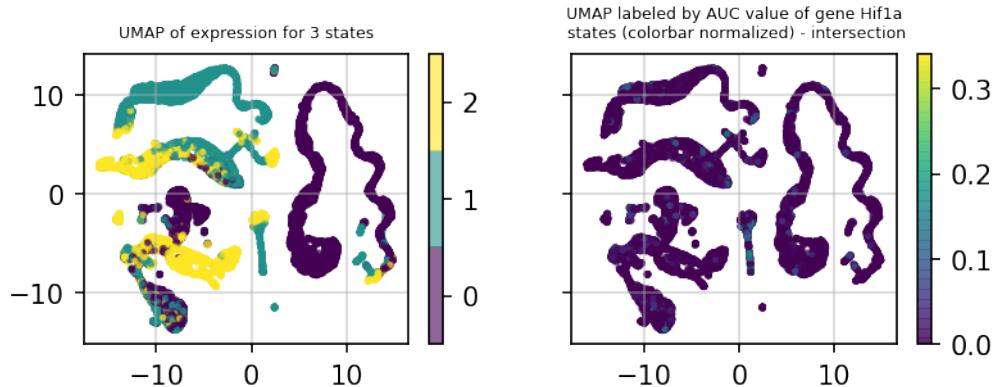
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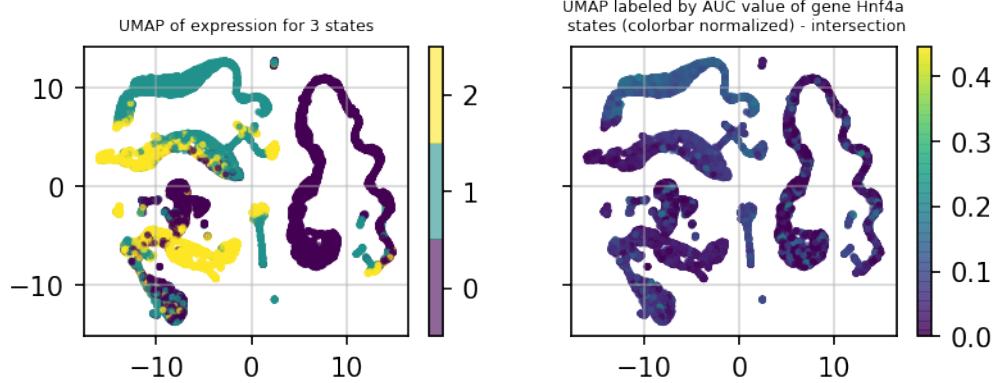
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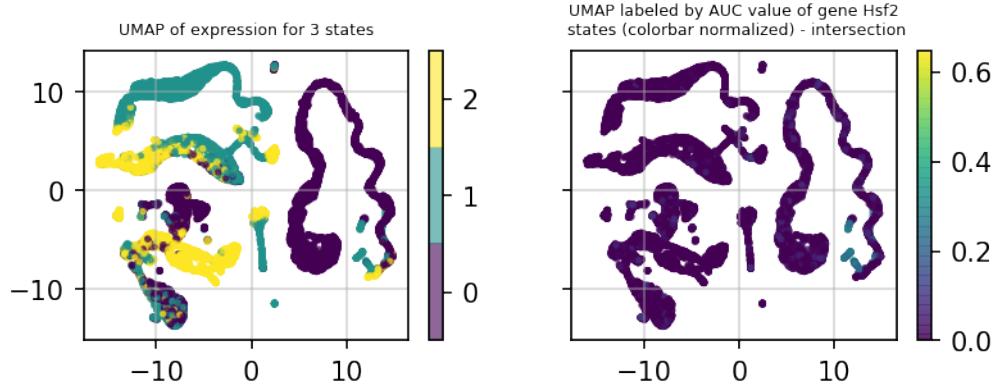
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Hnf4a

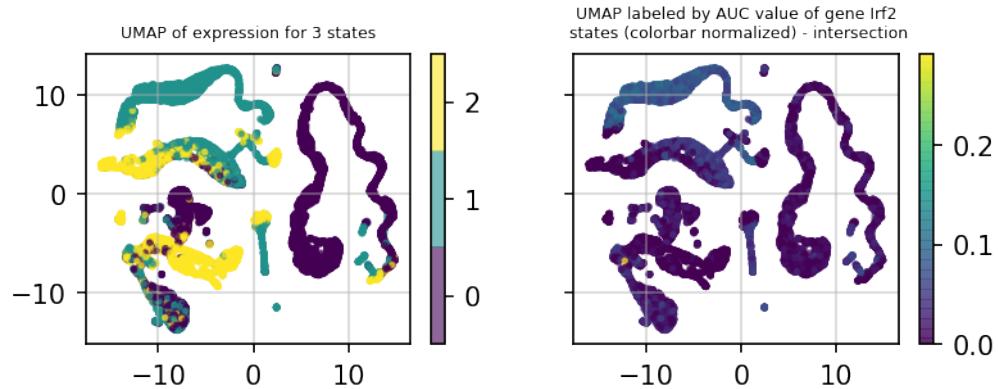


Hsf2



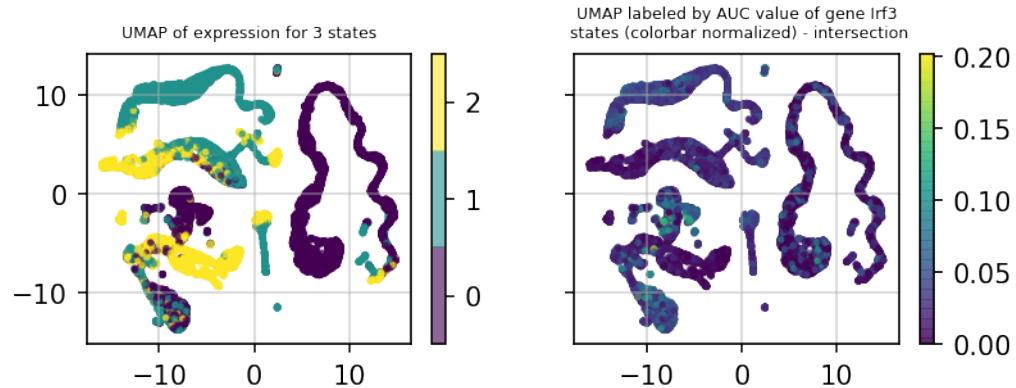
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Irf2



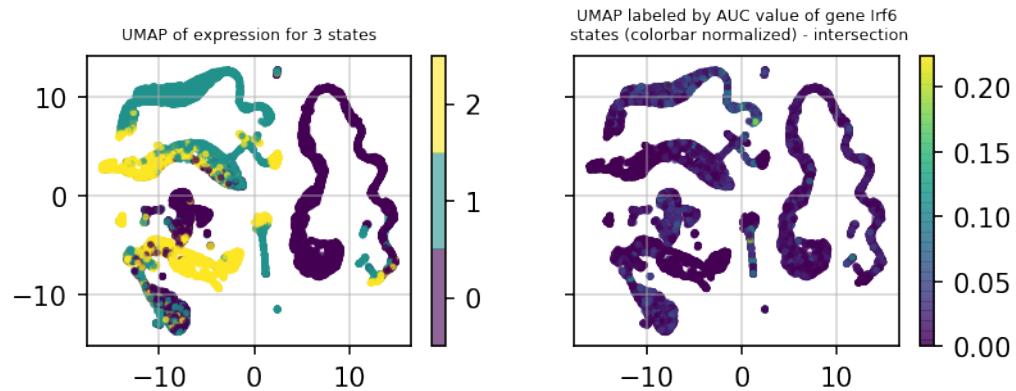
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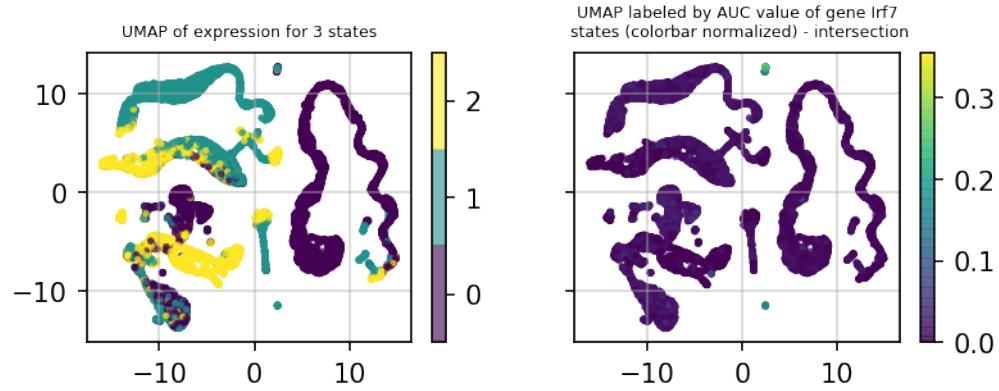


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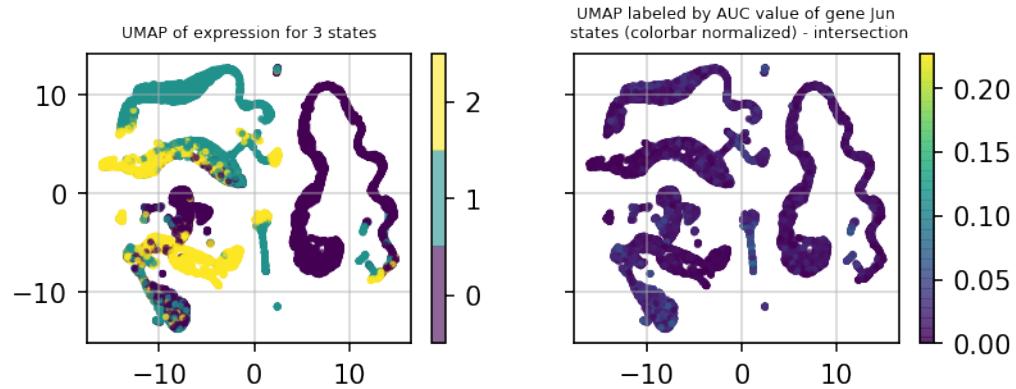
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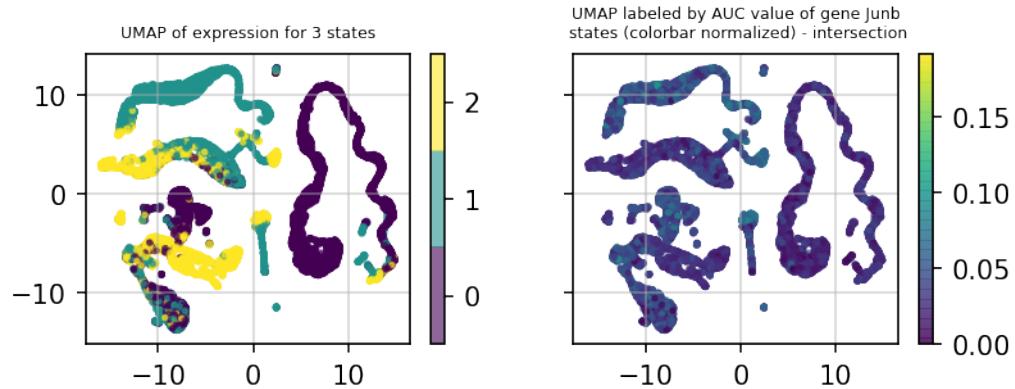


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Jun



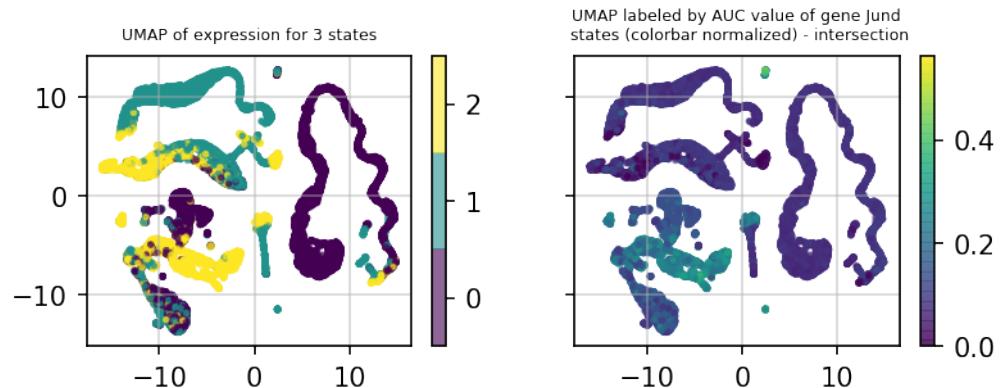
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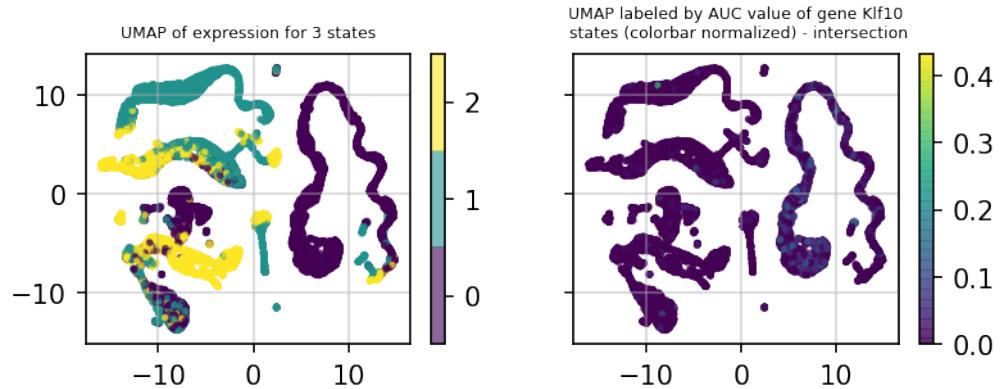
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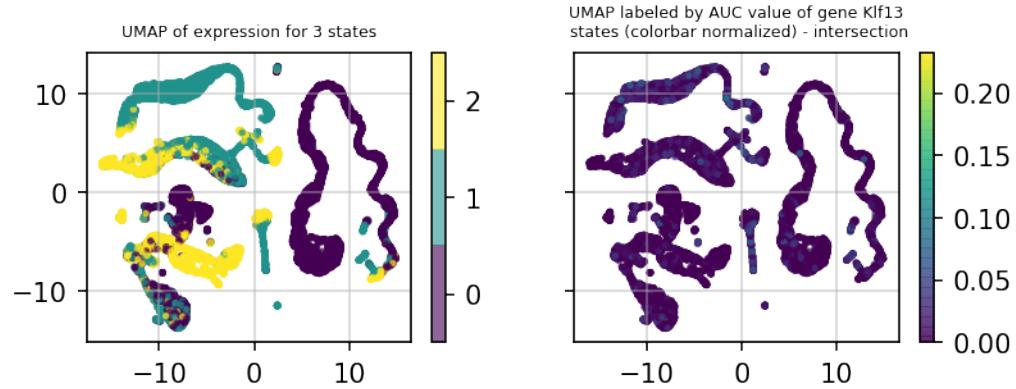


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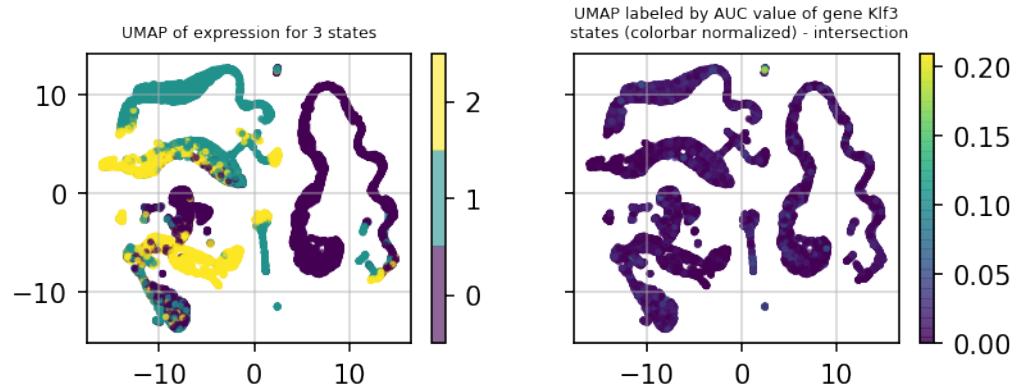
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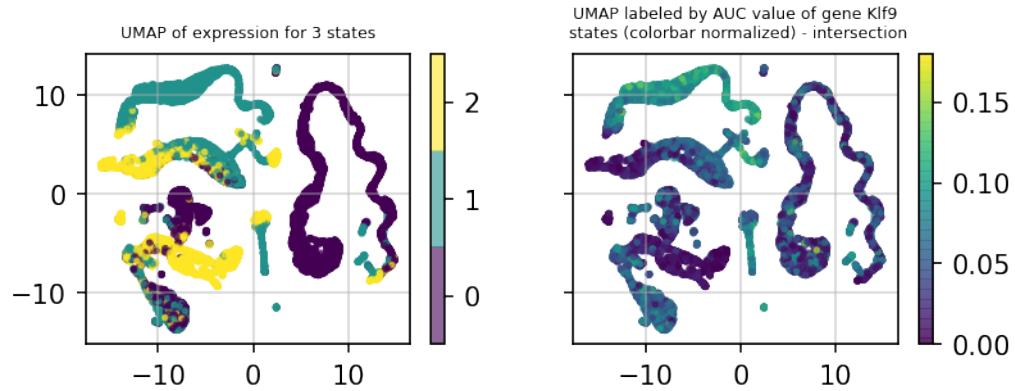
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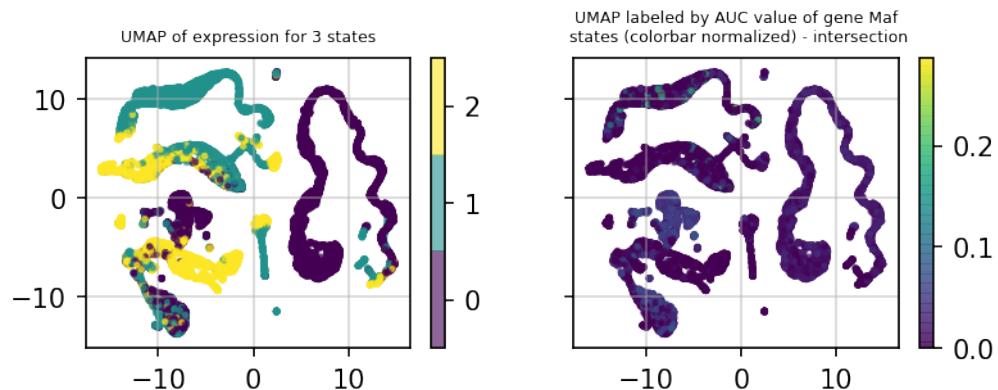
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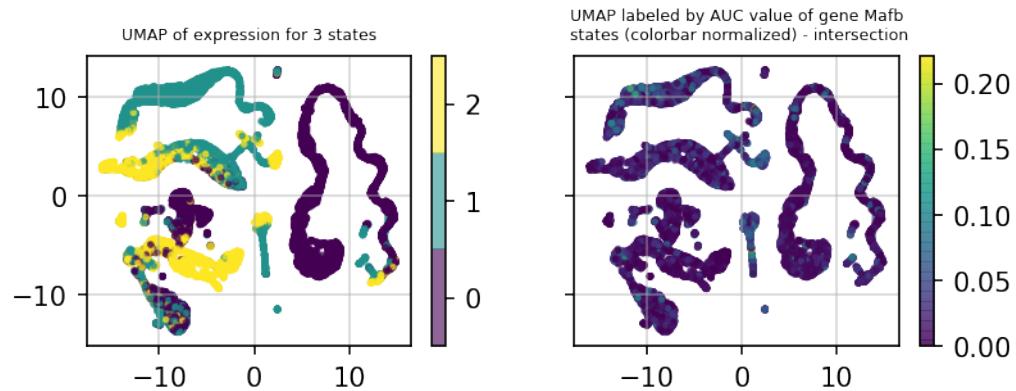
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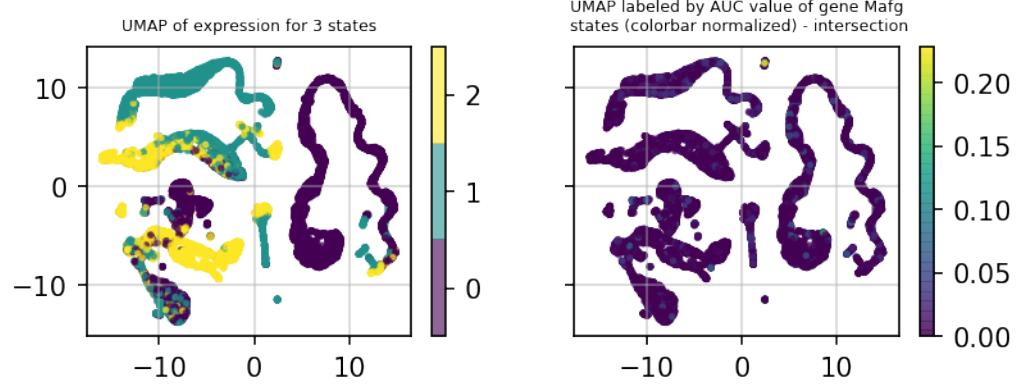
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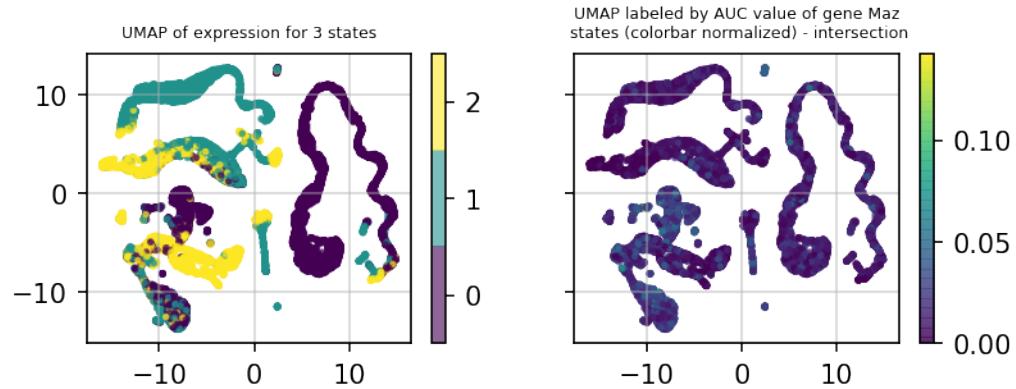
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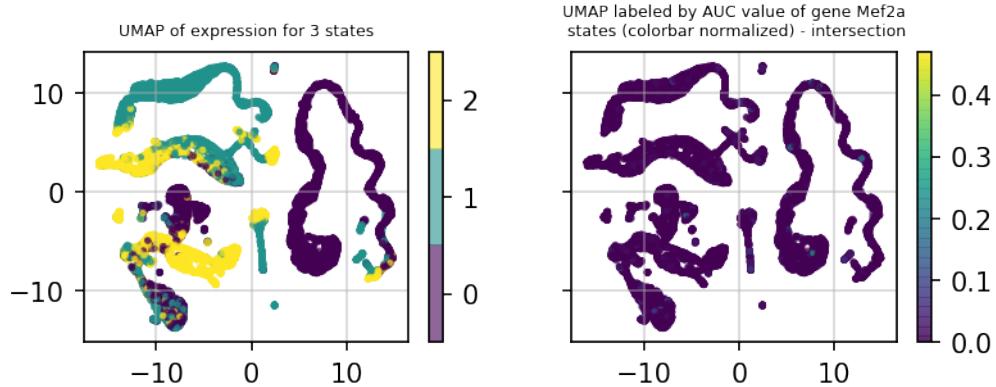
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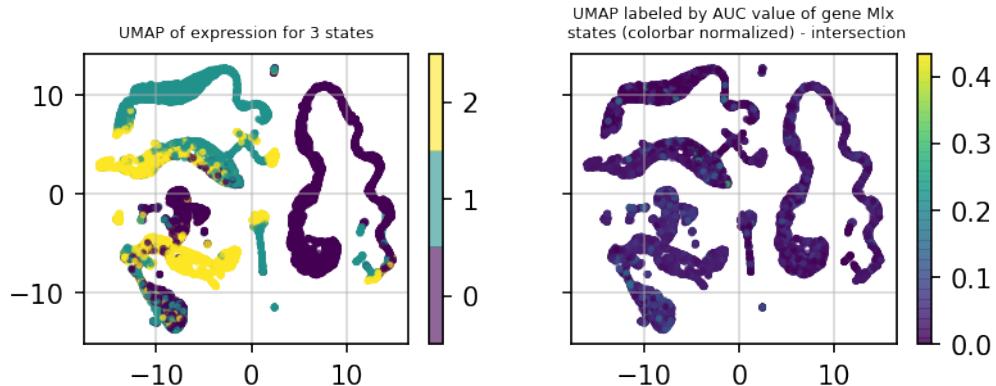
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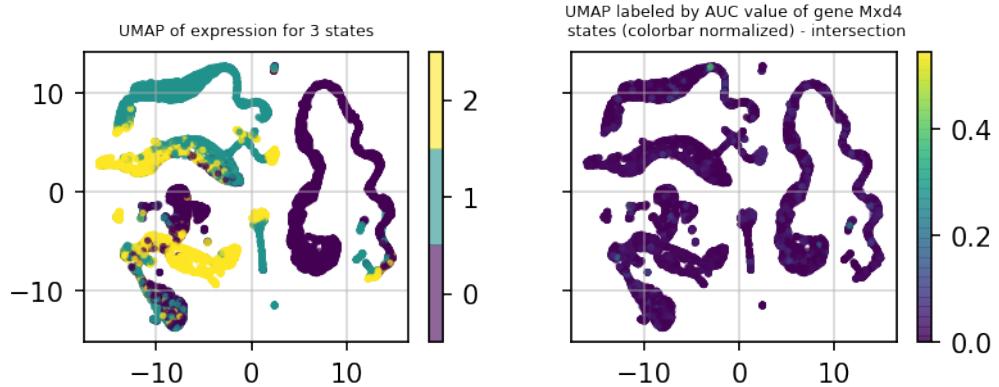
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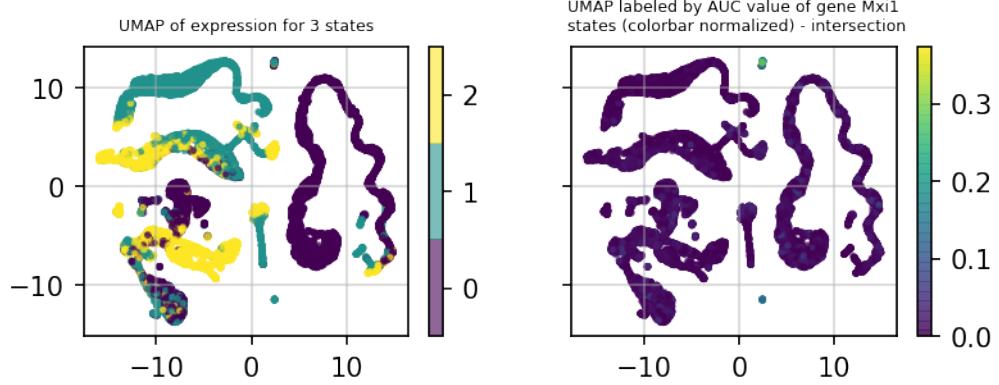
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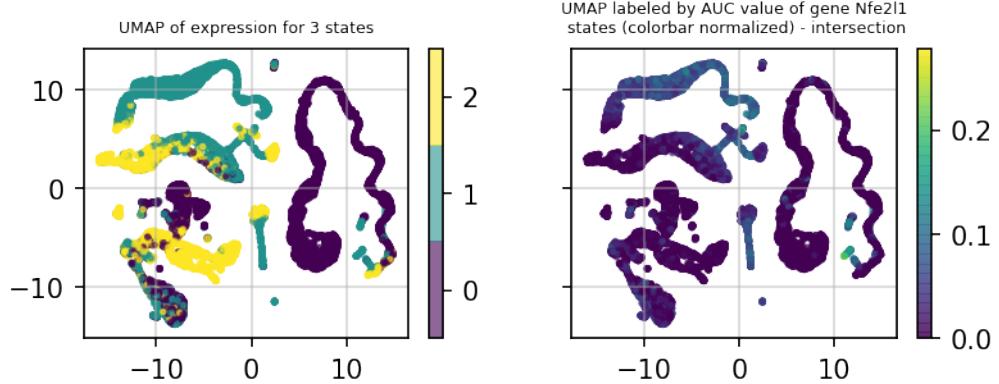
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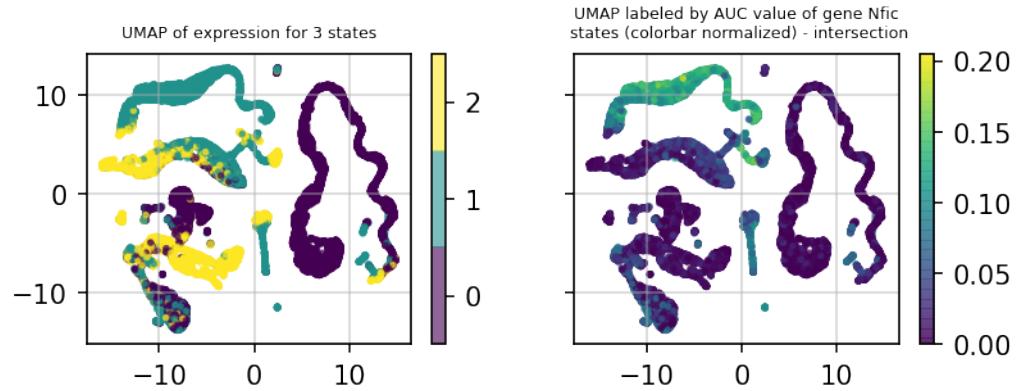


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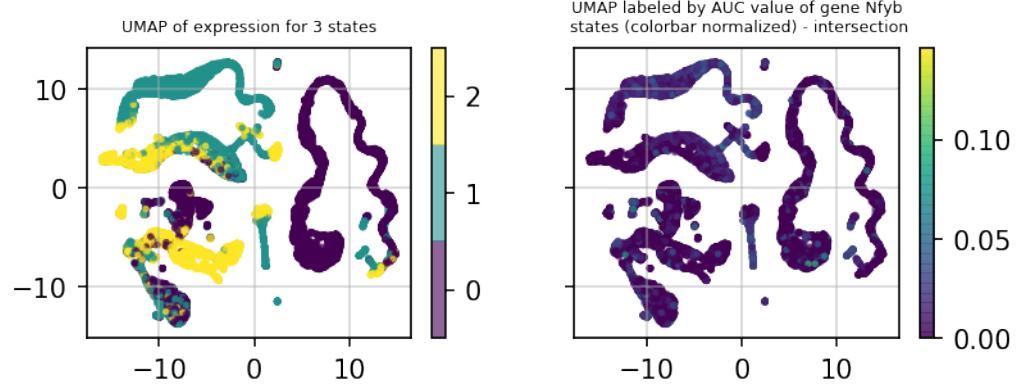
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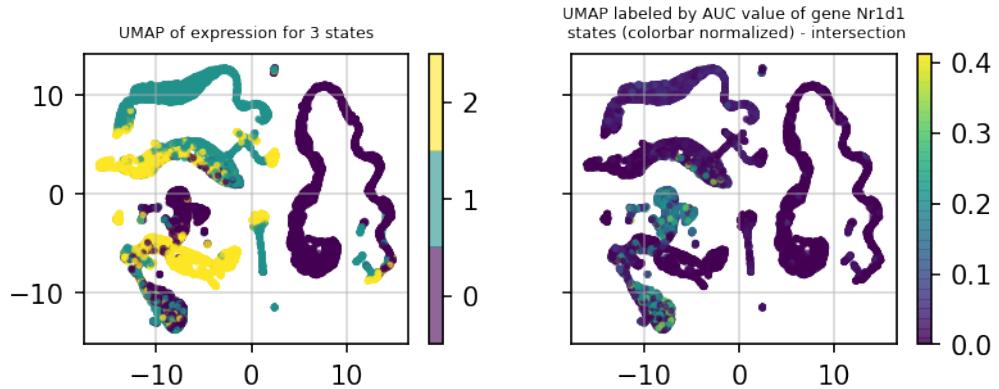
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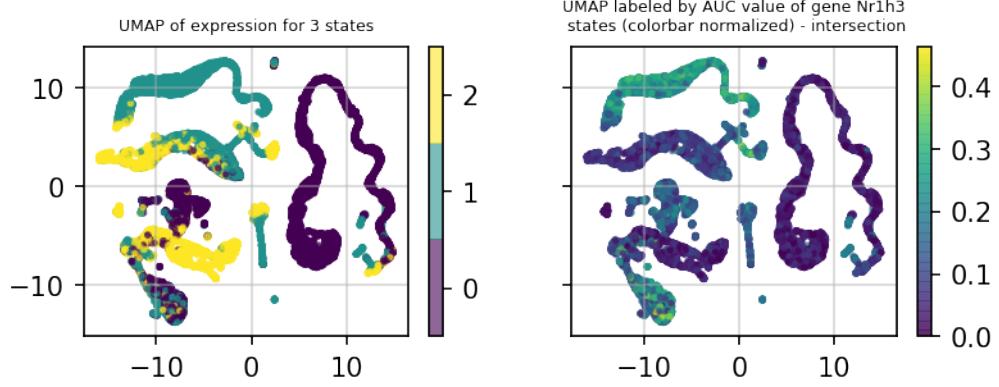


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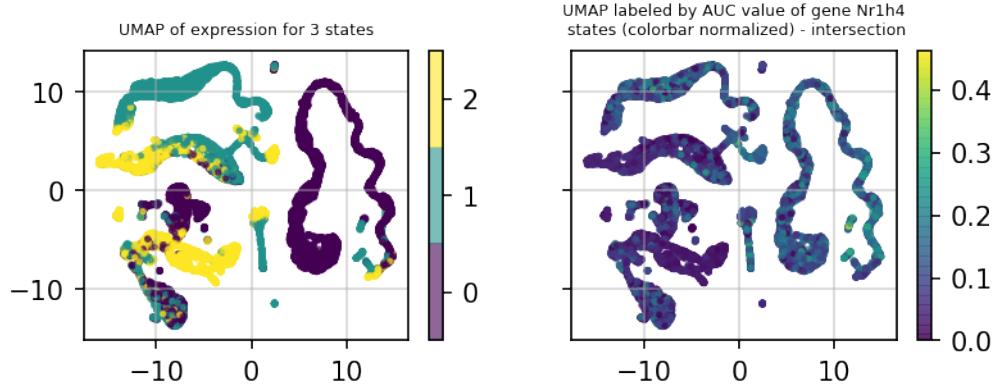
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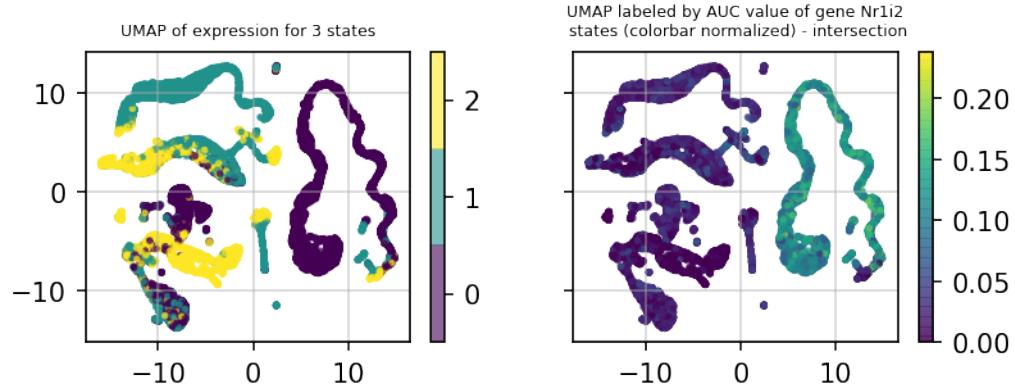
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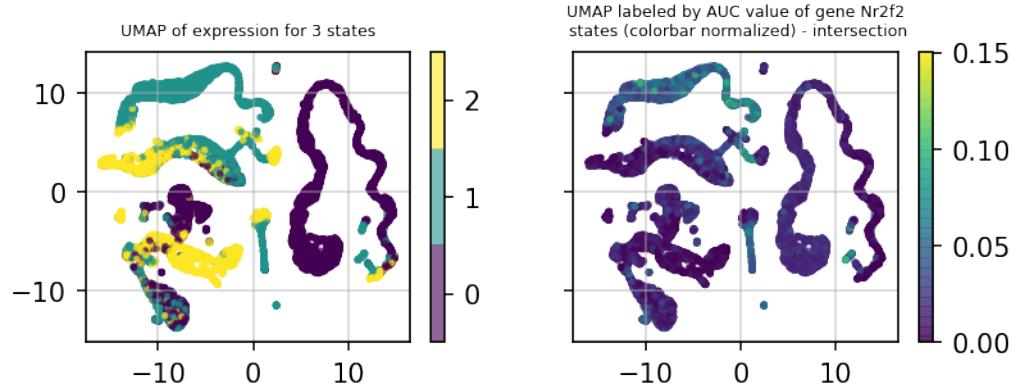
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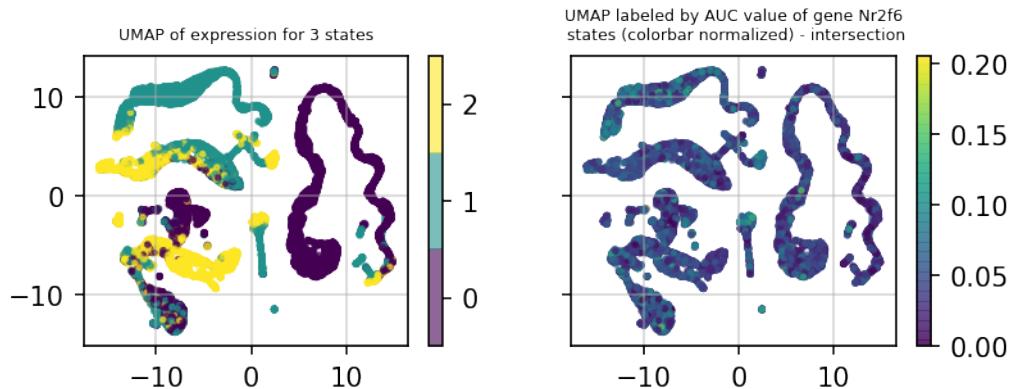
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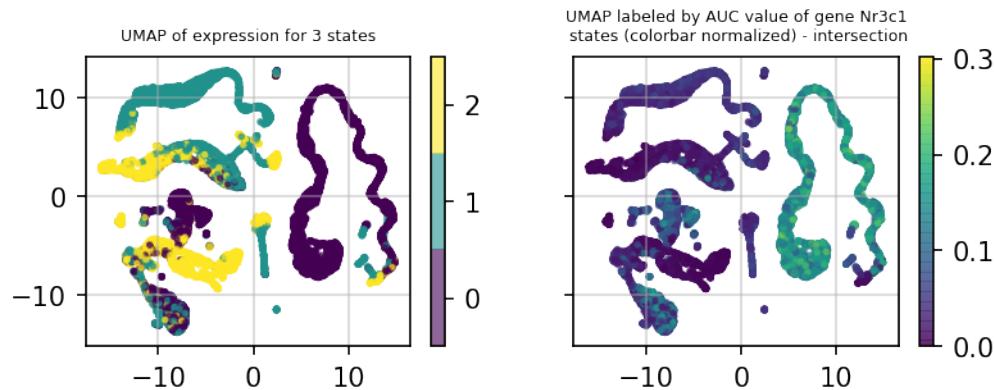
Nr2f2



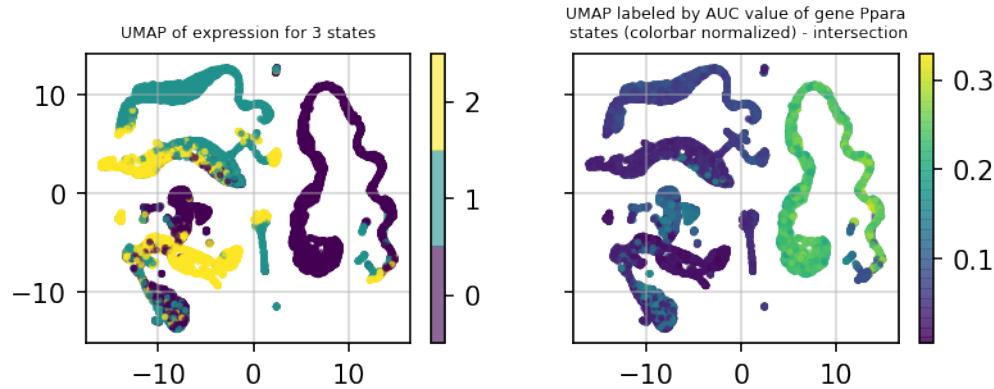
Nr2f6



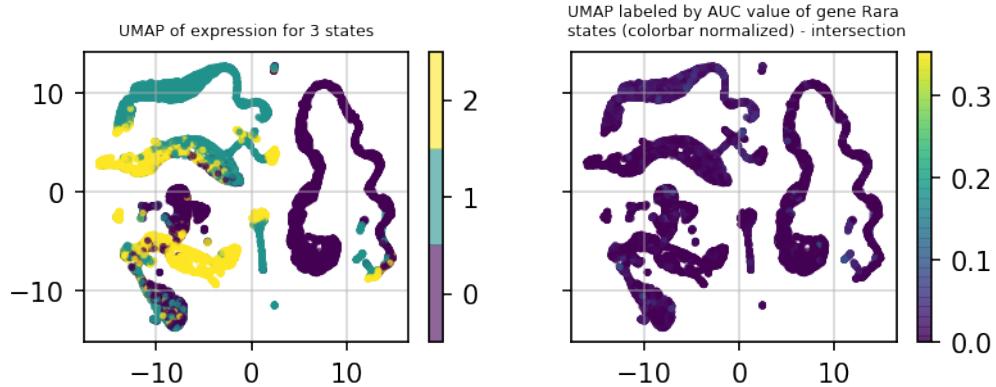
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Nr3c1



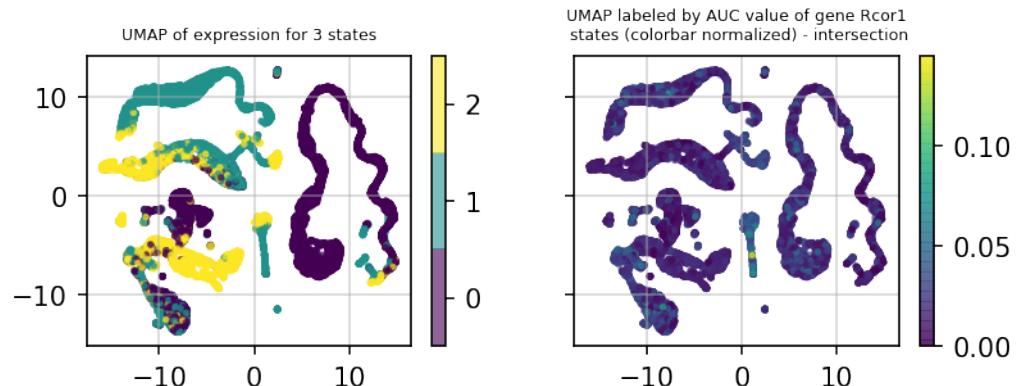
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Ppara



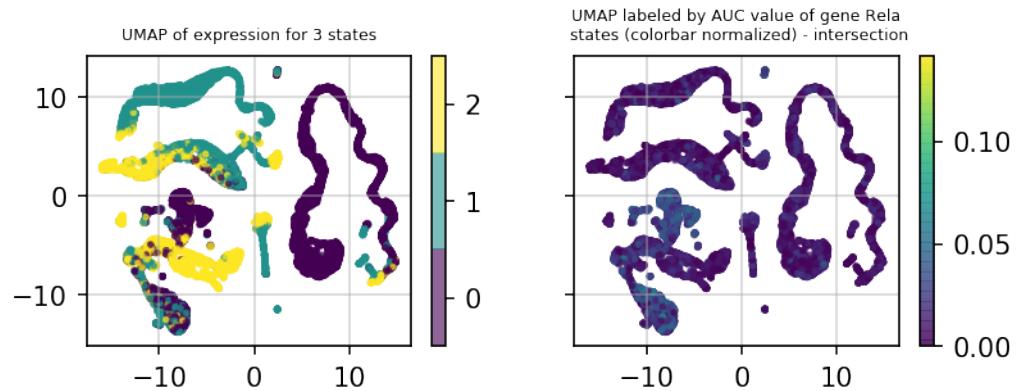
Rara



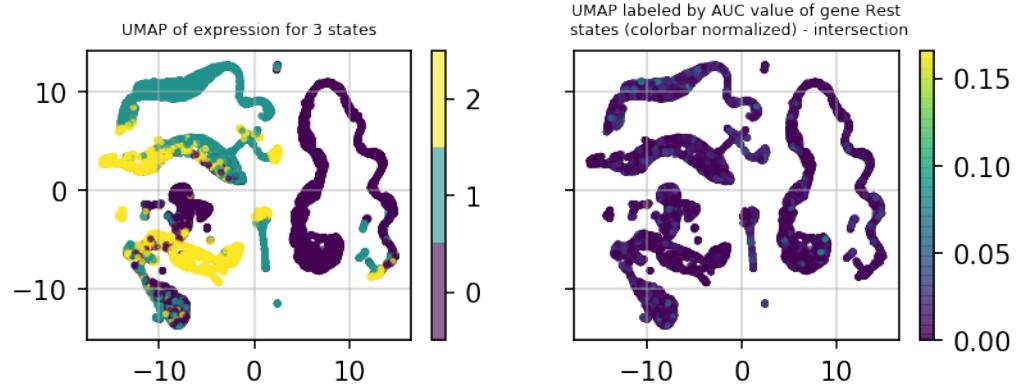
Rcor1



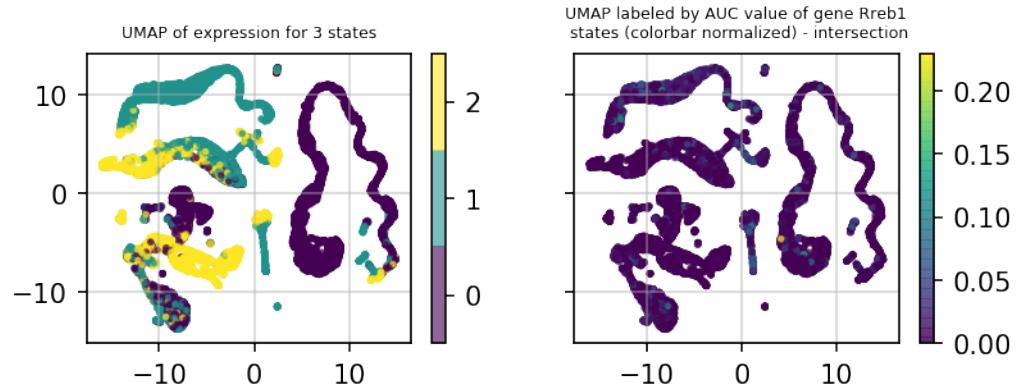
Rela



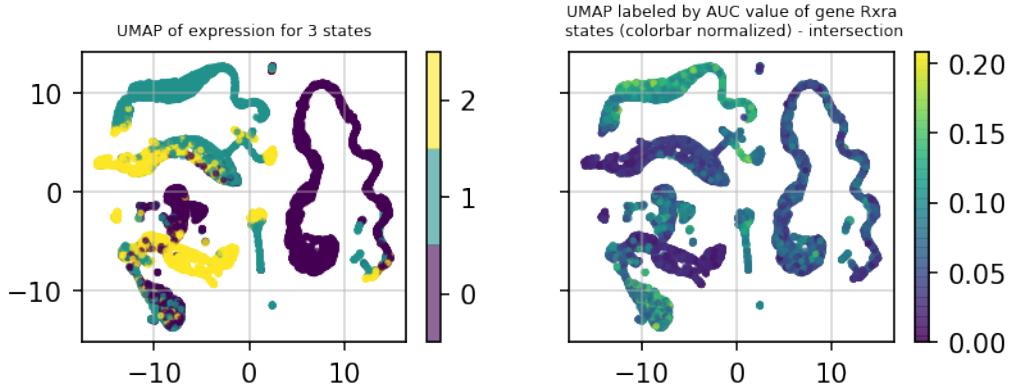
Rest



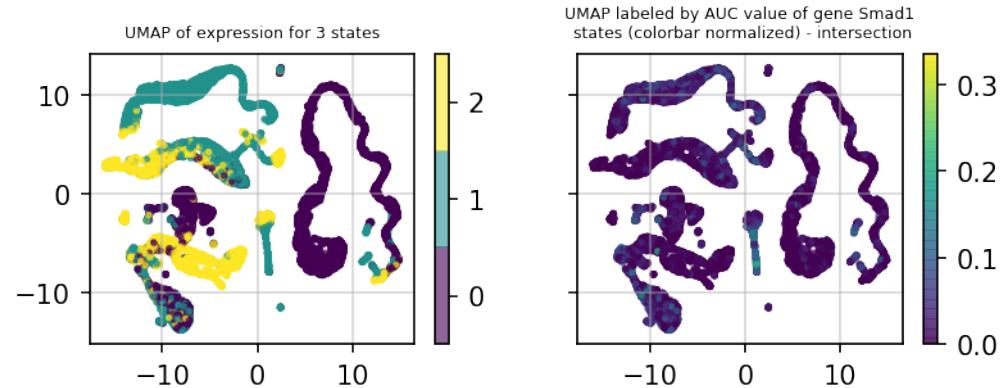
Rreb1



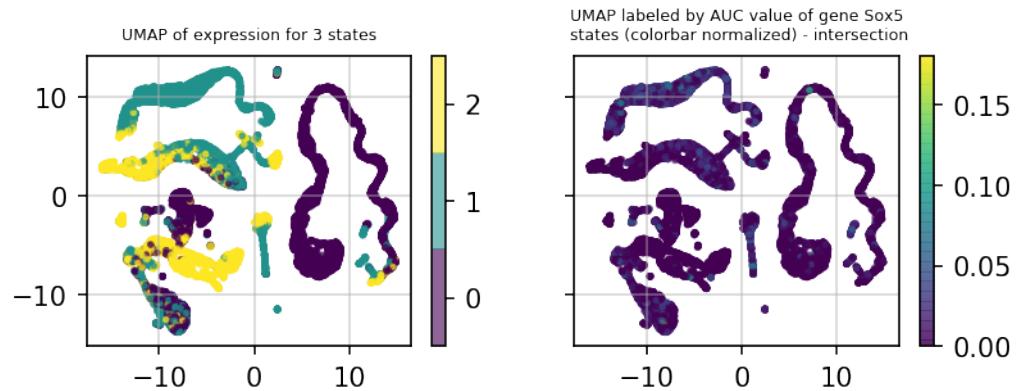
Rxra



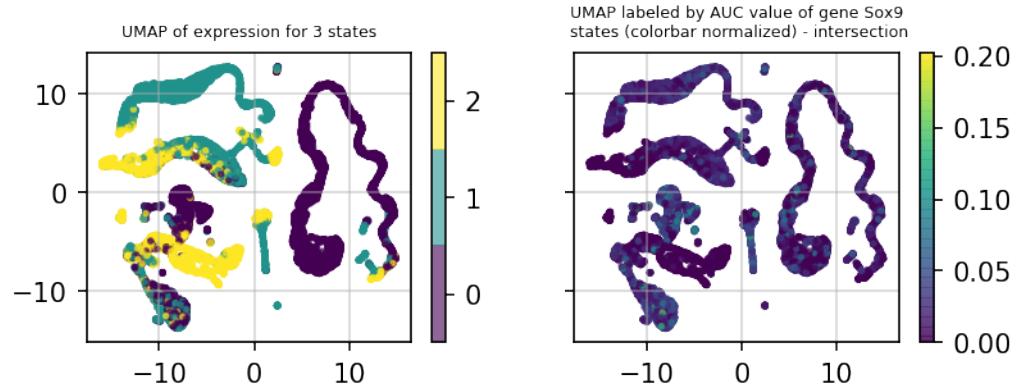
Smad1



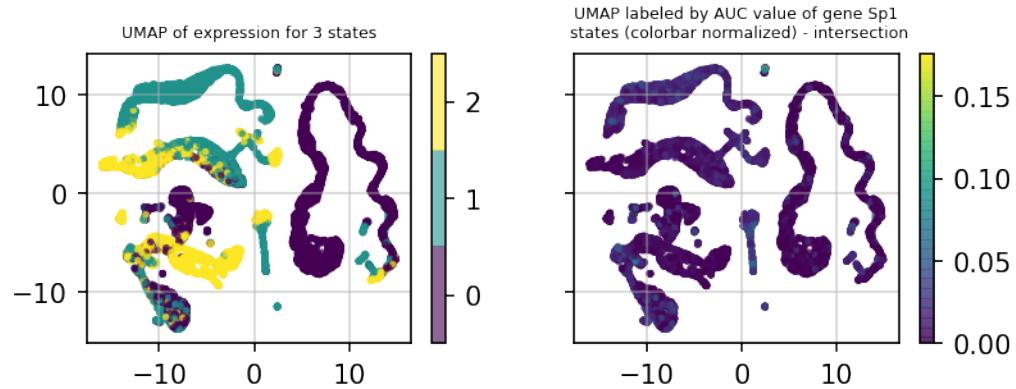
Sox5



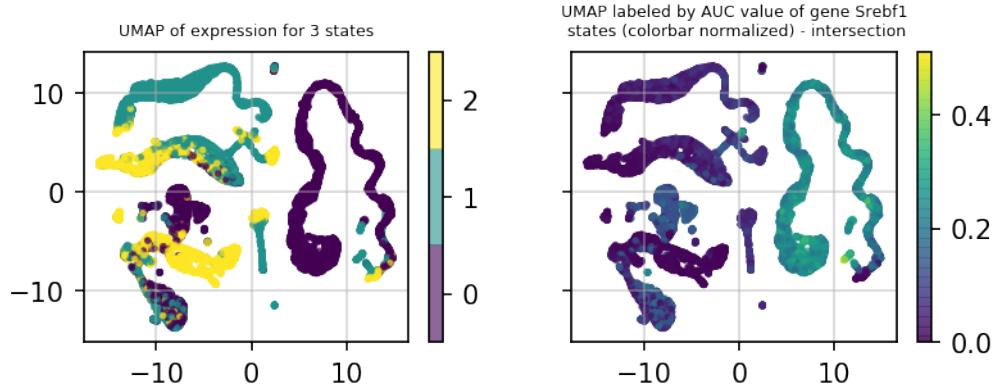
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Sox9



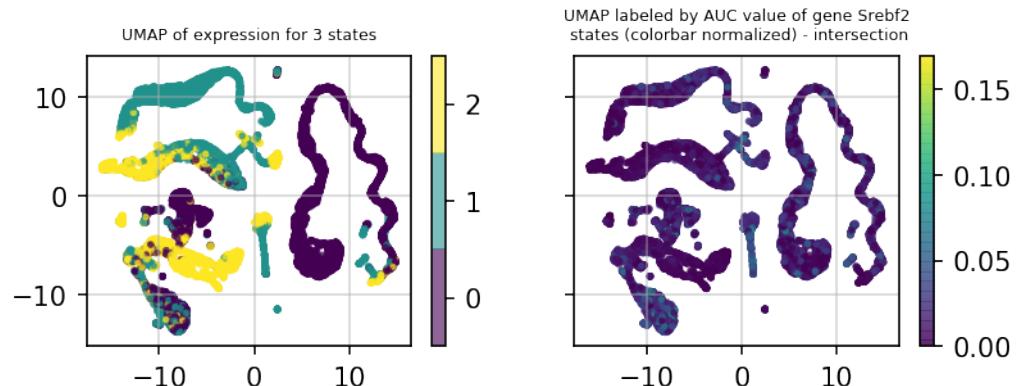
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Sp1



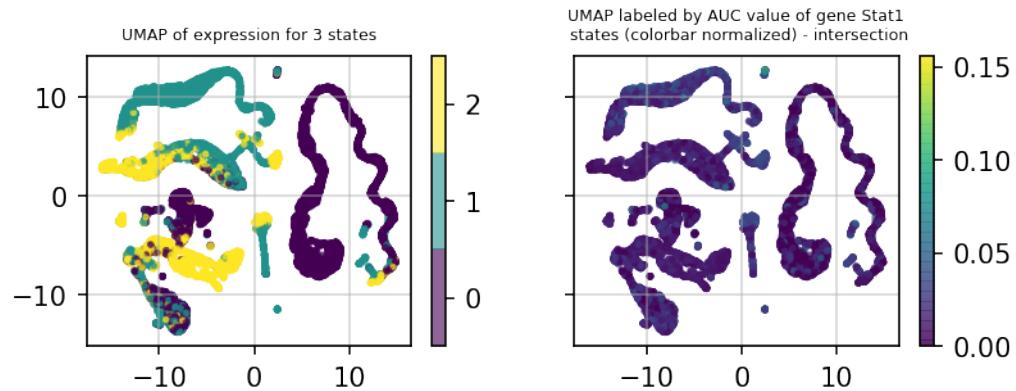
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Srebf1



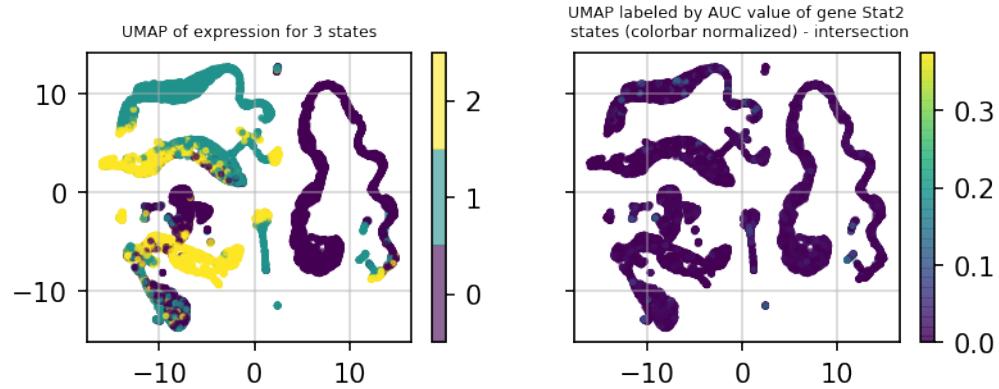
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Srebf2



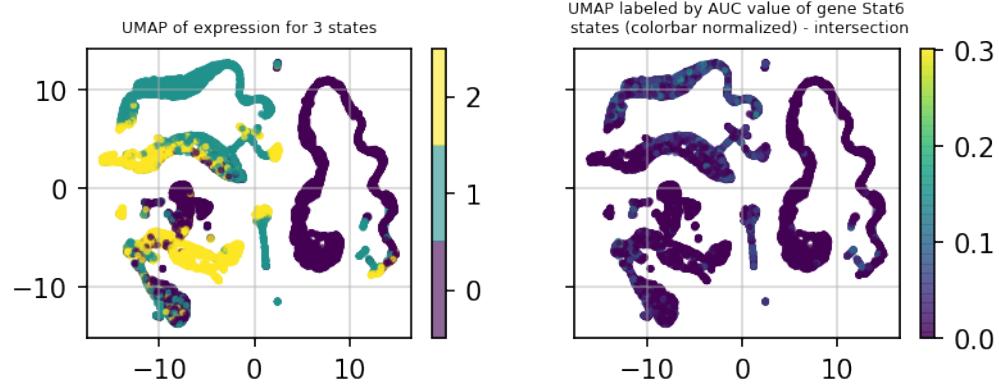
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Stat1



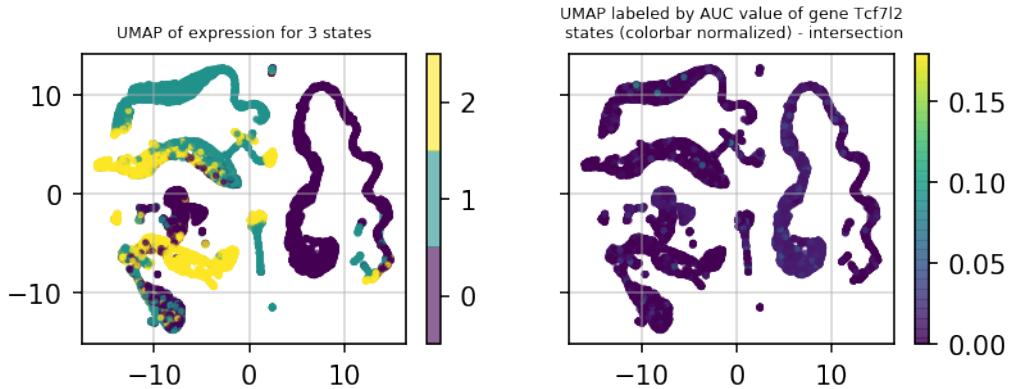
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Stat2



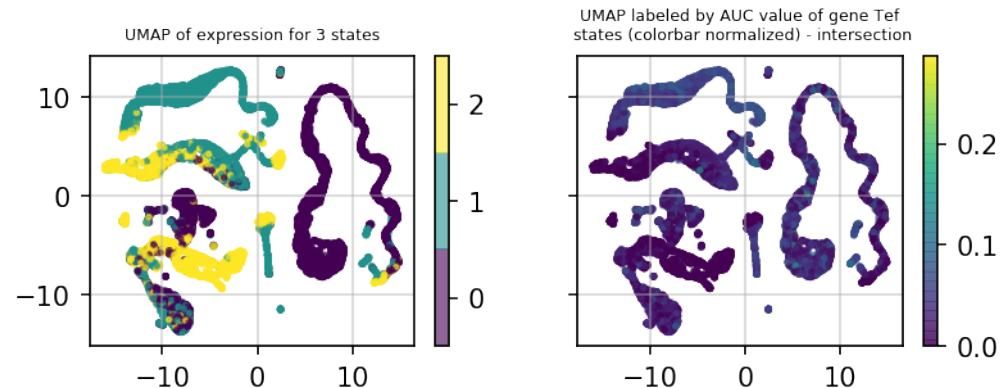
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Stat6



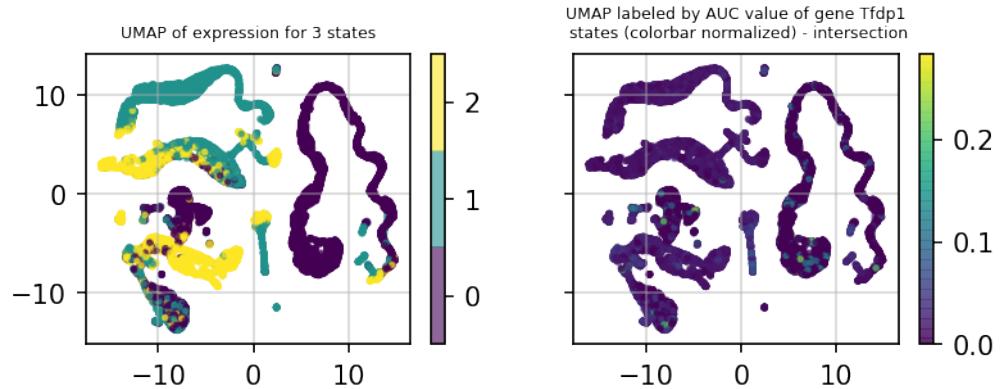
Tcf7l2



Tef

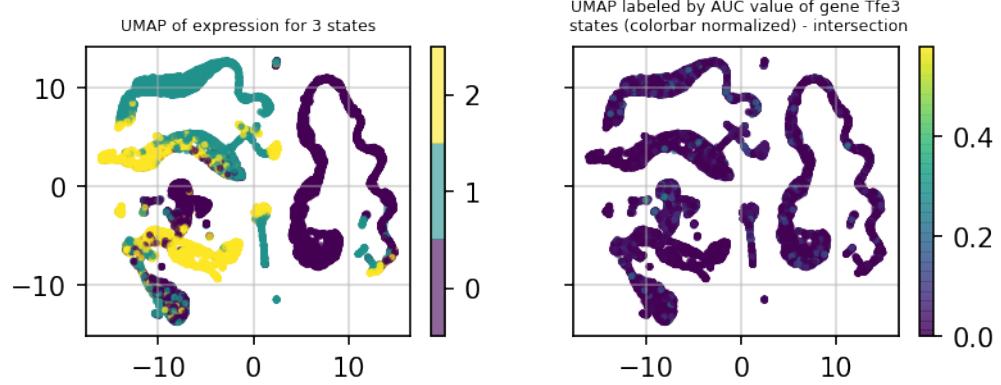


Tfdp1



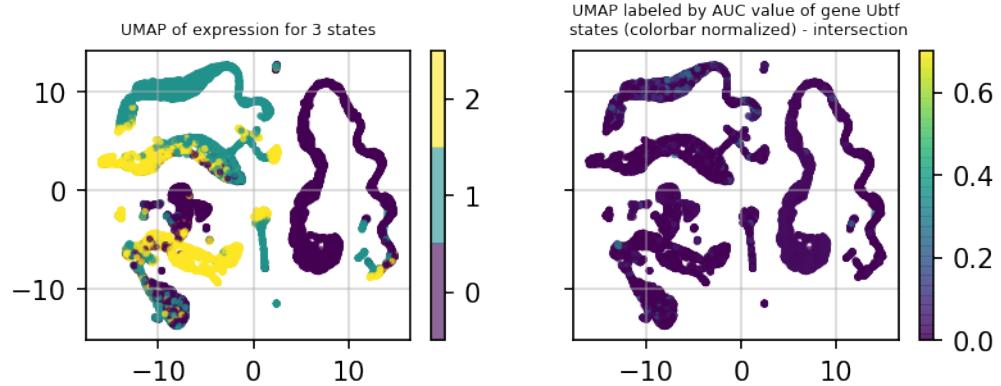
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Tfe3

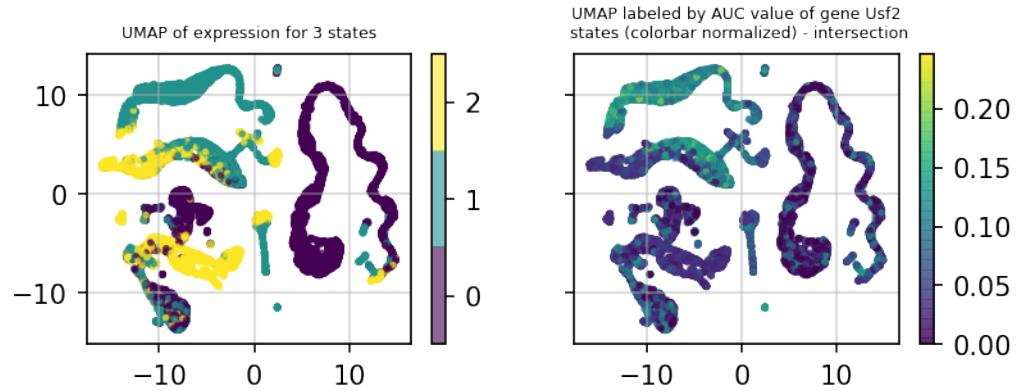


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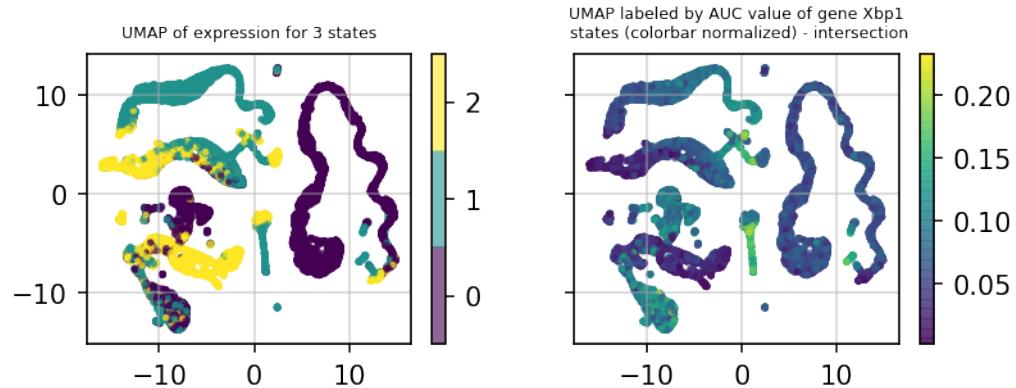
Ubtf



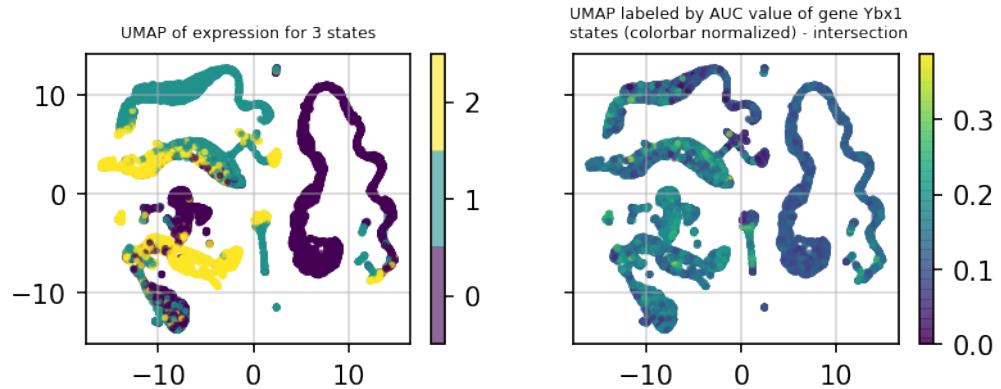
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Usf2



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Xbp1

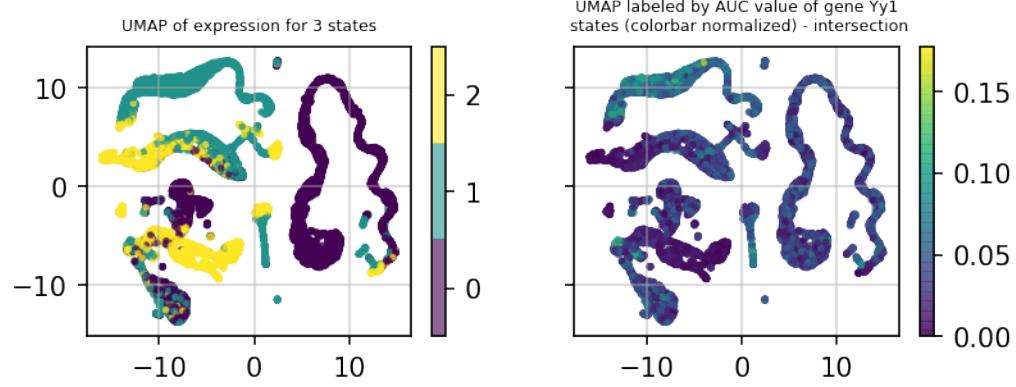


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Ybx1



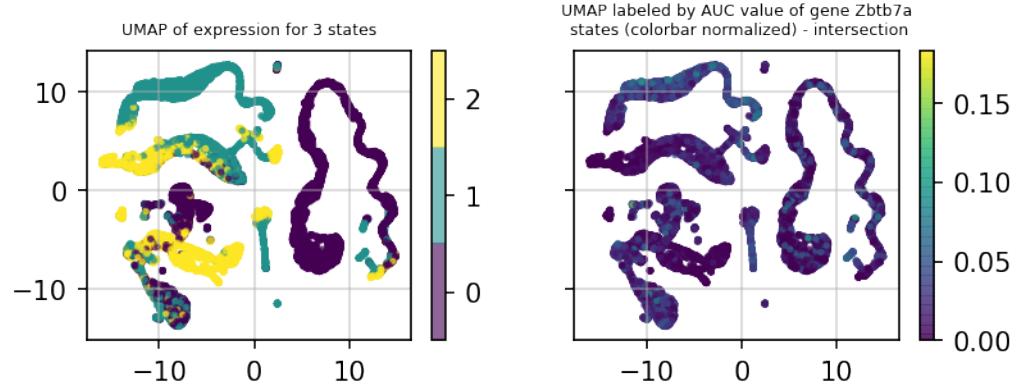
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*Yy1*

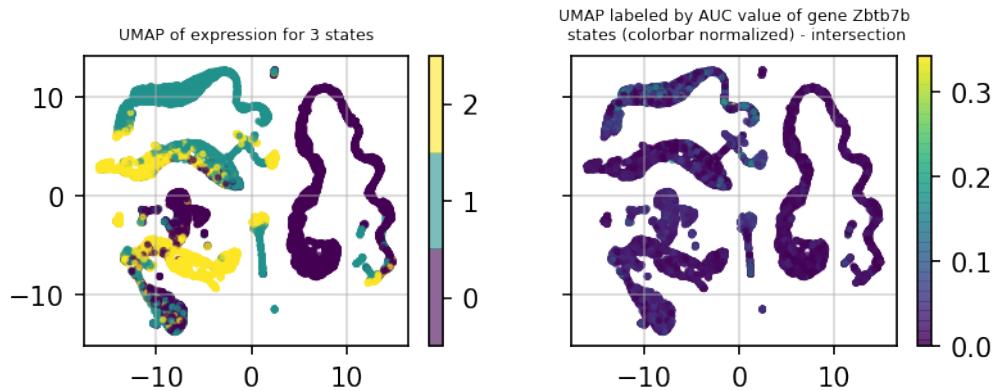


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*Zbtb7a*



Zbtb7b



## 4 2. Load results from SINCERITIES

For sincerities, we need to do:

- > build a graph
- > compute AUC for each TF by considering the remaining TF as targets

## 5 Expression matrix of selected genes in SINCERITIES

[41]:	Nr5a2	Epas1	Junb	Usf2	Bhlhe40	Hbp1	Nr3c1	\
0	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.0
1	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.0
2	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.0
3	0.000000	0.000000	0.000000	0.000000	0.000000	2.930021	0.000000	0.0
4	0.000000	0.000000	0.000000	0.000000	2.785801	0.000000	0.000000	0.0
...	...	...	...	...	...	...	...	...
18267	0.000000	0.000000	2.052569	2.052569	0.000000	0.000000	0.000000	0.0
18268	0.000000	0.000000	1.677581	1.677581	0.000000	0.000000	0.000000	0.0
18269	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.0
18270	1.268809	1.604337	1.268809	0.000000	1.785198	1.604337	0.000000	0.0
18271	1.940958	0.000000	1.940958	0.000000	0.000000	1.940958	0.000000	0.0

Tsc22d3      Zfp91    Sfpq    ...      Id3      Xbp1      Hes6      Cebpb    \

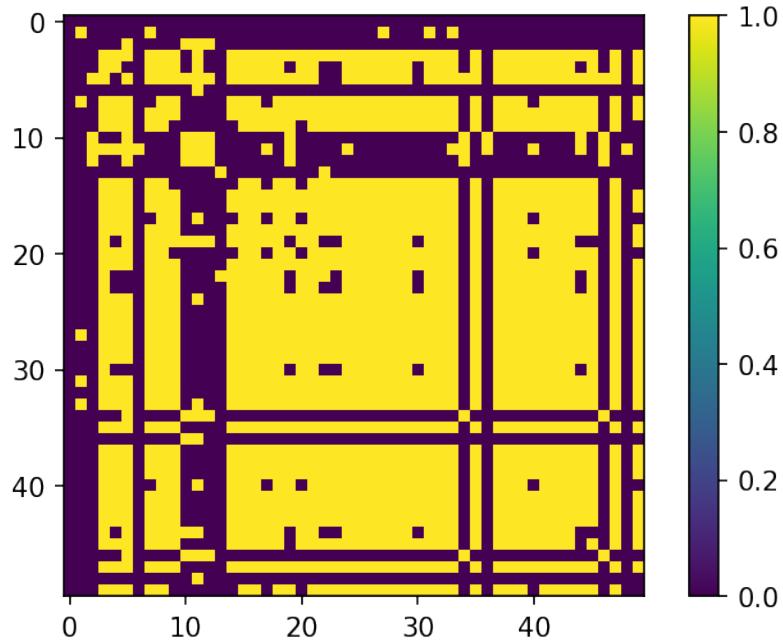
0	0.000000	0.000000	0.0	...	0.000000	0.000000	0.000000	0.000000
1	0.000000	0.000000	0.0	...	0.000000	0.000000	0.000000	0.000000
2	0.000000	0.000000	0.0	...	0.000000	0.000000	0.000000	0.000000
3	2.930021	0.000000	0.0	...	0.000000	0.000000	0.000000	0.000000
4	0.000000	0.000000	0.0	...	0.000000	0.000000	0.000000	2.785801
...	...	...	...	...	...	...	...	...
18267	0.000000	0.000000	0.0	...	0.000000	0.000000	0.000000	2.052569
18268	1.677581	0.000000	0.0	...	1.677581	1.998575	1.998575	2.164856
18269	0.000000	0.000000	0.0	...	0.000000	1.964330	0.000000	0.000000
18270	1.604337	1.785198	0.0	...	1.268809	1.604337	1.268809	1.268809
18271	0.000000	0.000000	0.0	...	1.940958	0.000000	1.940958	2.234549

	Jund	Hhex	Dbp	Cebpa	Id2	h
0	0.000000	0.000000	0.000000	0.000000	0.000000	2
1	0.000000	0.000000	0.000000	0.000000	0.000000	1
2	0.000000	0.000000	0.000000	2.693875	0.000000	1
3	0.000000	0.000000	0.000000	0.000000	0.000000	1
4	0.000000	3.013365	0.000000	0.000000	0.000000	1
...	...	...	...	...	...	...
18267	2.052569	0.000000	0.000000	2.052569	2.052569	6
18268	1.677581	0.000000	1.677581	1.677581	1.677581	4
18269	0.000000	0.000000	0.000000	2.258933	0.000000	4
18270	0.000000	1.904739	1.785198	1.268809	1.268809	4
18271	2.234549	0.000000	0.000000	1.940958	1.940958	6

[18272 rows x 51 columns]

## 6 Adjacency matrix of driver genes

[50]: <matplotlib.colorbar.Colorbar at 0x7fab36323fd0>



## 7 AUC matrix of SINCERITIES

[52]:	Epas1	Junb	Usf2	Bhlhe40	Hbp1	Nr3c1	Tsc22d3	Zfp91	\
0	0.284	0.610	0.532821	0.496364	0.4955	0.70	0.524444	0.528421	
1	0.296	0.680	0.525641	0.528485	0.5295	0.72	0.515556	0.520526	
2	0.304	0.750	0.501538	0.490303	0.5060	0.74	0.488333	0.495263	
3	0.364	0.775	0.516923	0.504242	0.5200	0.74	0.497222	0.511053	
4	0.452	0.665	0.499487	0.488485	0.5370	0.68	0.488333	0.494737	
...	...	...	...	...	...	...	...	...	...
18267	0.292	0.625	0.508205	0.532727	0.5455	0.64	0.486667	0.504737	
18268	0.460	0.505	0.500000	0.518788	0.5340	0.52	0.477778	0.499474	
18269	0.288	0.685	0.509231	0.529091	0.5250	0.80	0.478333	0.501579	
18270	0.460	0.335	0.512821	0.498788	0.5020	0.22	0.521111	0.520526	
18271	0.228	0.655	0.498974	0.488485	0.5095	0.58	0.477778	0.496842	

	Sfpq	Irf2	...	Ybx1	Id3	Xbp1	Hes6	Cebpb	\
0	0.500588	0.488	...	0.513529	0.528421	0.528421	0.528421	0.506667	
1	0.485882	0.522	...	0.498824	0.520526	0.520526	0.520526	0.538788	
2	0.452941	0.562	...	0.465882	0.495263	0.495263	0.495263	0.500606	
3	0.476471	0.572	...	0.479412	0.511053	0.511053	0.511053	0.523636	
4	0.471765	0.718	...	0.482353	0.494737	0.494737	0.494737	0.487273	
...	...	...	...	...	...	...	...	...	...
18267	0.475882	0.562	...	0.474118	0.504737	0.504737	0.504737	0.524242	

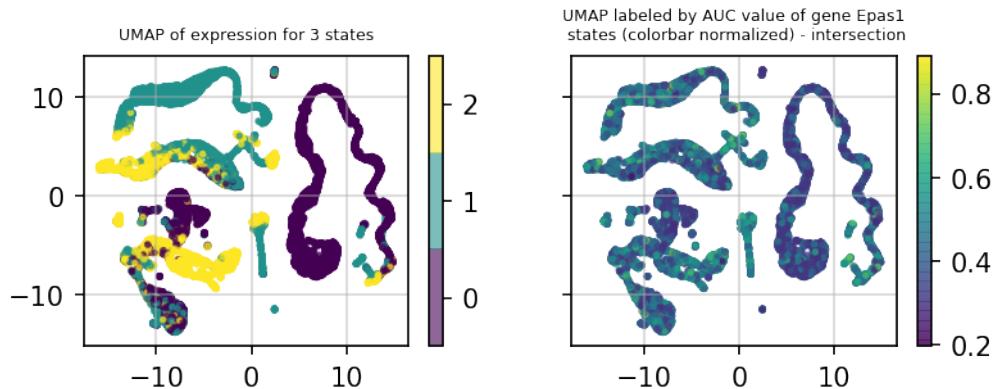
18268	0.501765	0.608	...	0.480000	0.499474	0.499474	0.499474	0.510909
18269	0.485882	0.510	...	0.481765	0.501579	0.501579	0.501579	0.539394
18270	0.535294	0.486	...	0.514706	0.520526	0.520526	0.520526	0.492727
18271	0.485294	0.580	...	0.476471	0.496842	0.496842	0.496842	0.488485

	Jund	Hhex	Dbp	Cebpa	Id2
0	0.524444	0.496667	0.528421	0.70	0.498125
1	0.515556	0.546667	0.520526	0.72	0.481875
2	0.488333	0.600000	0.495263	0.74	0.446250
3	0.505000	0.616667	0.511053	0.74	0.471250
4	0.472222	0.773333	0.494737	0.68	0.466250
...	...	...	...	...	...
18267	0.495000	0.513333	0.504737	0.64	0.456250
18268	0.490000	0.536667	0.499474	0.52	0.488125
18269	0.498889	0.546667	0.501579	0.80	0.462500
18270	0.520000	0.520000	0.520526	0.22	0.535000
18271	0.489444	0.520000	0.496842	0.58	0.466875

[18272 rows x 49 columns]

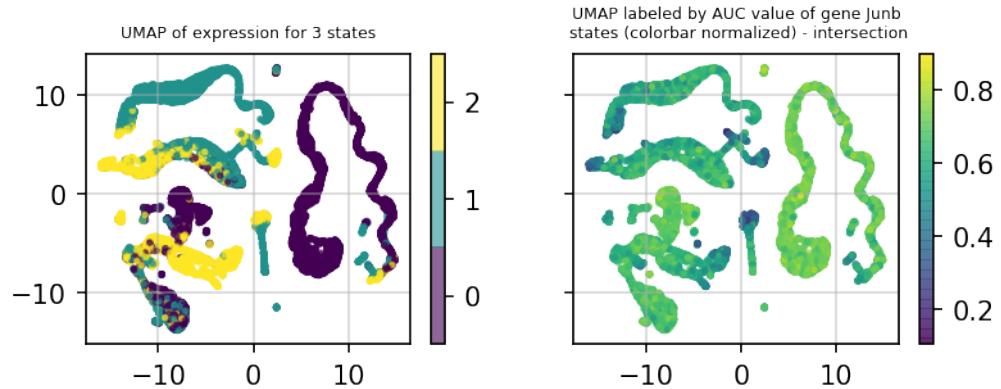
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Epas1

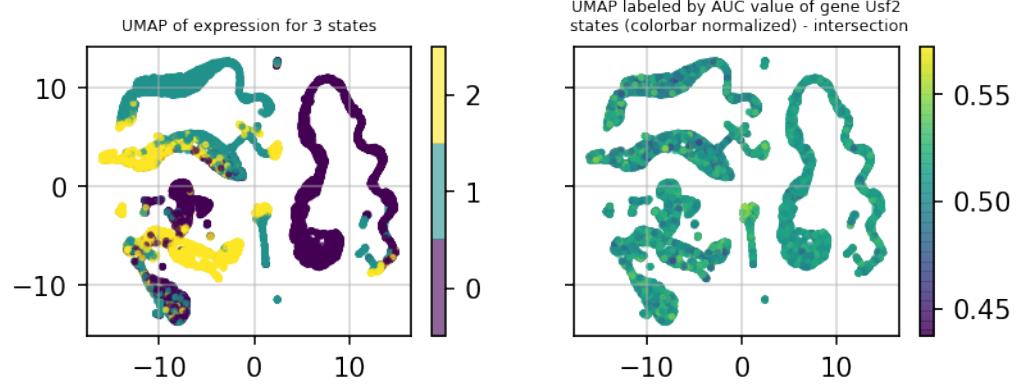


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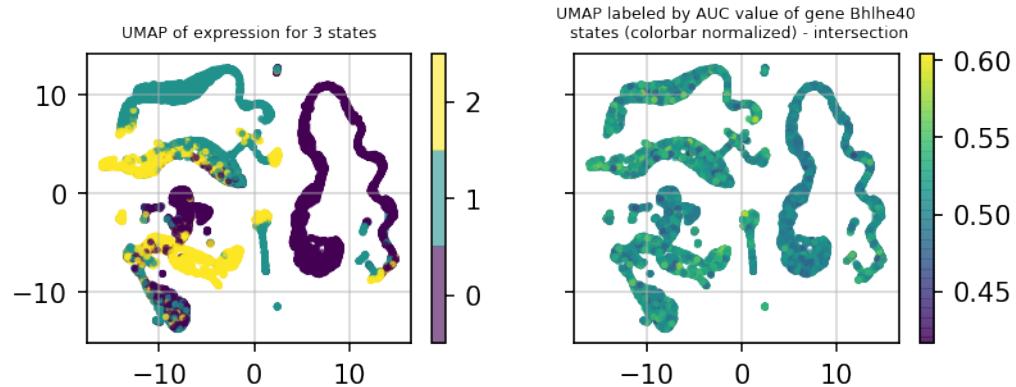
Junb



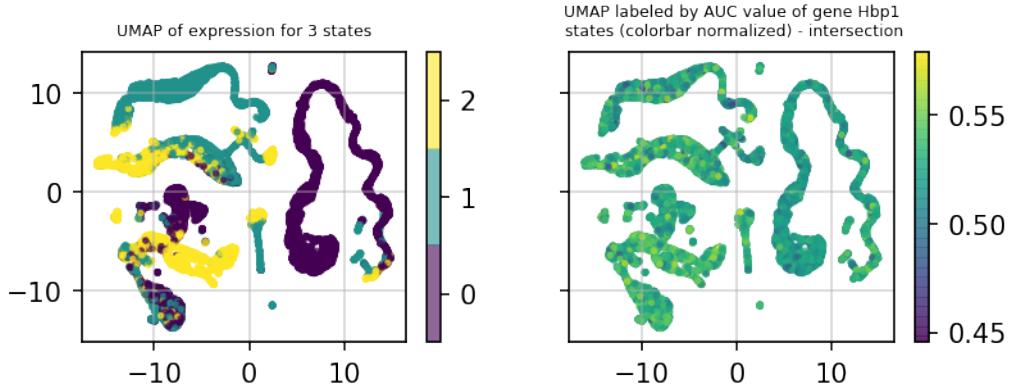
*Usf2*



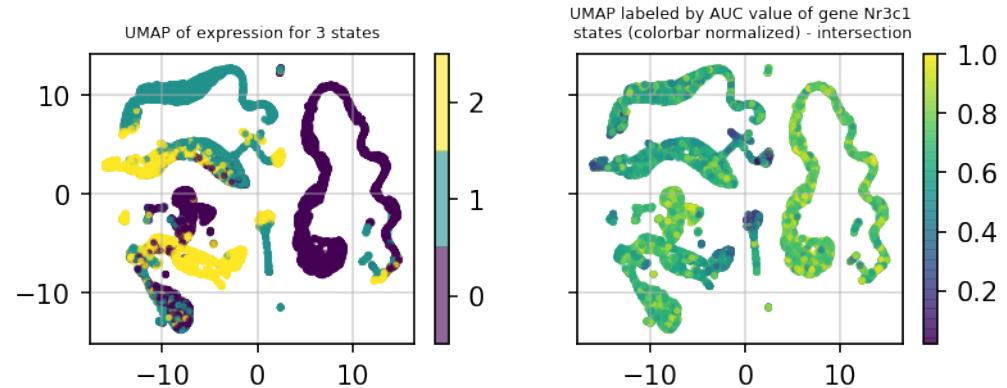
*Bhlhe40*



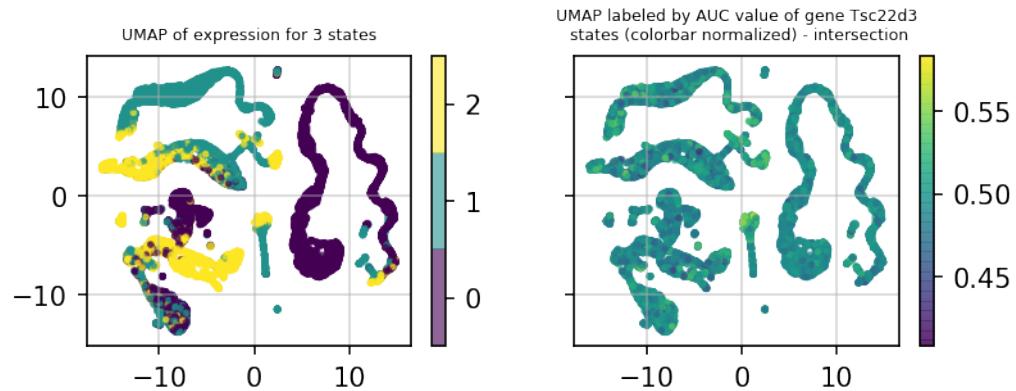
Hbp1



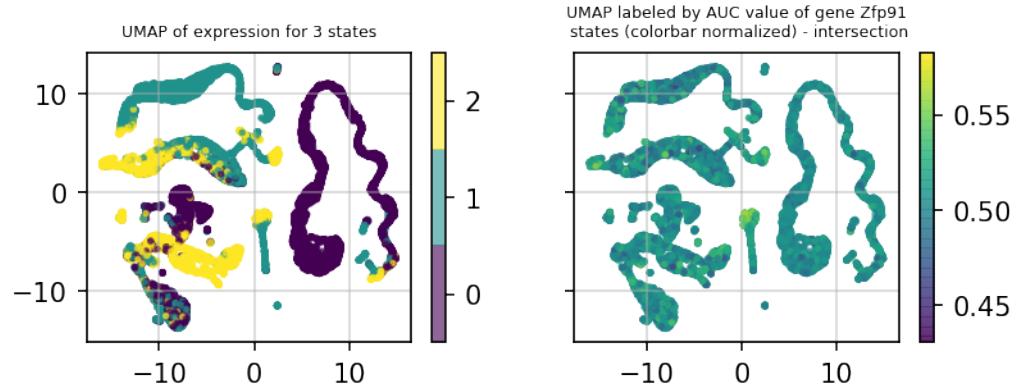
Nr3c1



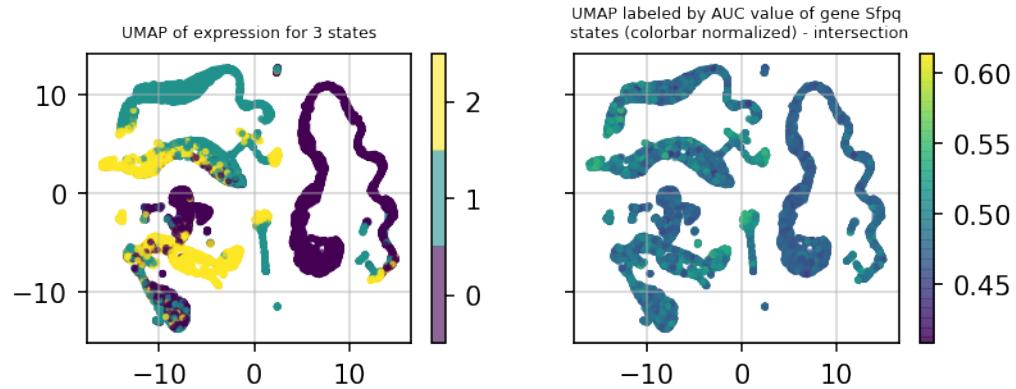
Tsc22d3



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Zfp91

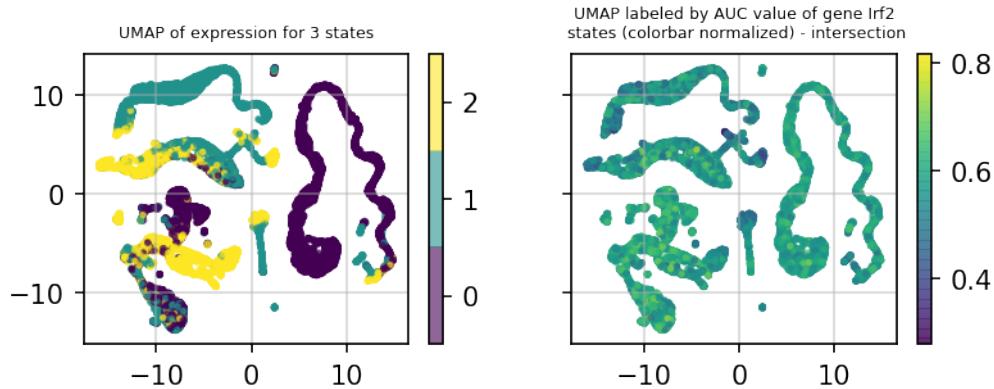


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Sfpq



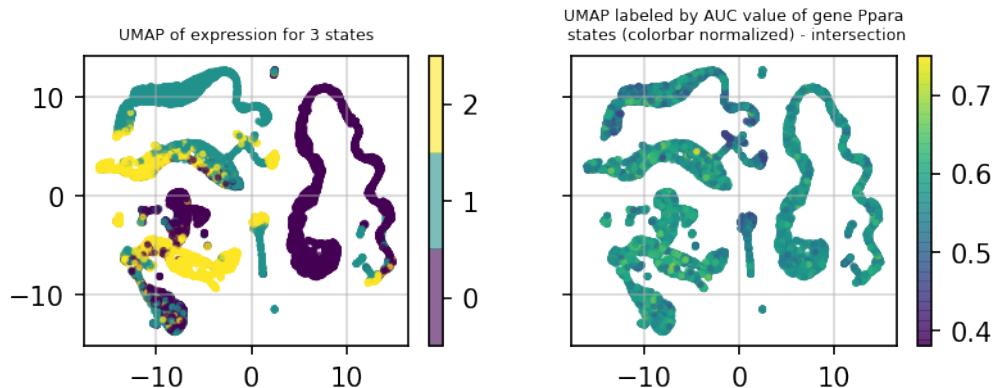
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Irf2



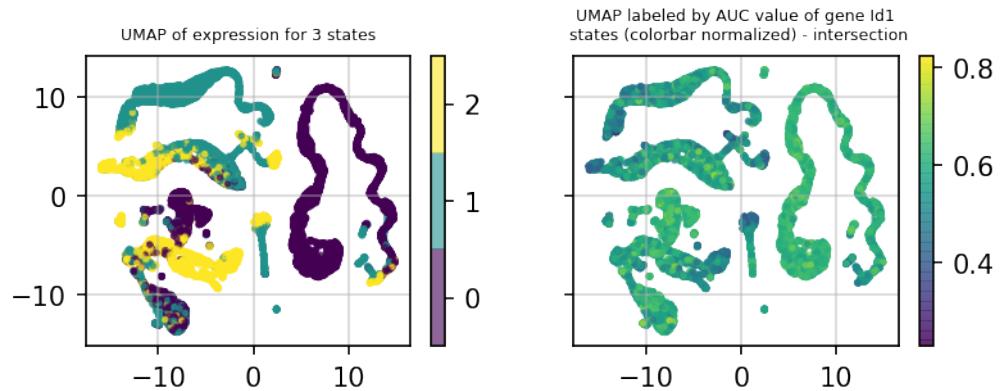
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Ppara

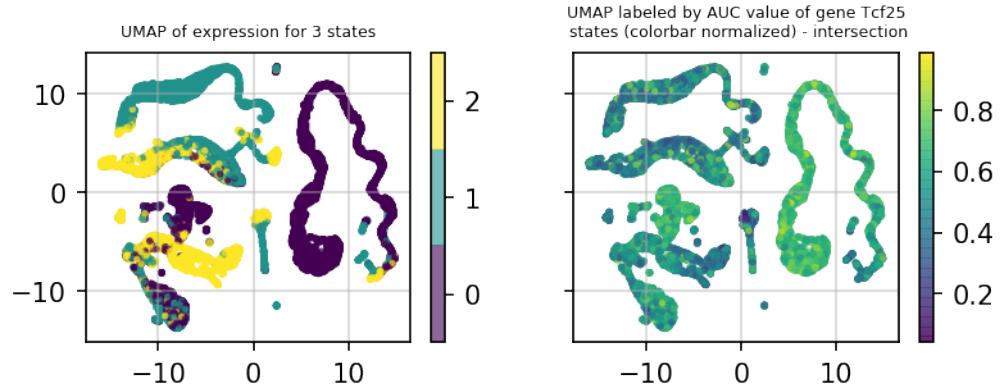


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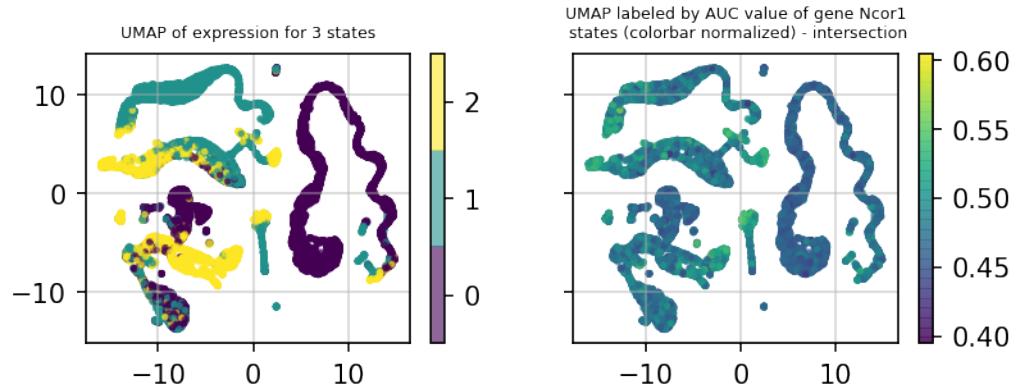
Id1



Tcf25

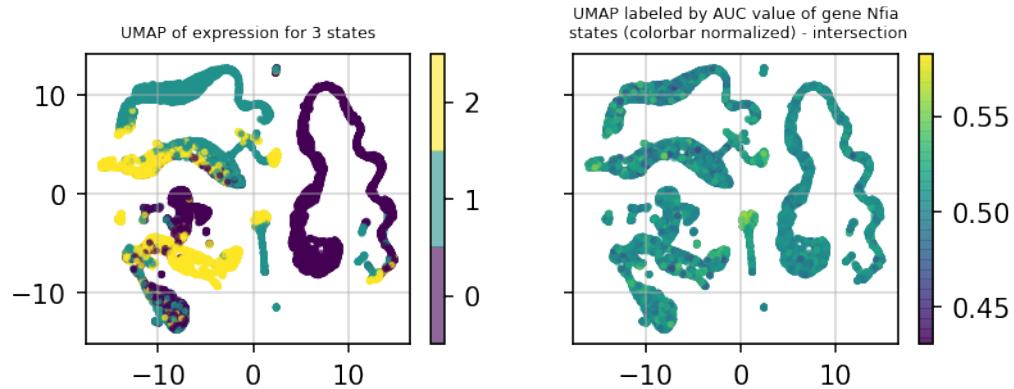


Ncor1



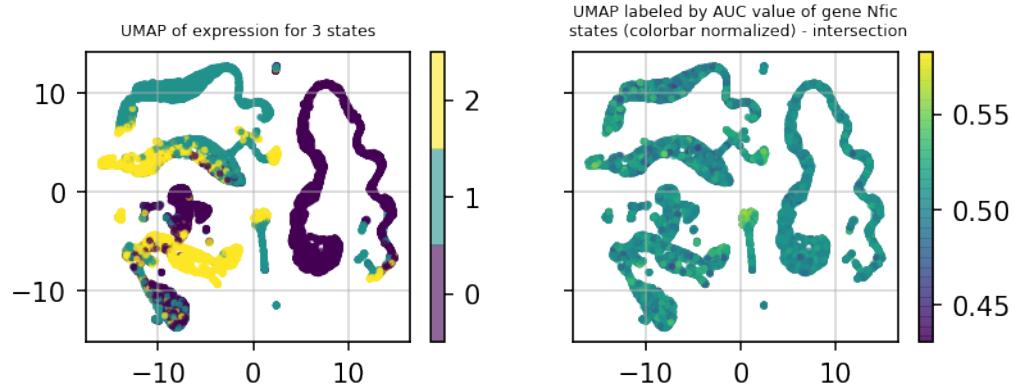
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Nfia



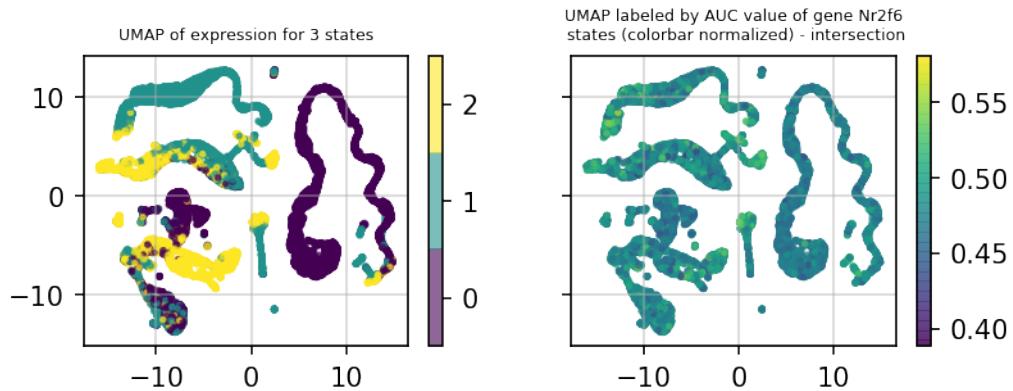
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Nfic

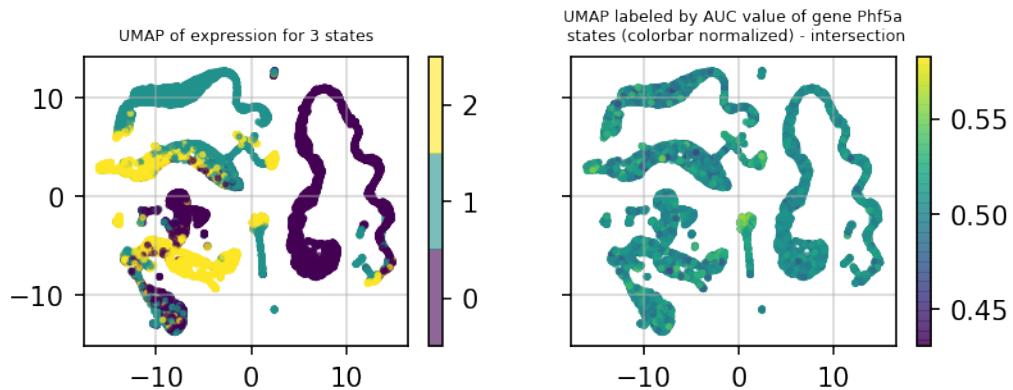


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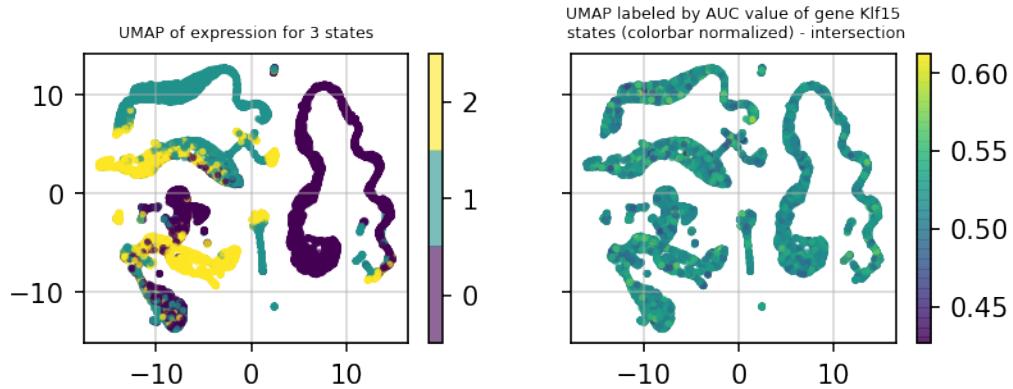
Nr2f6



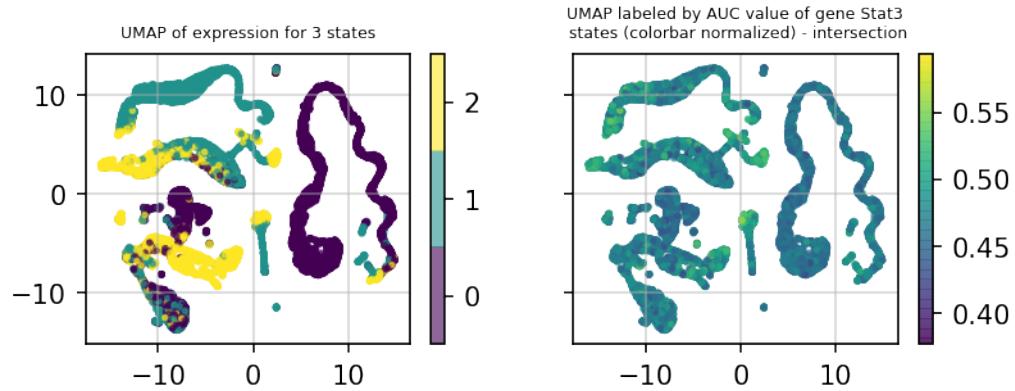
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Phf5a



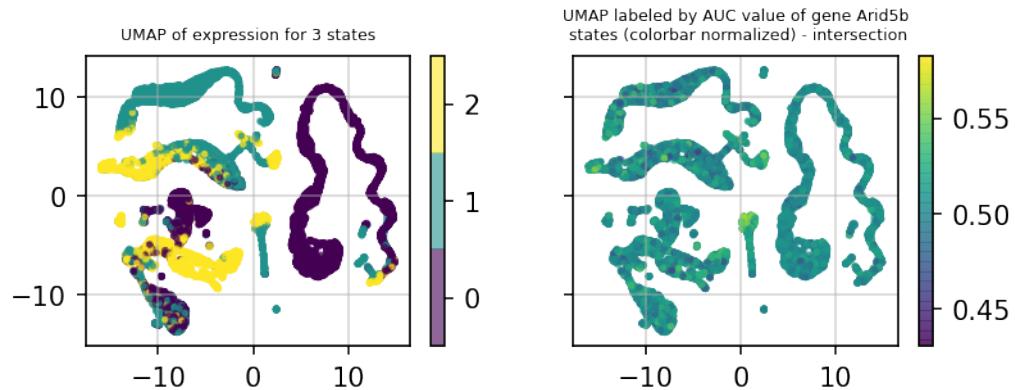
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Klf15



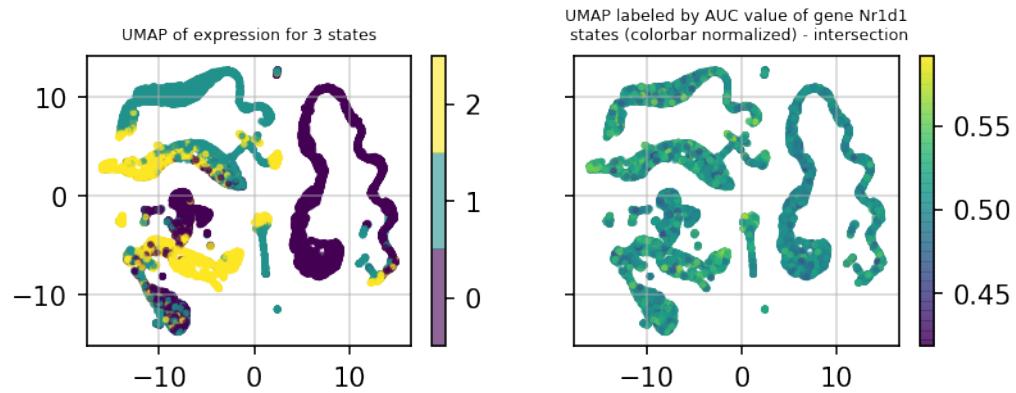
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Stat3



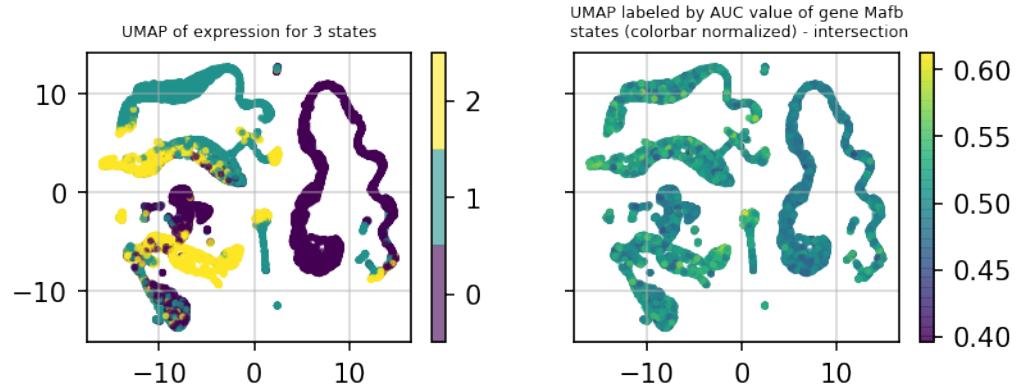
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Arid5b



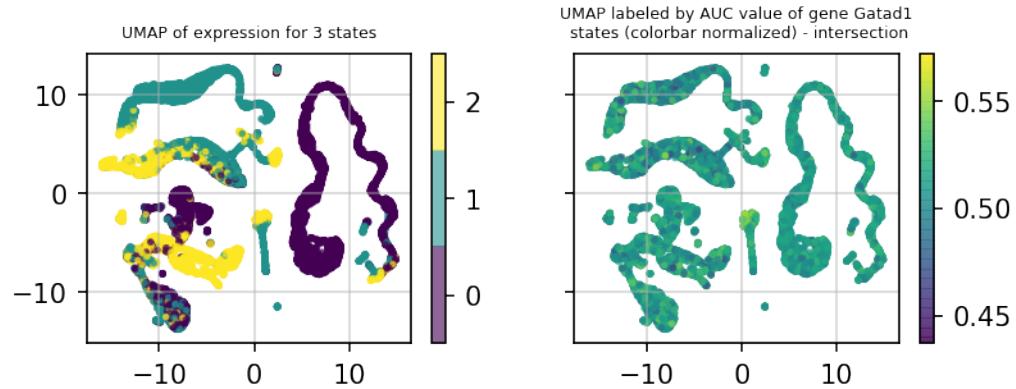
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Nr1d1



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Mafb

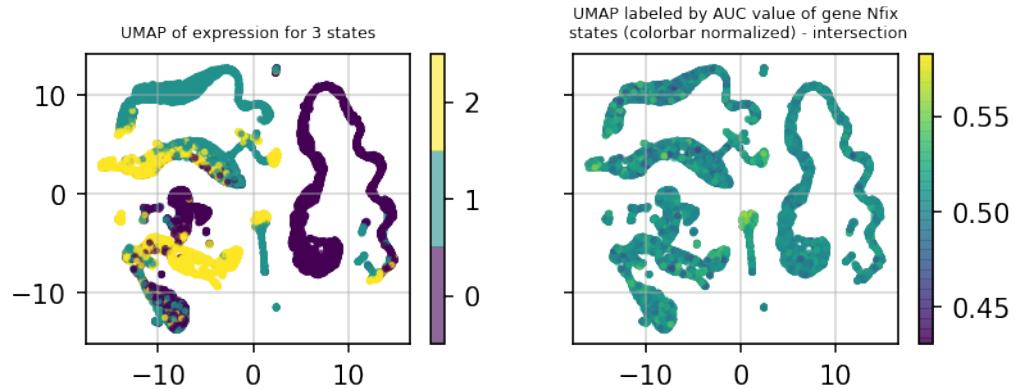


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Gata6



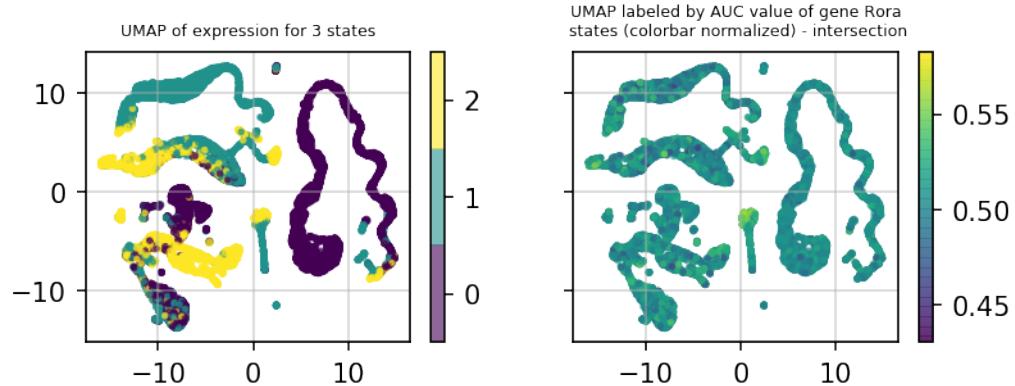
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Nfix



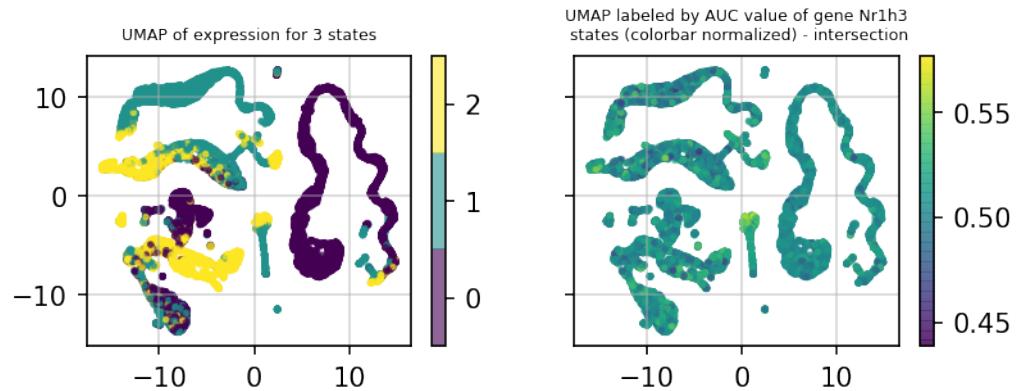
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Rora



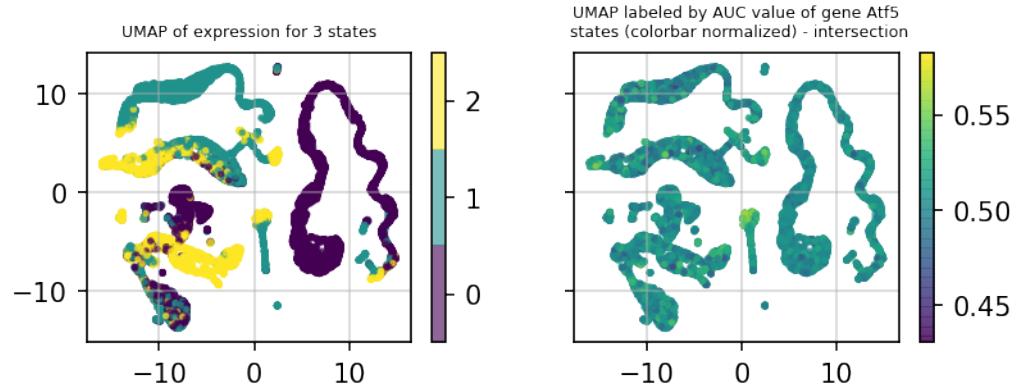
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Nr1h3



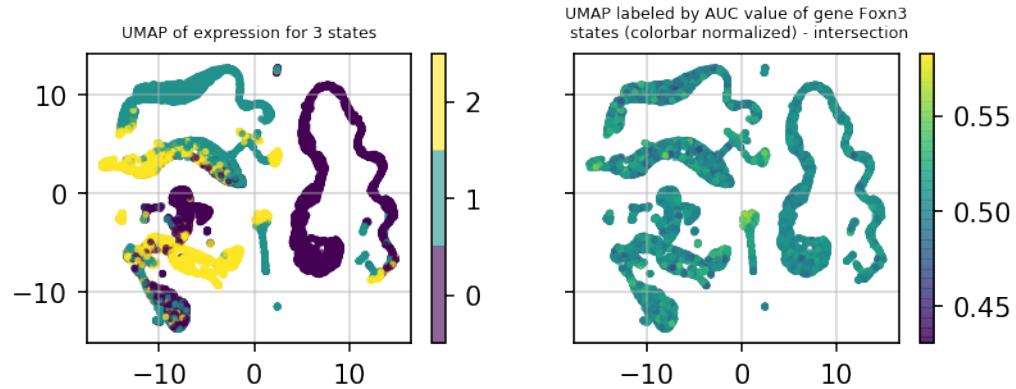
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Atf5

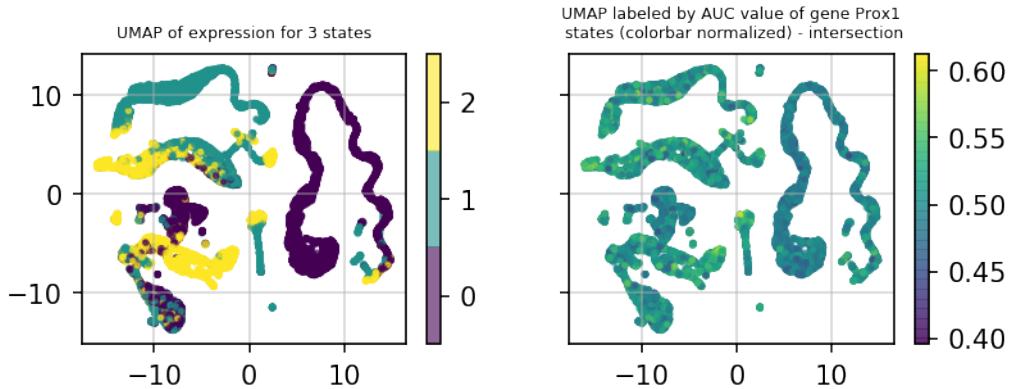


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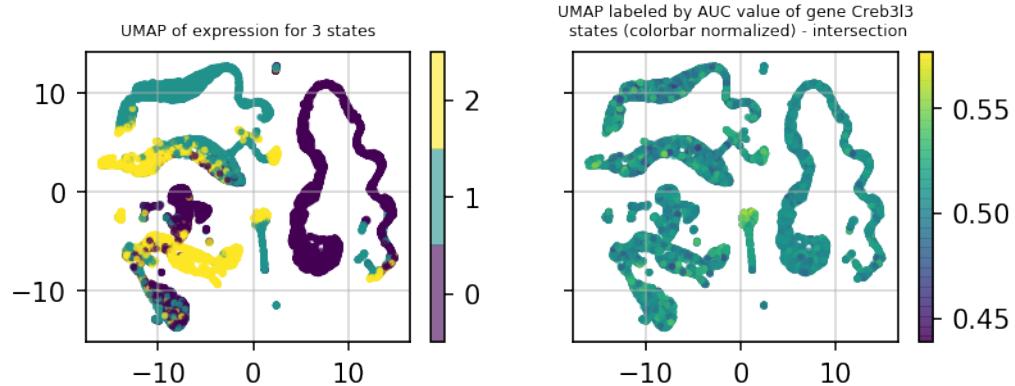
Foxn3



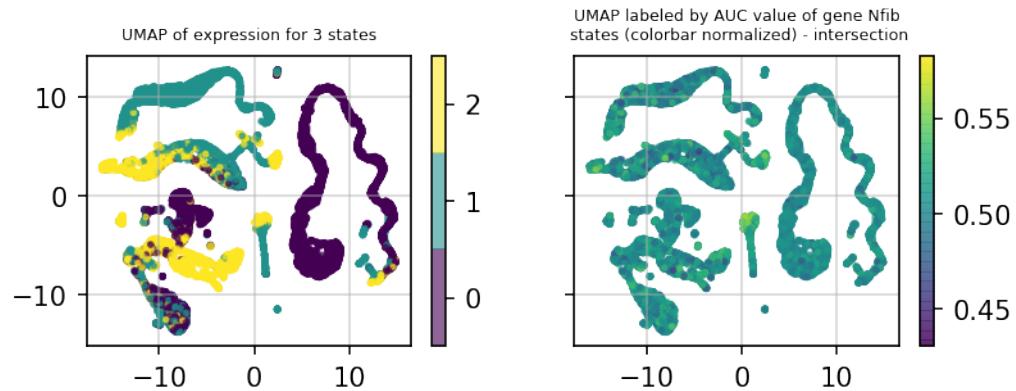
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Prox1



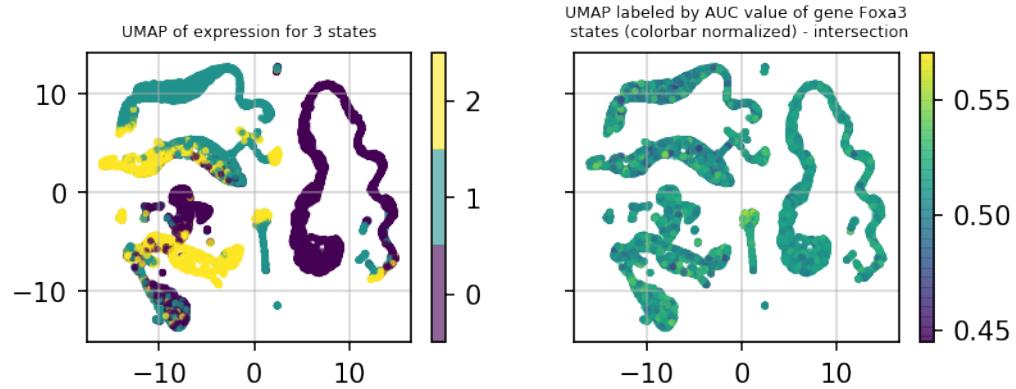
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Creb3l3



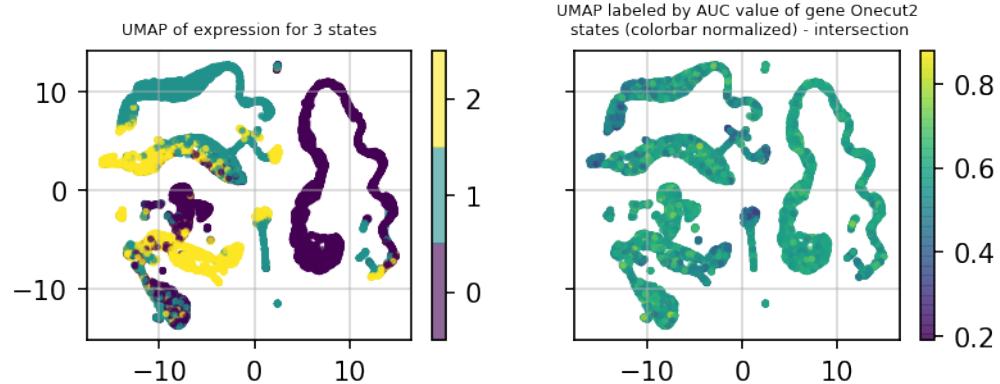
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Nfib



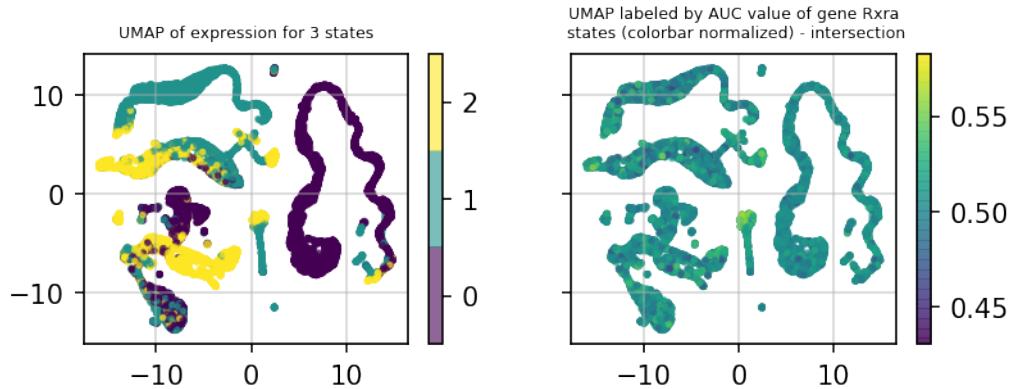
Foxa3



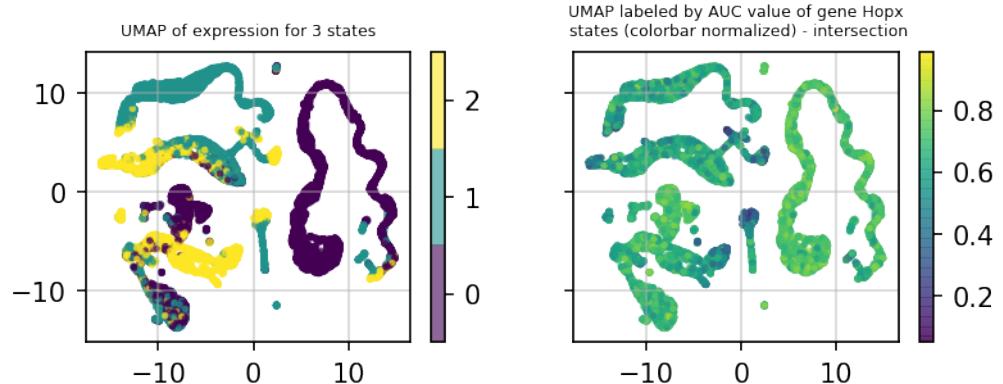
Onecut2



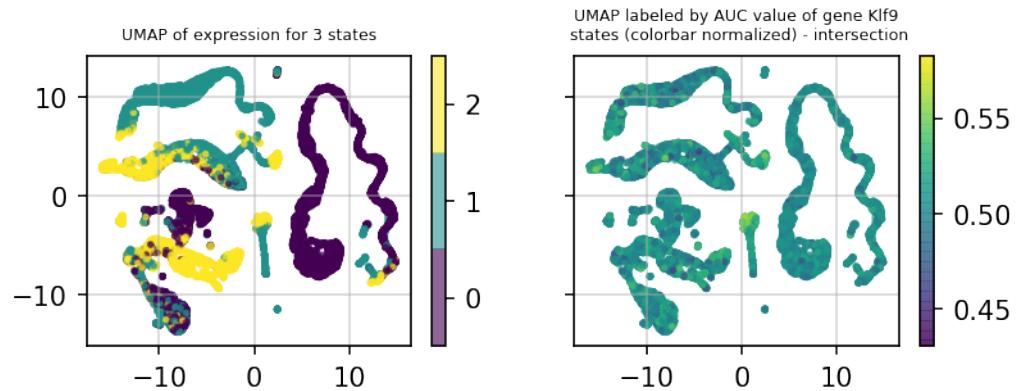
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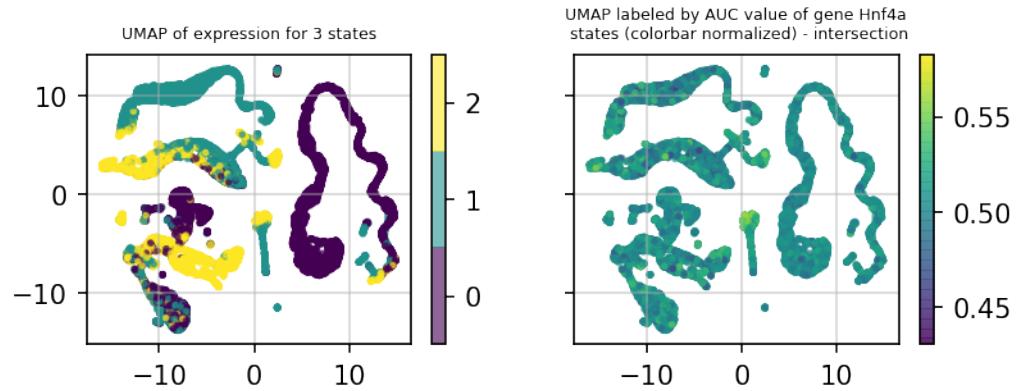
Hopx



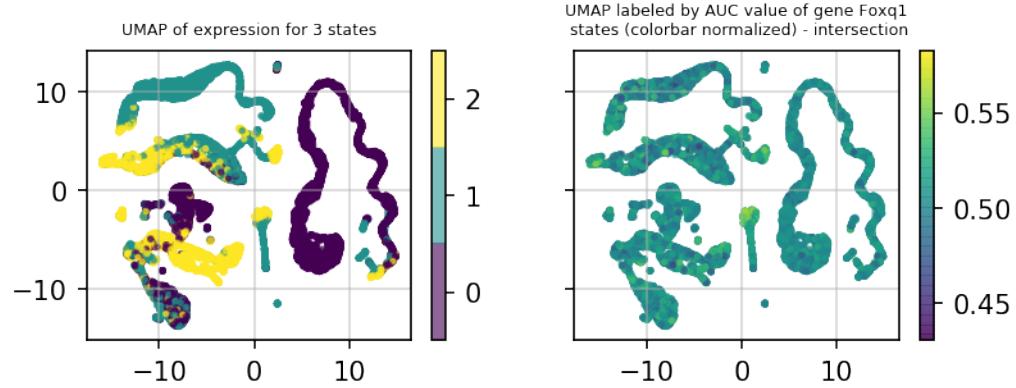
Klf9



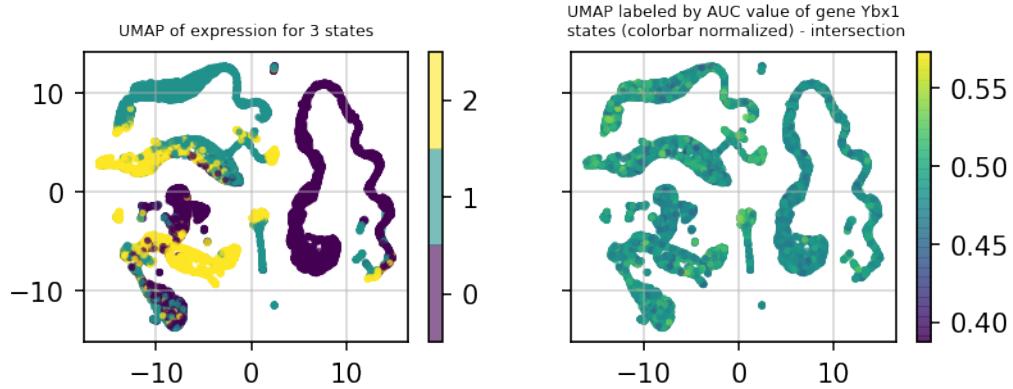
Hnf4a



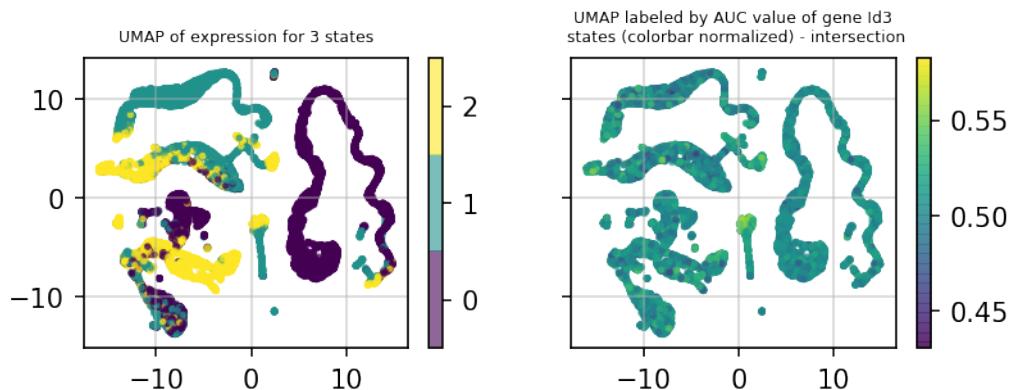
Foxq1



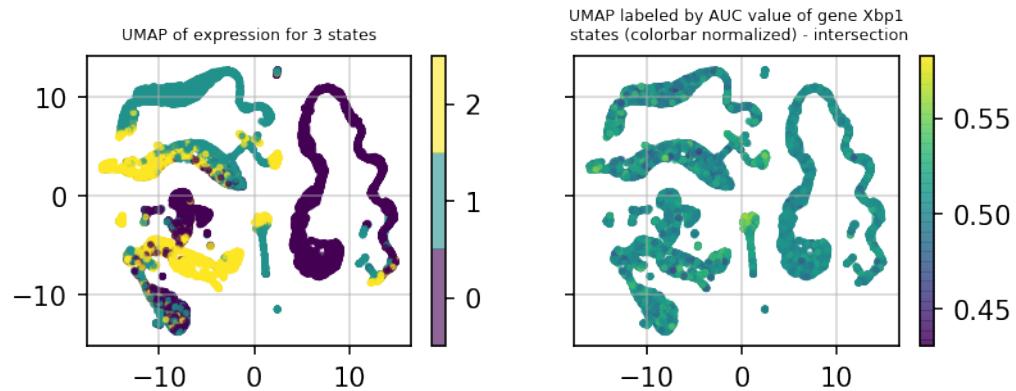
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Ybx1



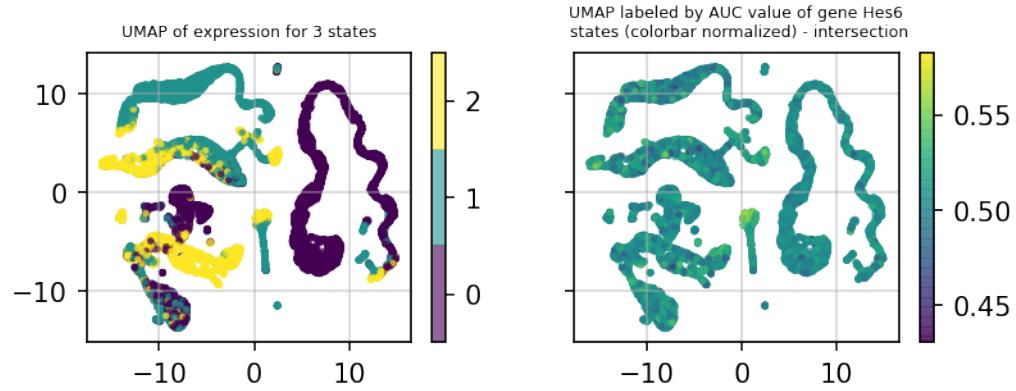
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Id3



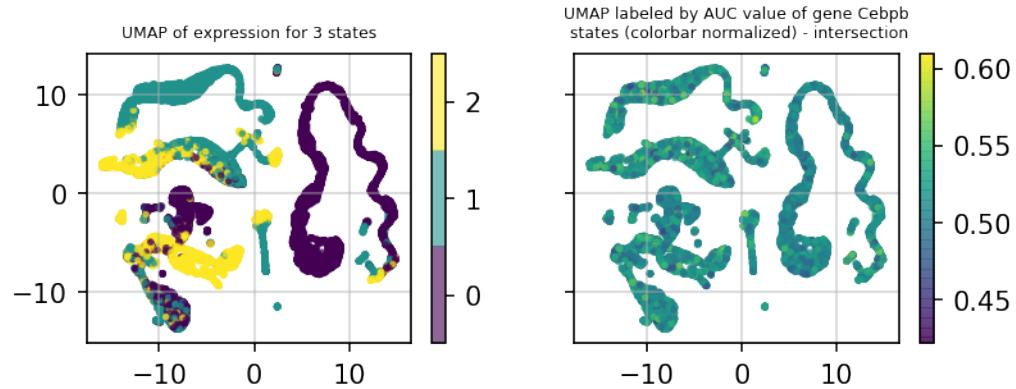
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Xbp1



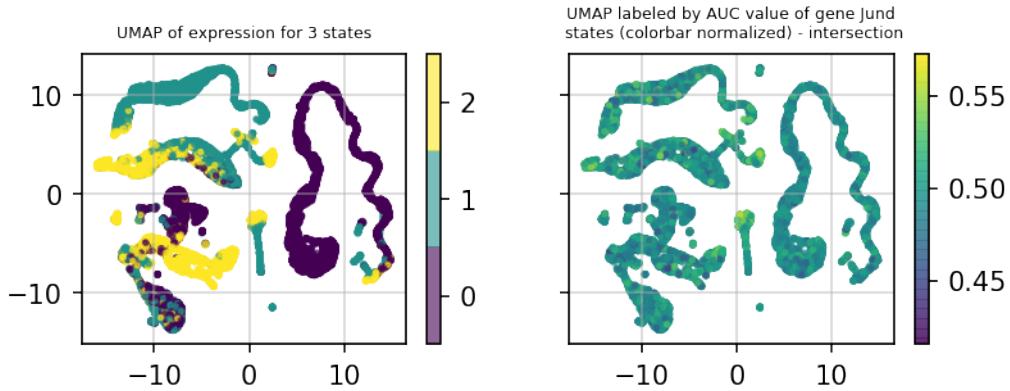
Hes6



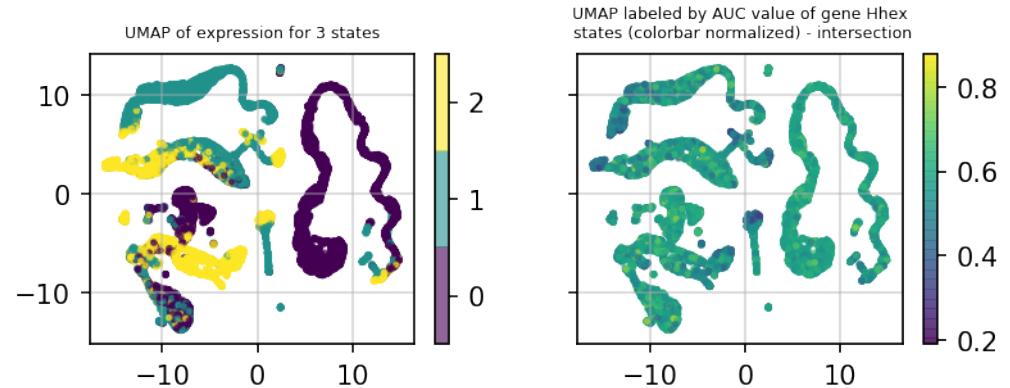
Cebpb



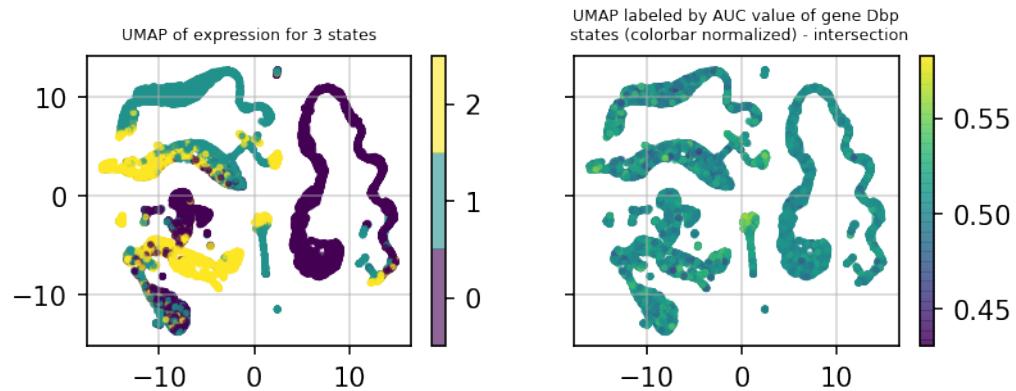
Jund



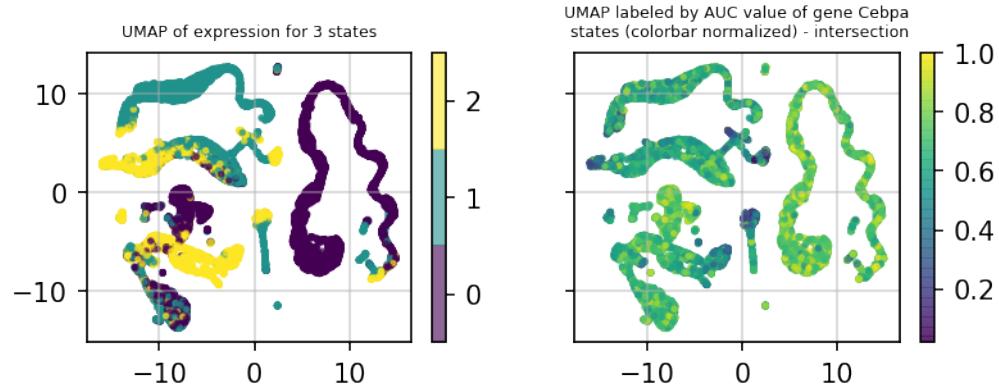
Hhex



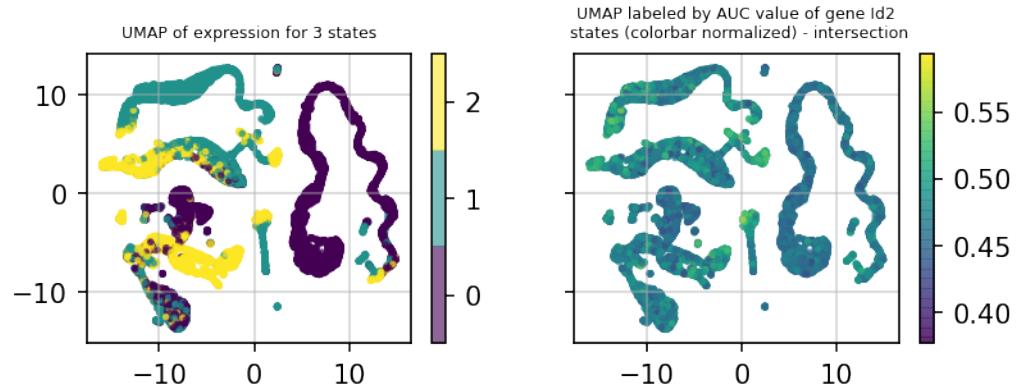
Dbp



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Cebpa

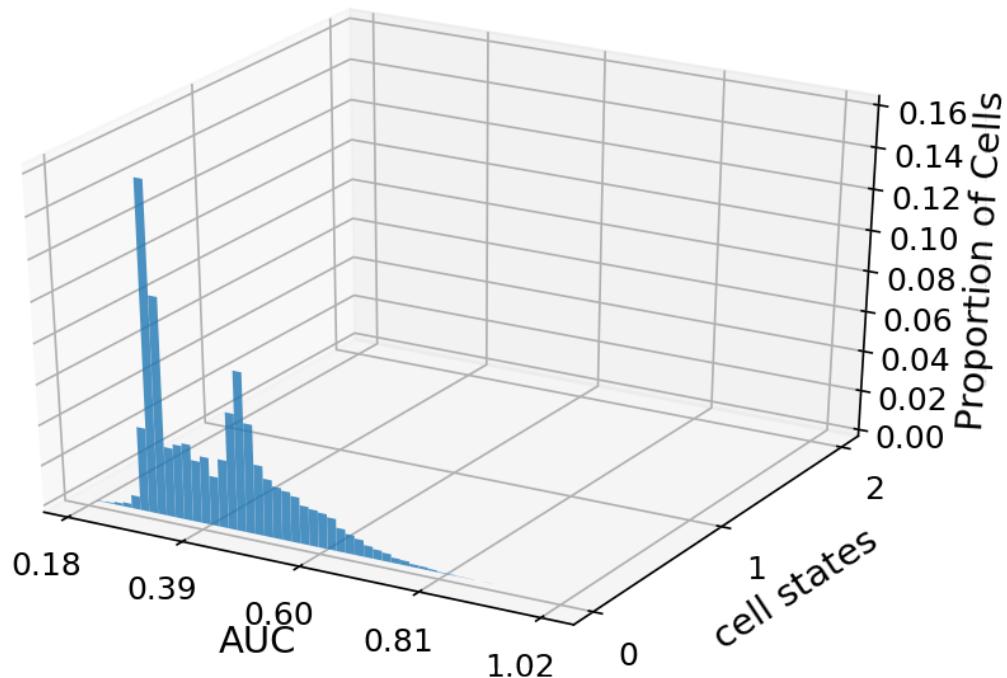


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Id2

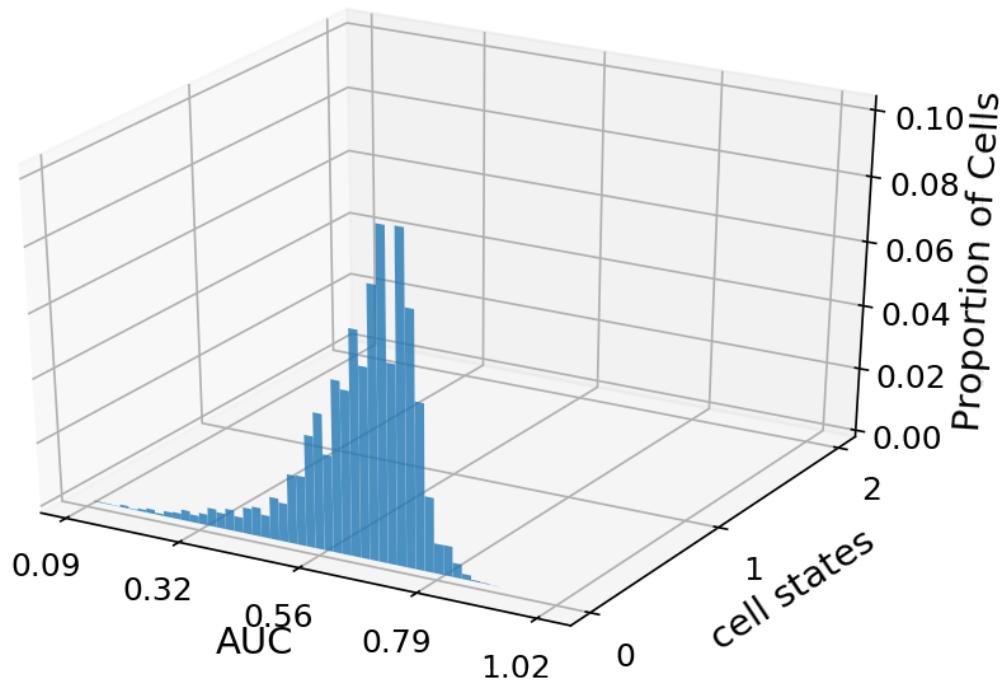


## 8 Histogram of all genes in SINCERITIES

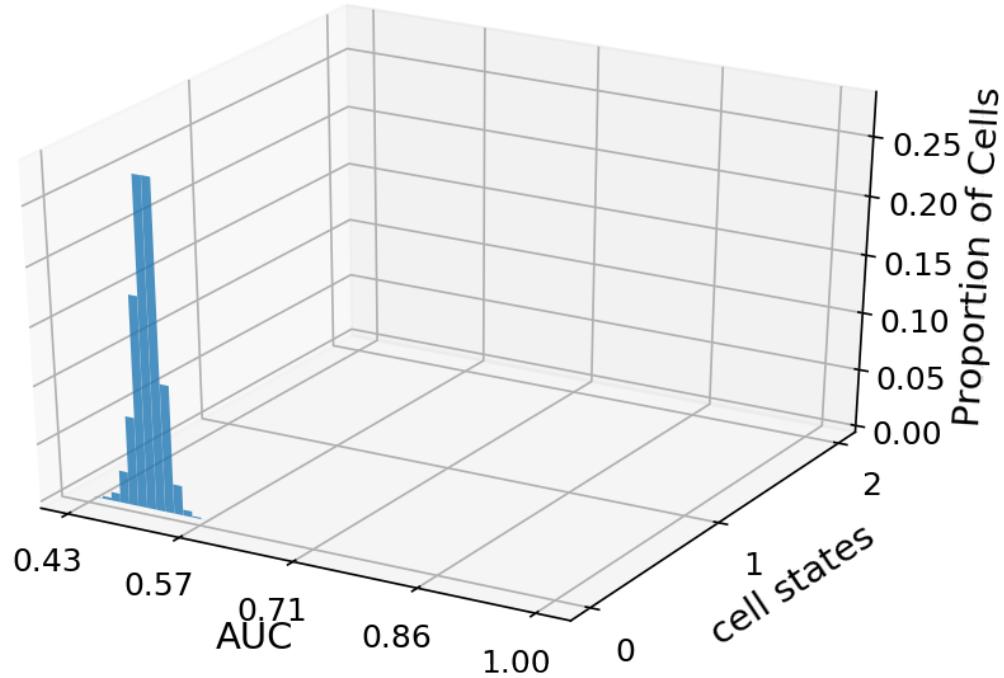
Epas1



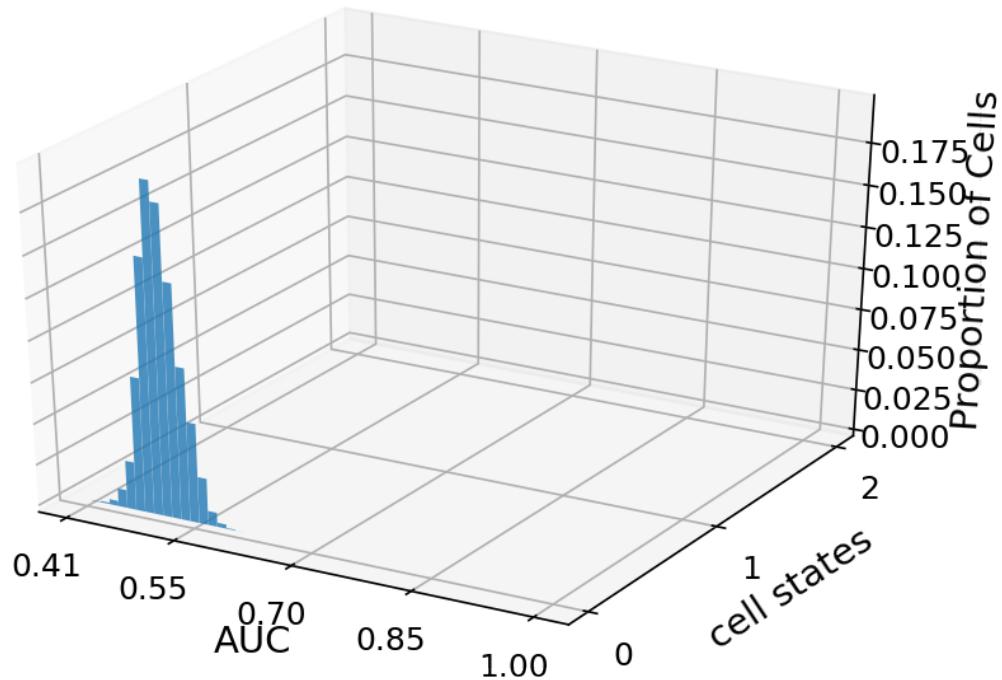
Junb



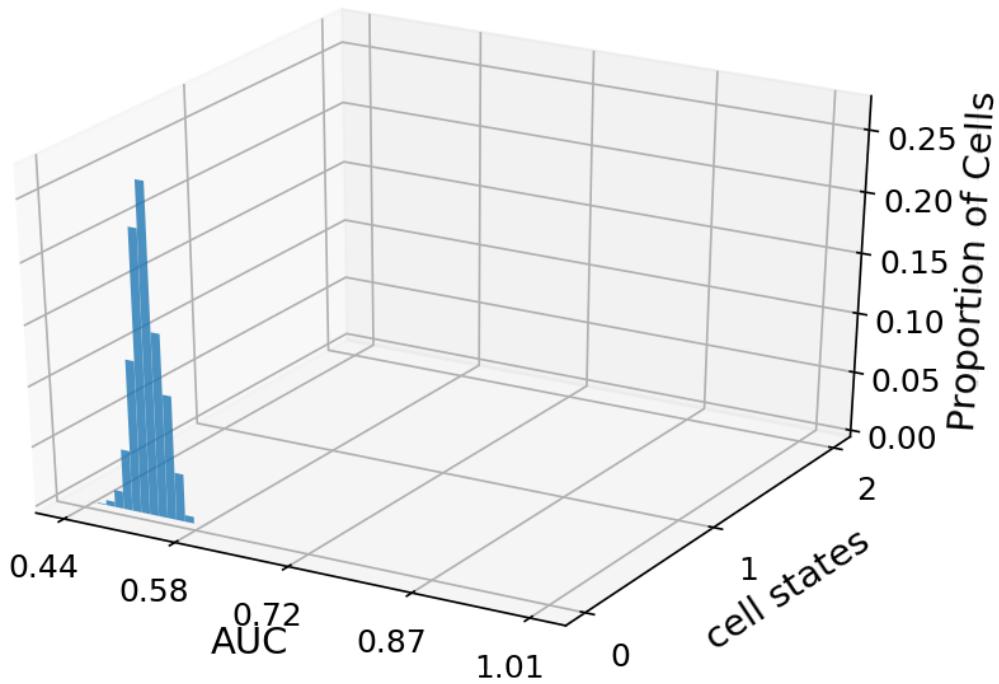
Usf2



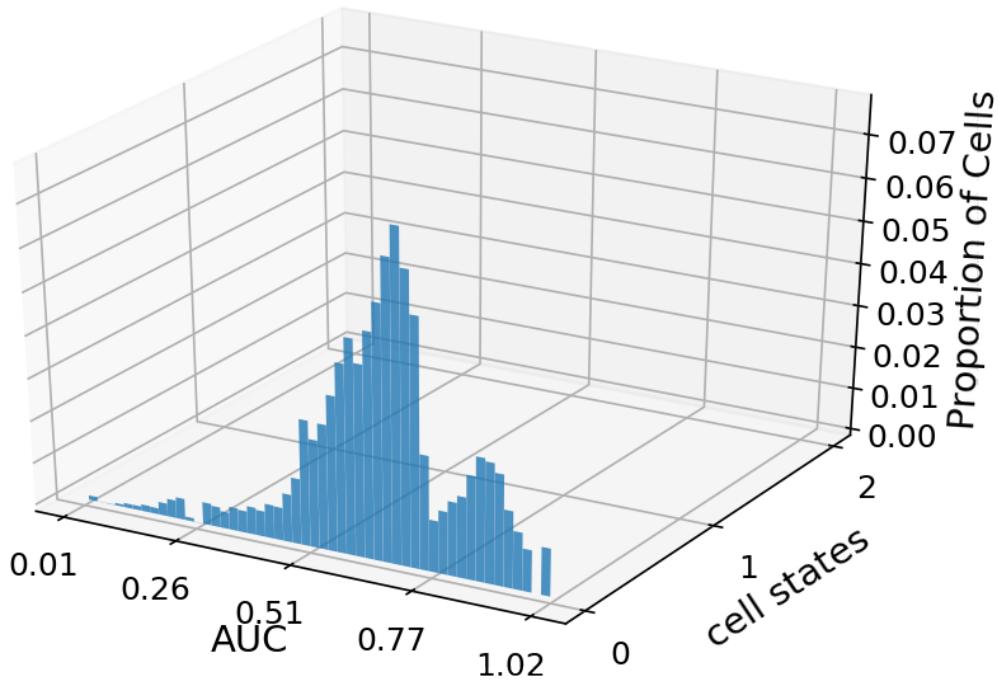
Bhlhe40



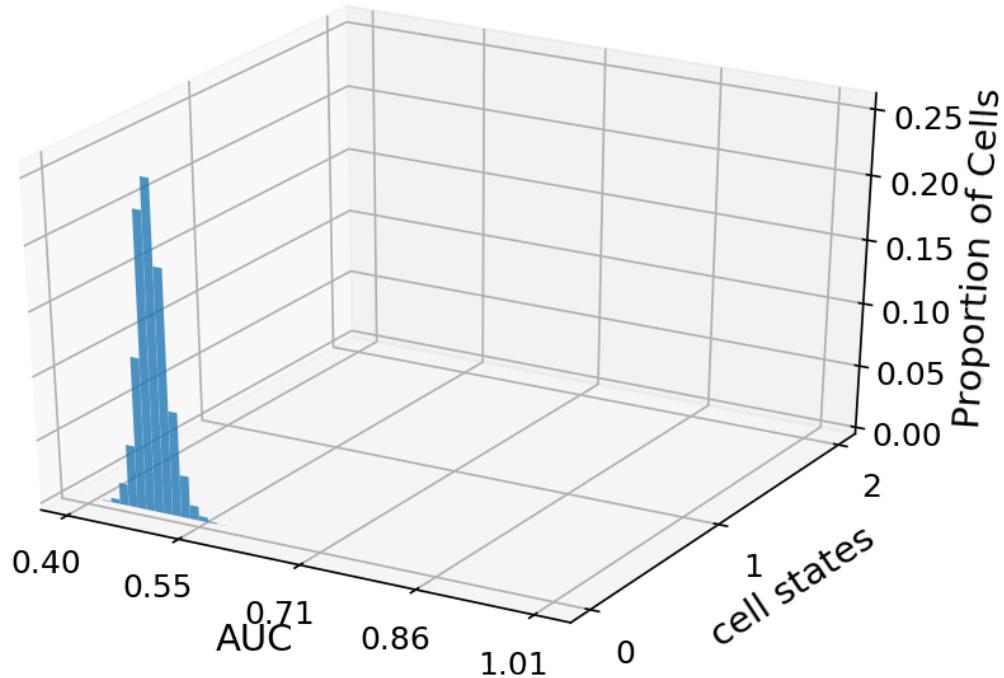
Hbp1



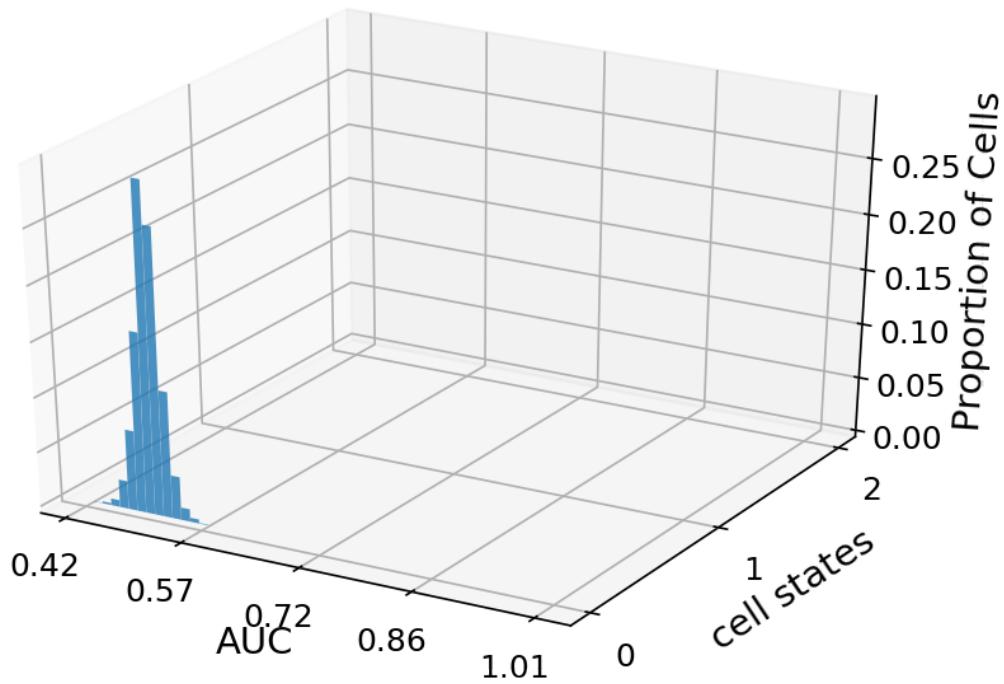
Nr3c1



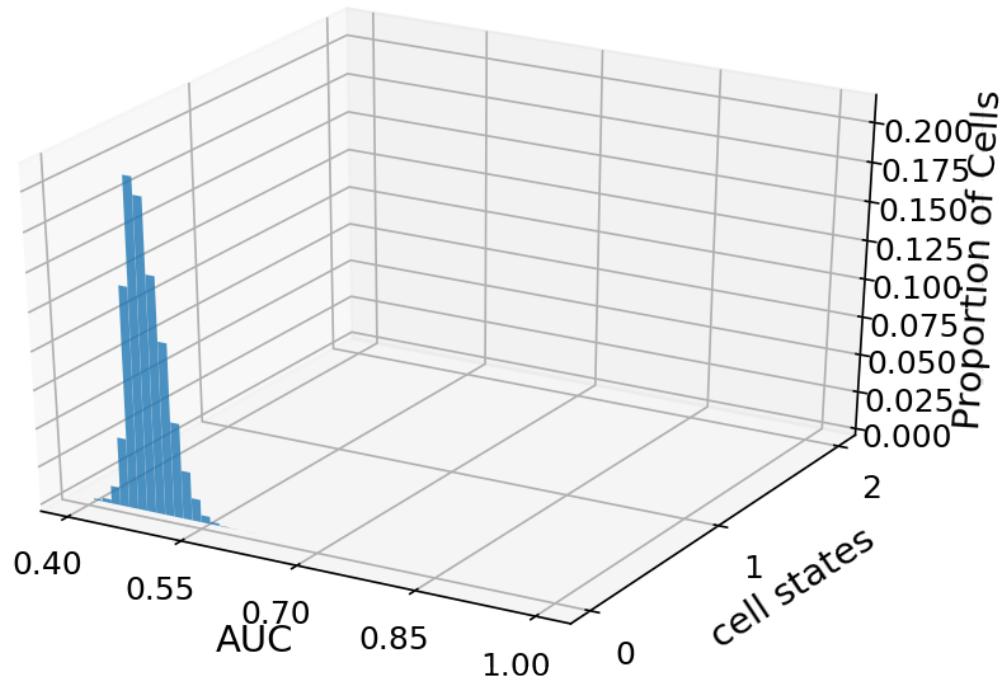
Tsc22d3



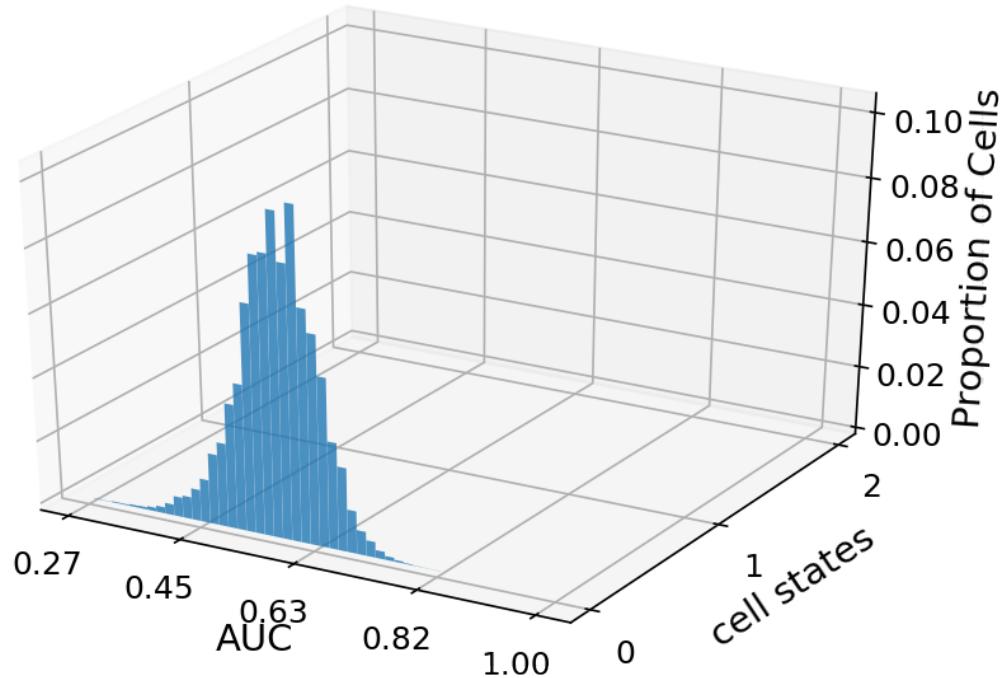
Zfp91



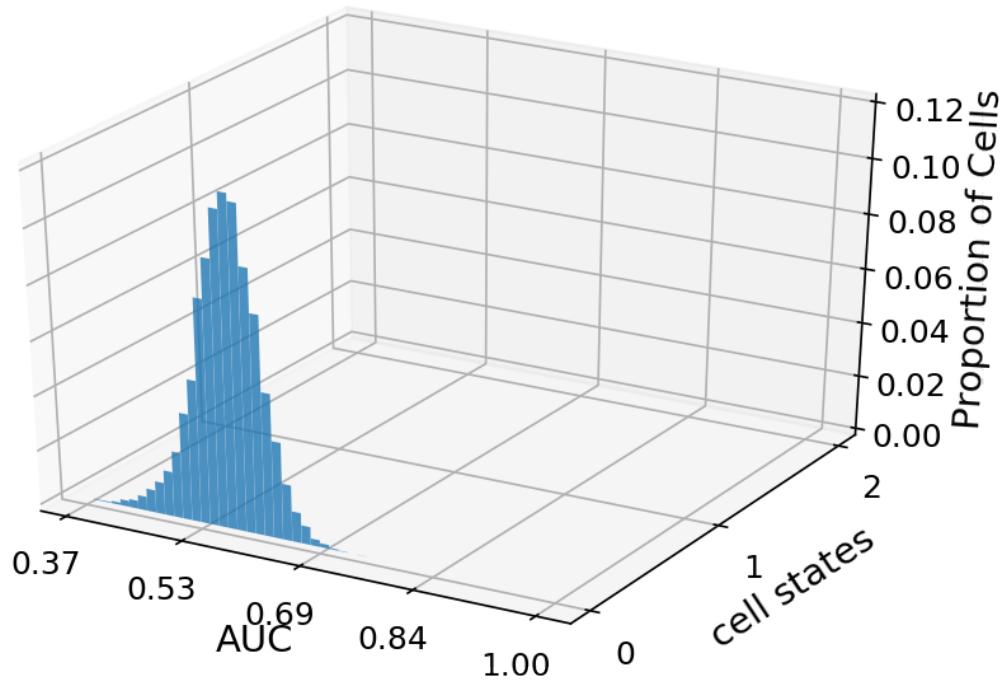
Sfpq



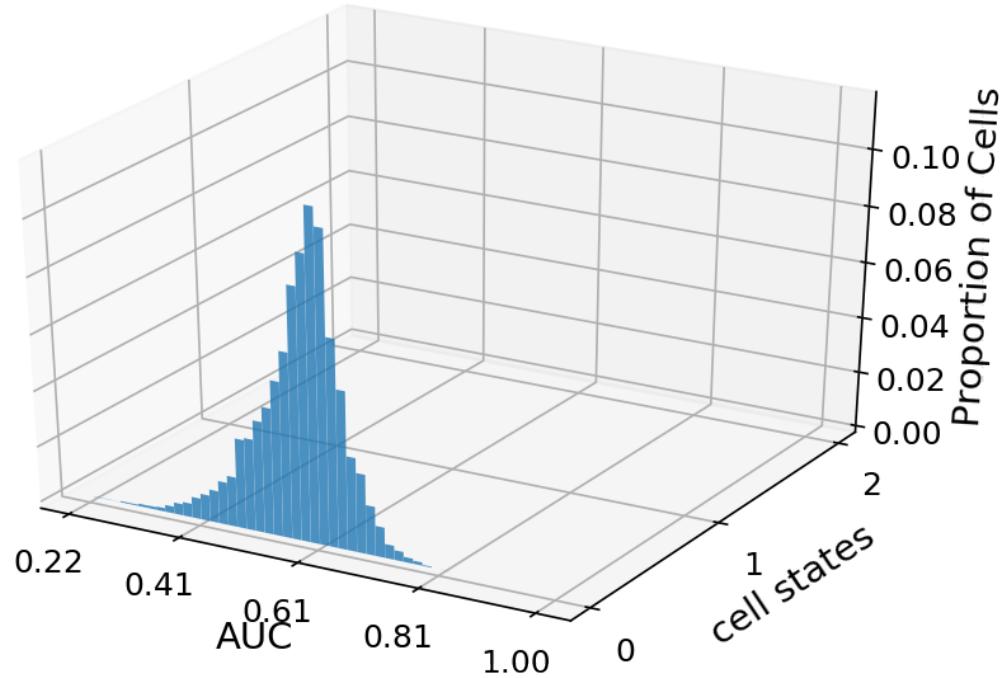
Irf2



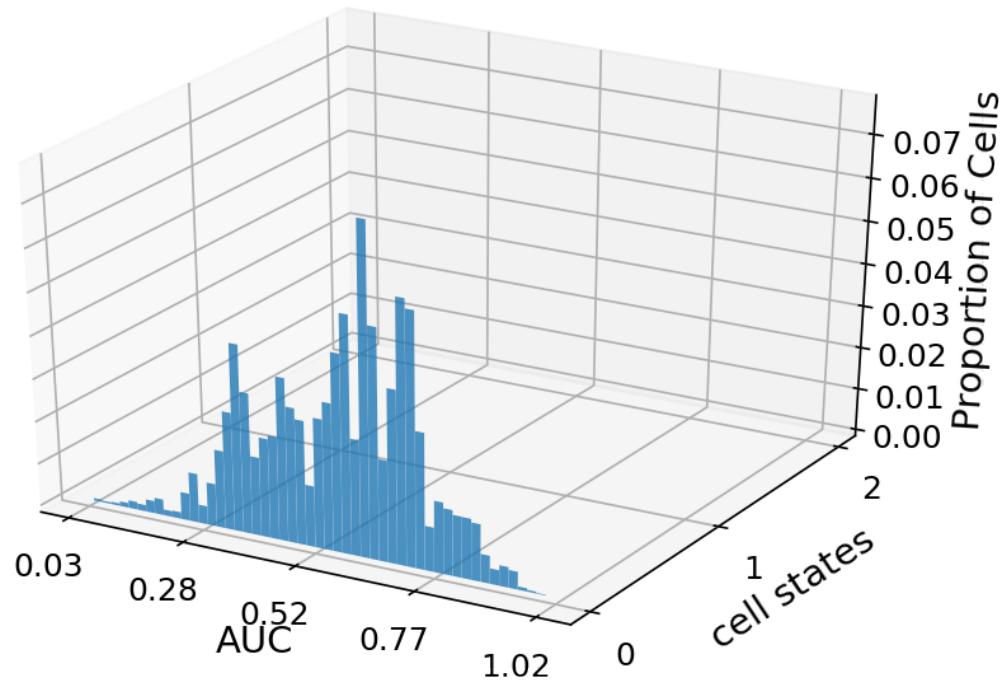
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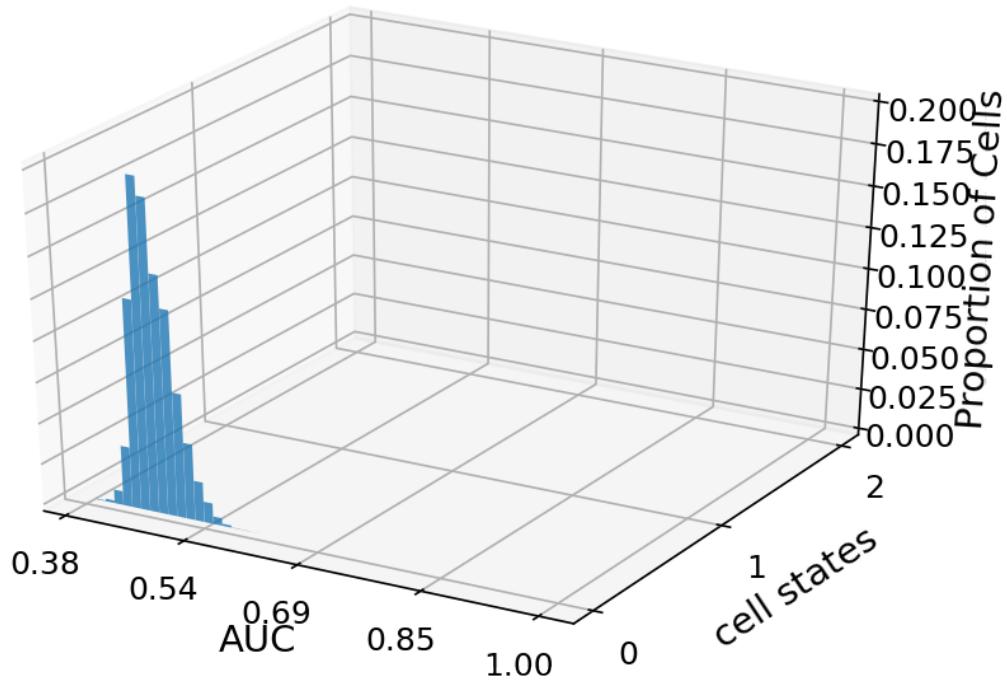
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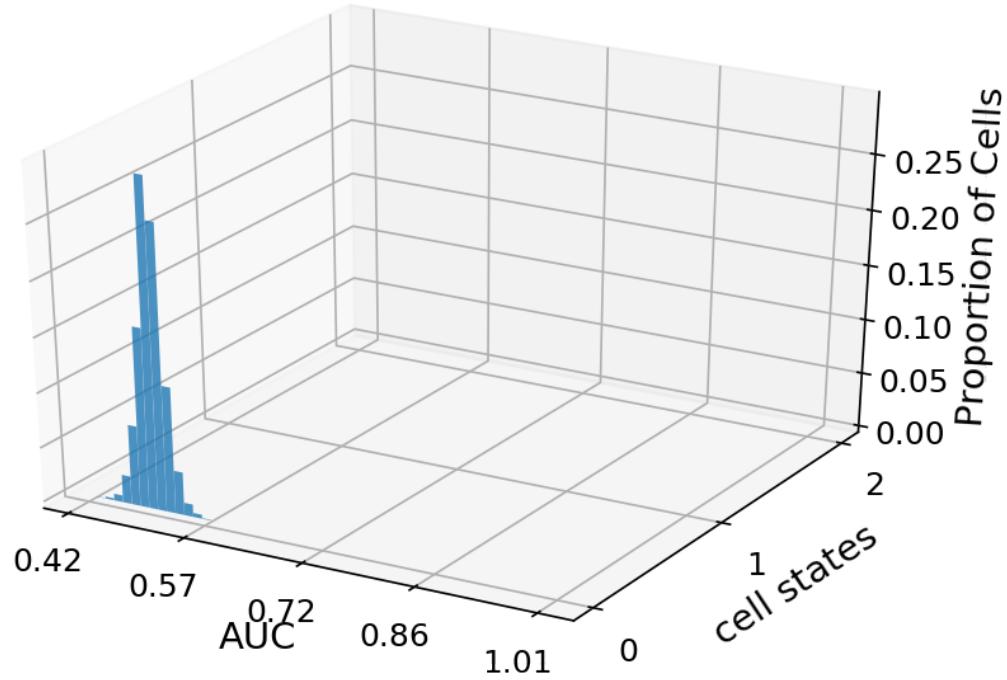
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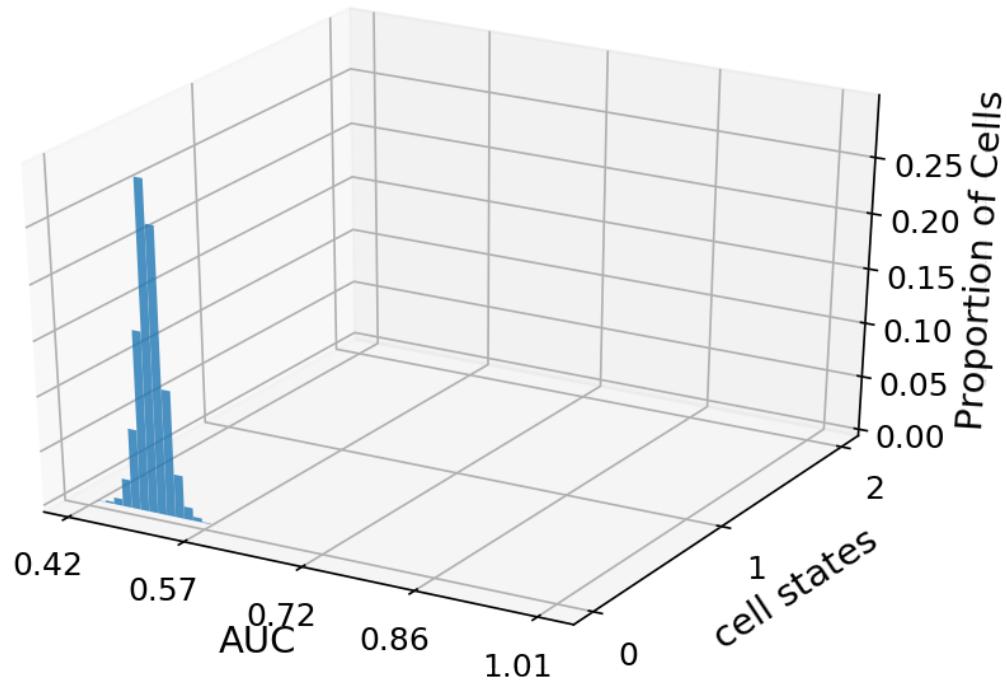
Ncor1



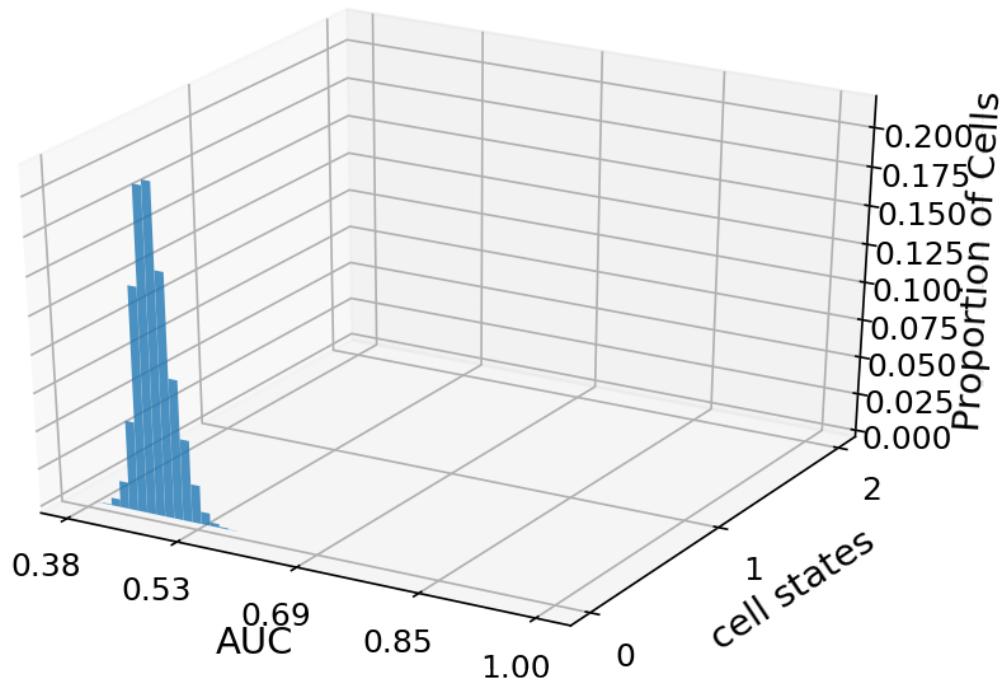
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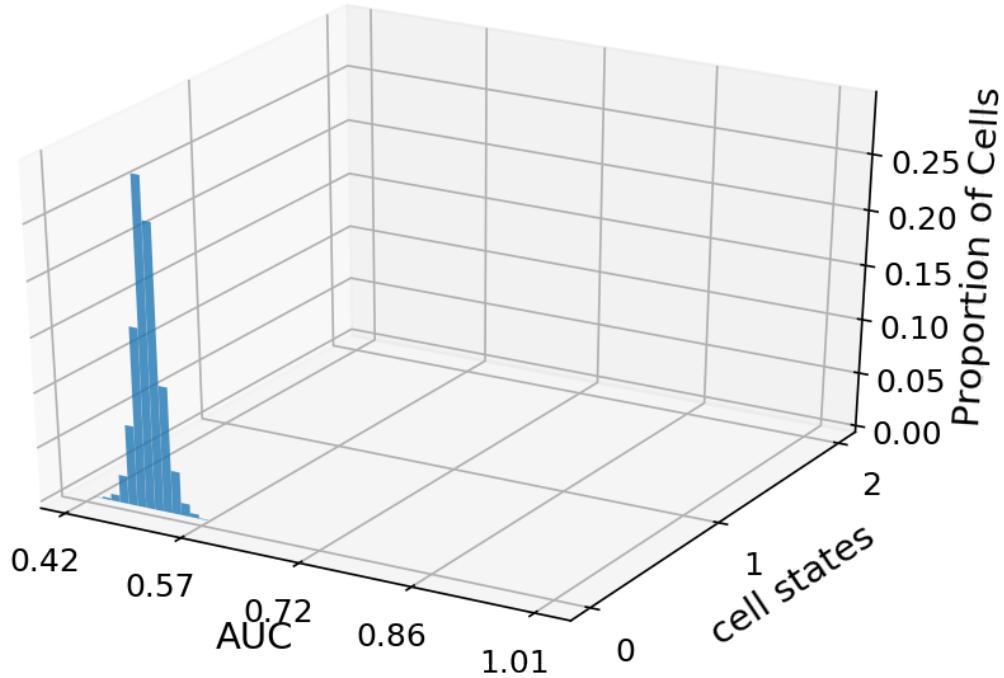
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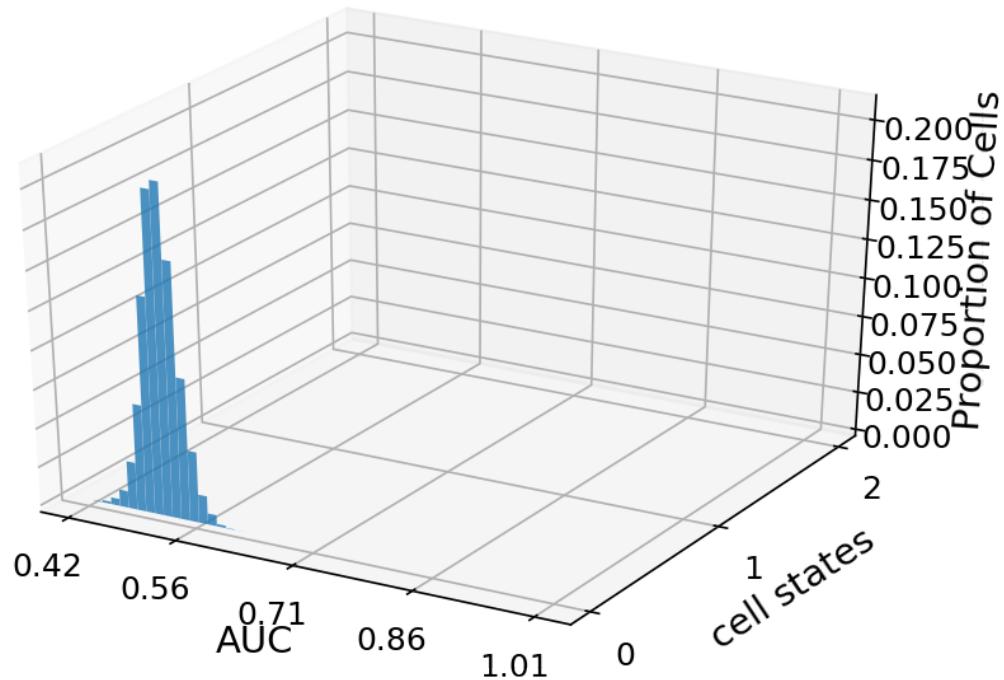
Nr2f6



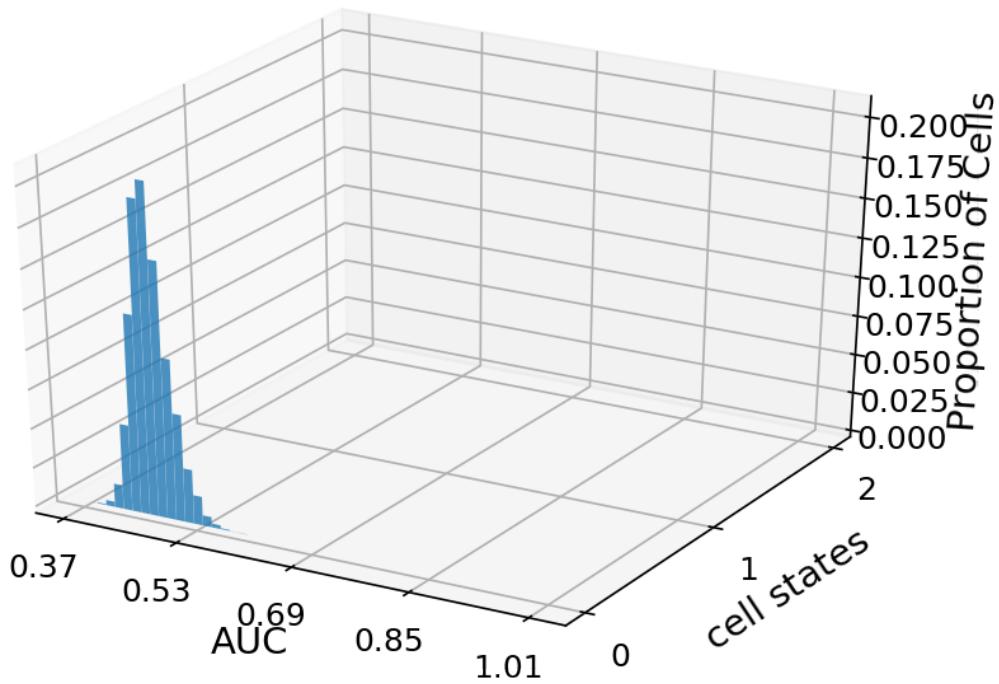
Phf5a



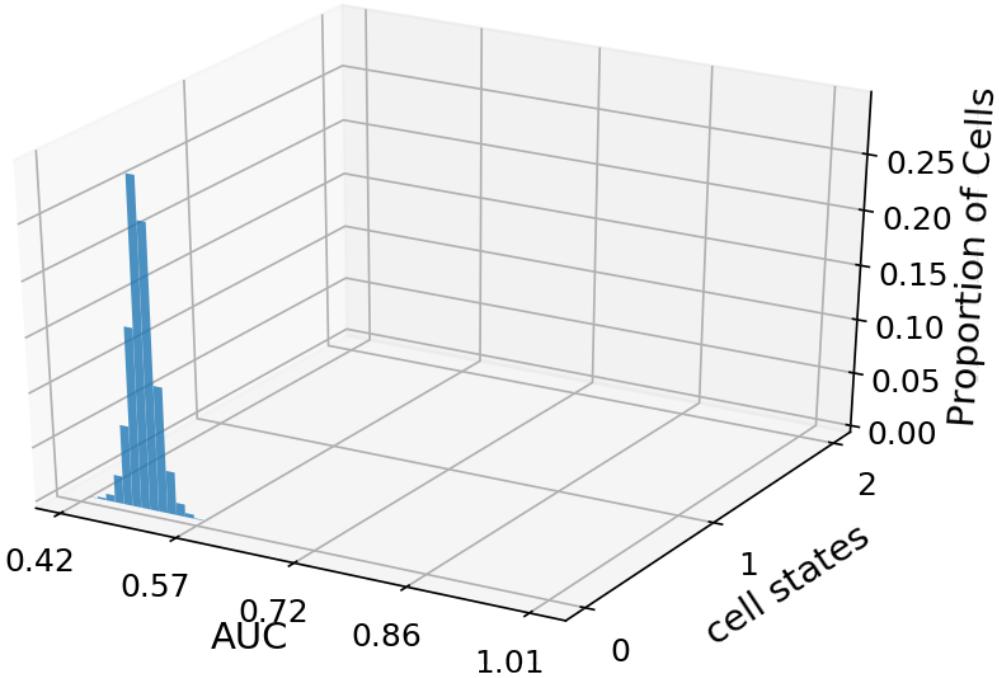
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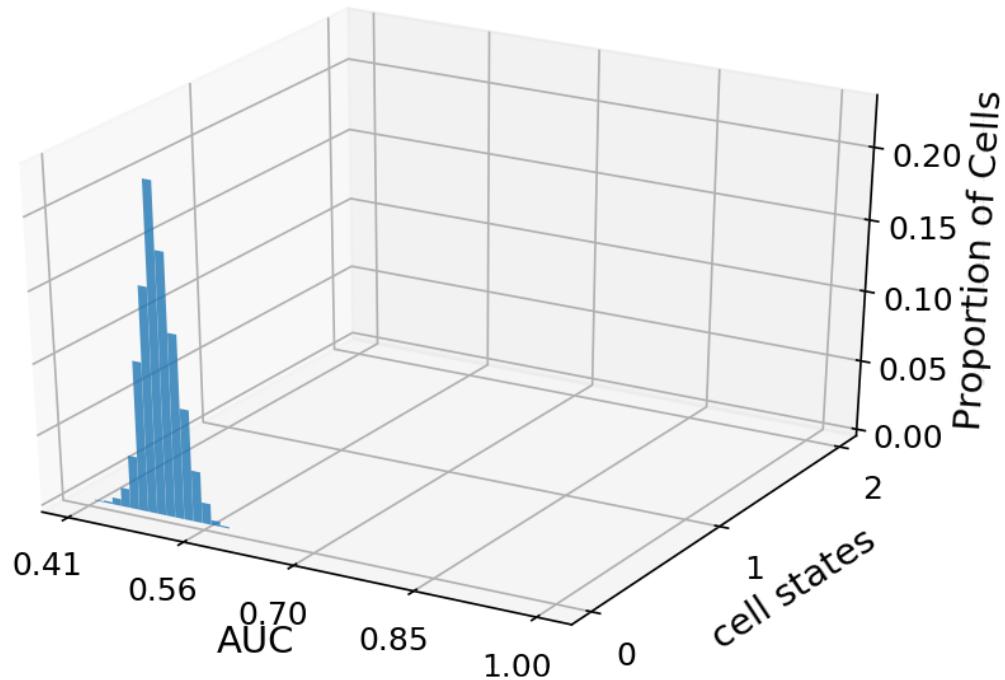
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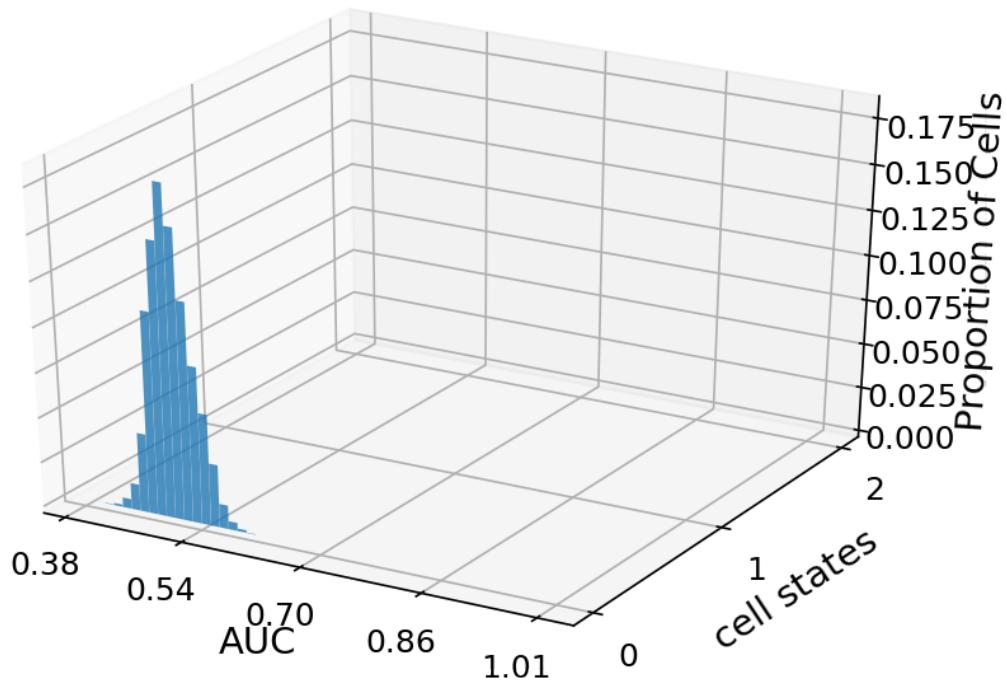
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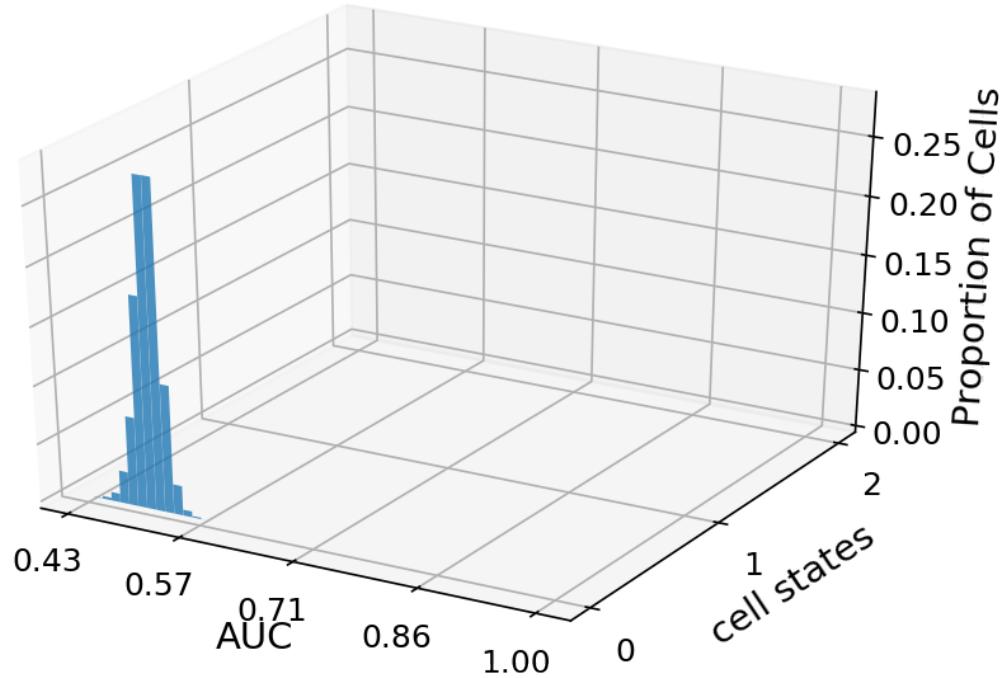
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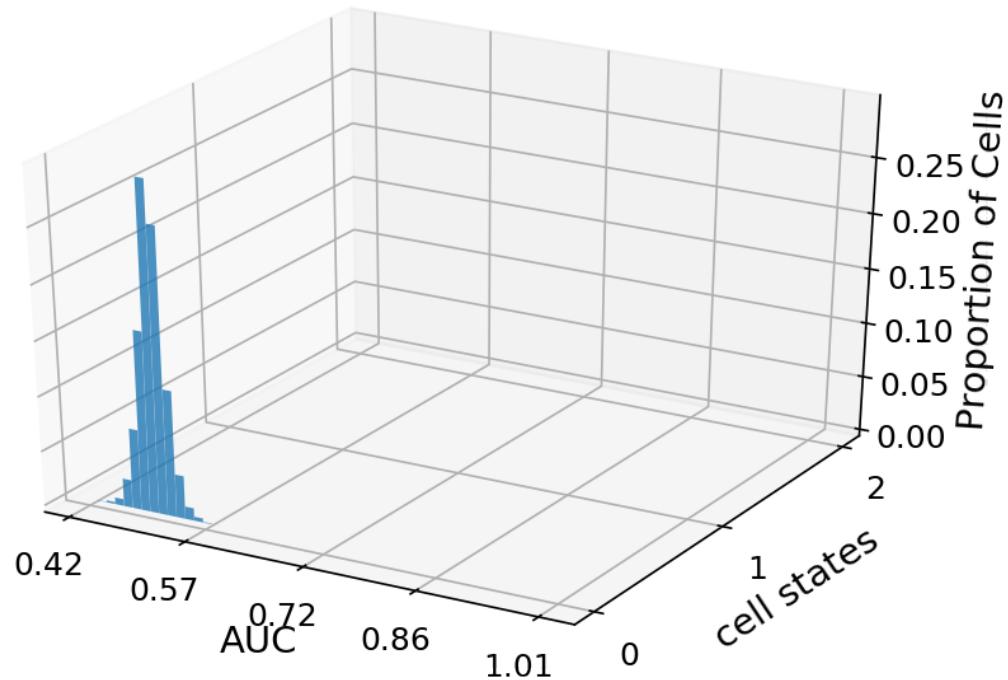
Mafb



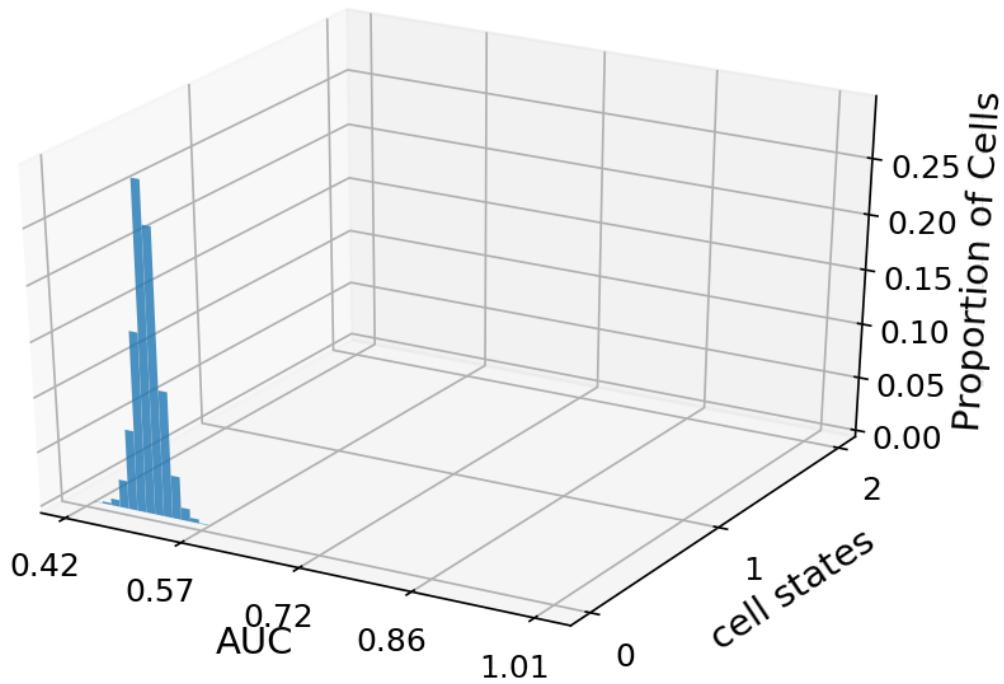
Gata6



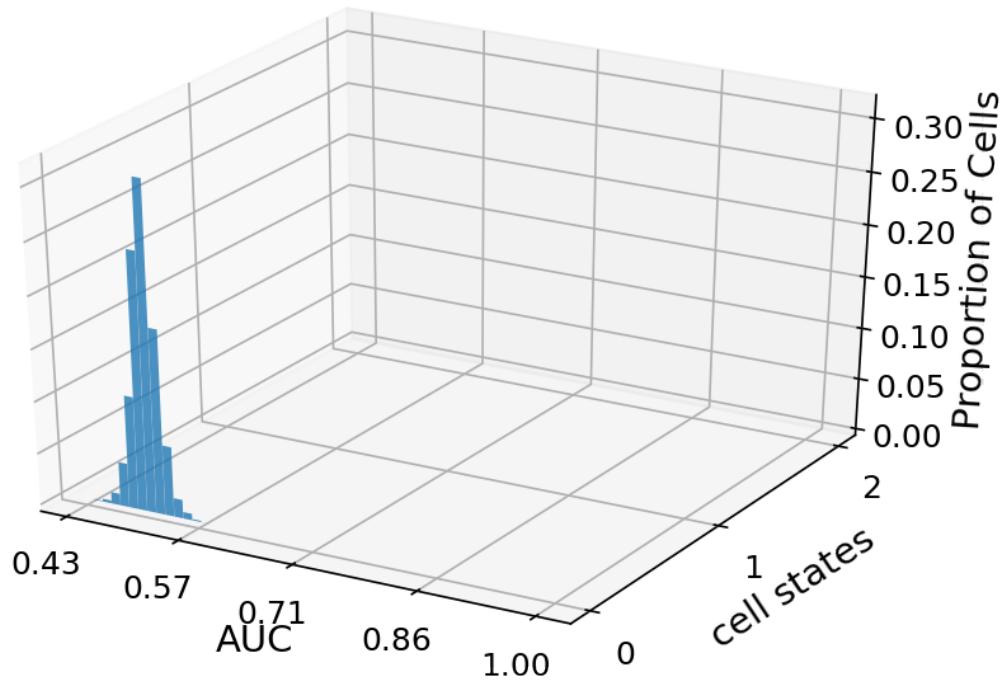
Nfix



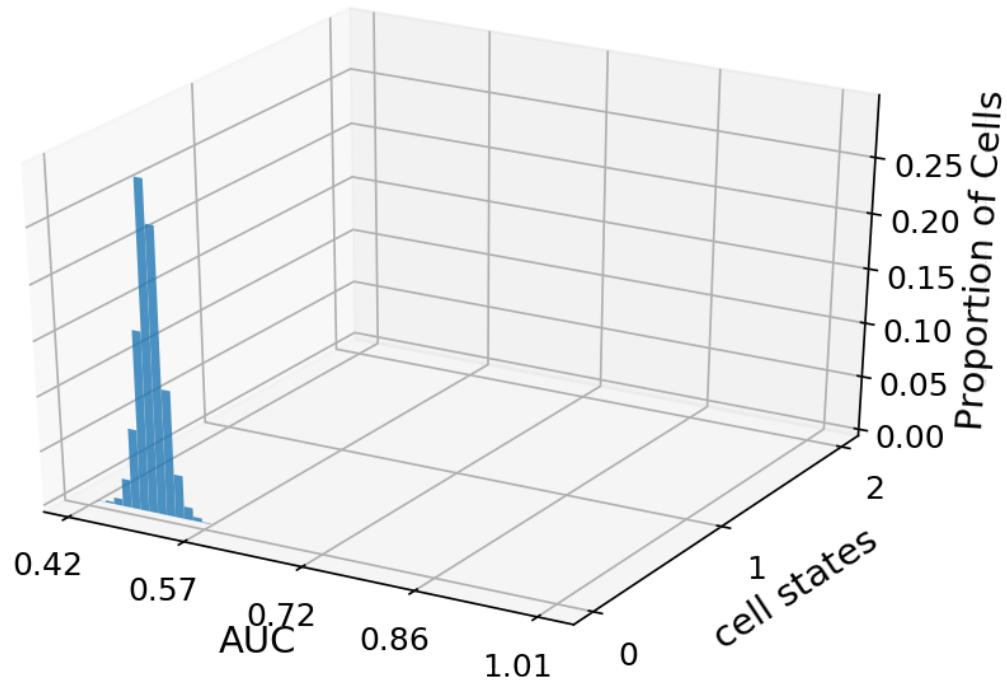
Rora



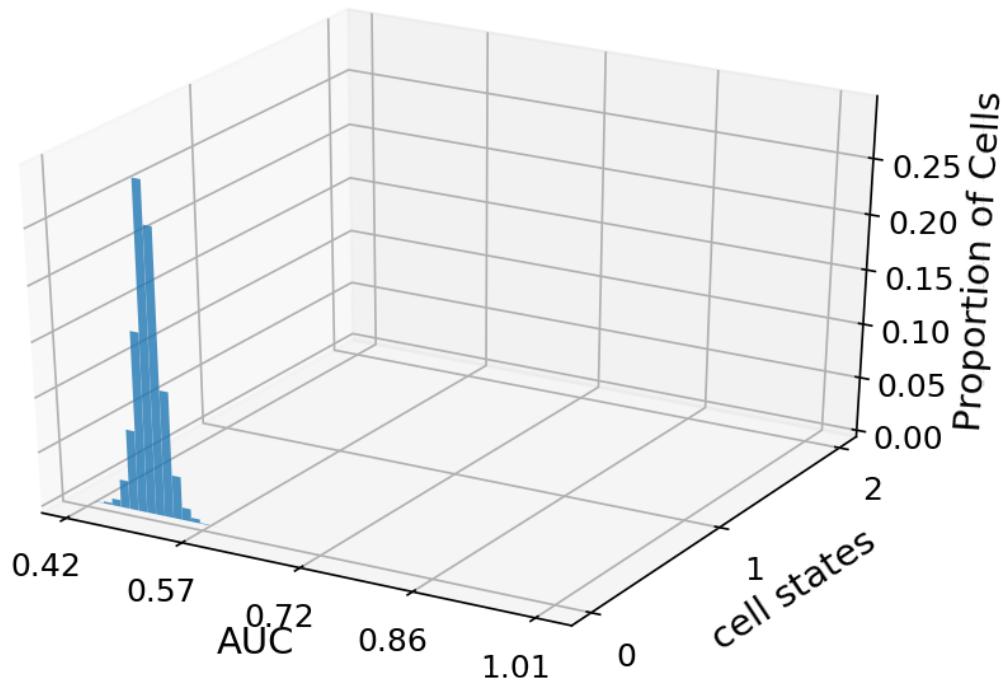
Nr1h3



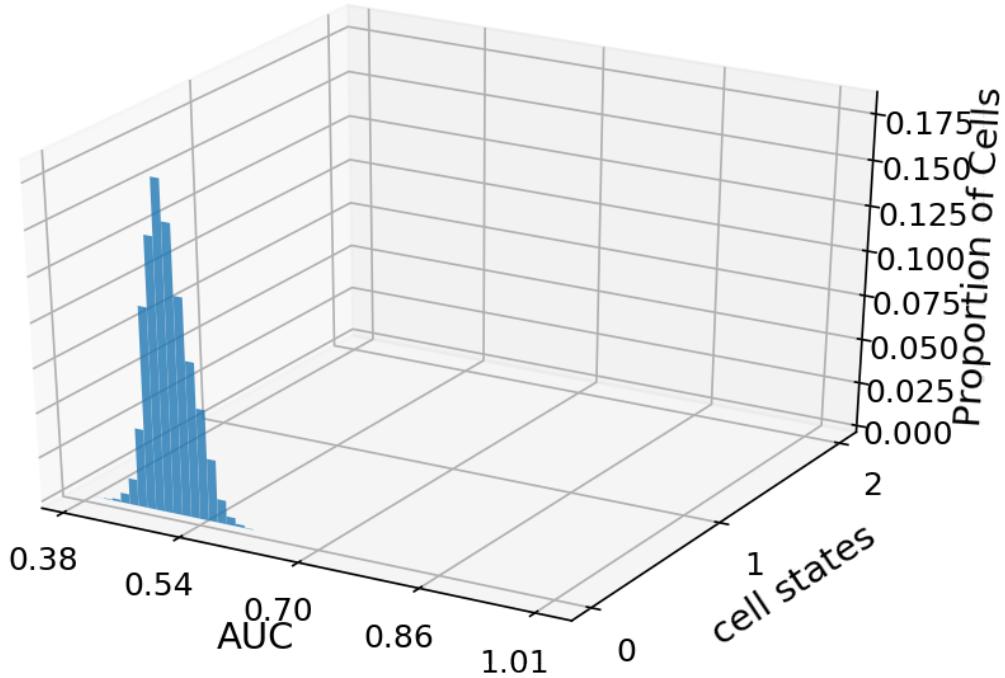
Atf5



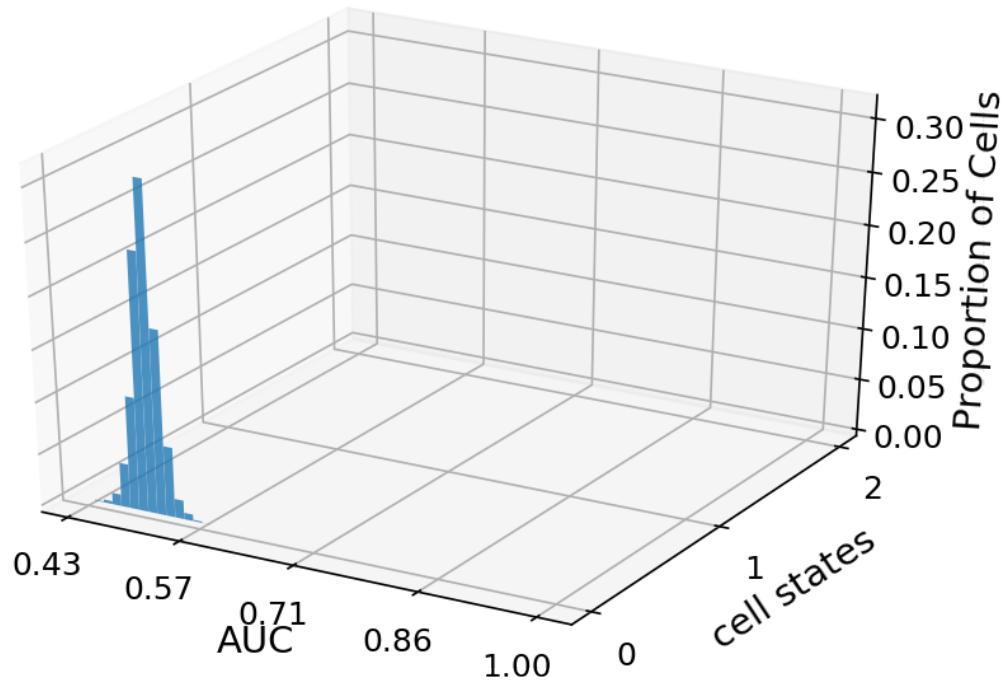
Foxn3



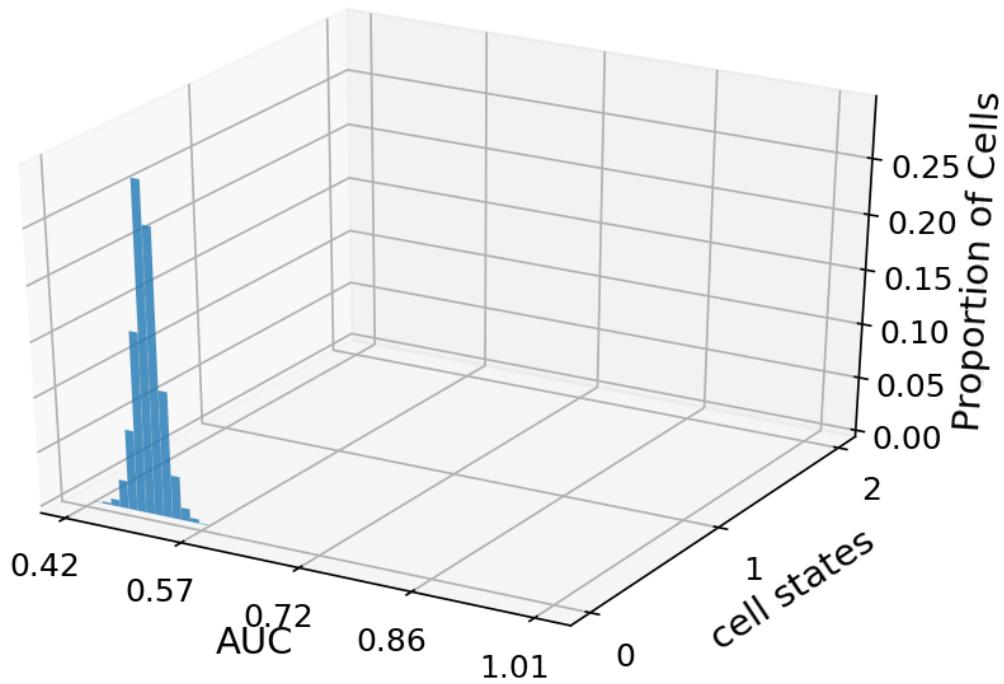
Prox1



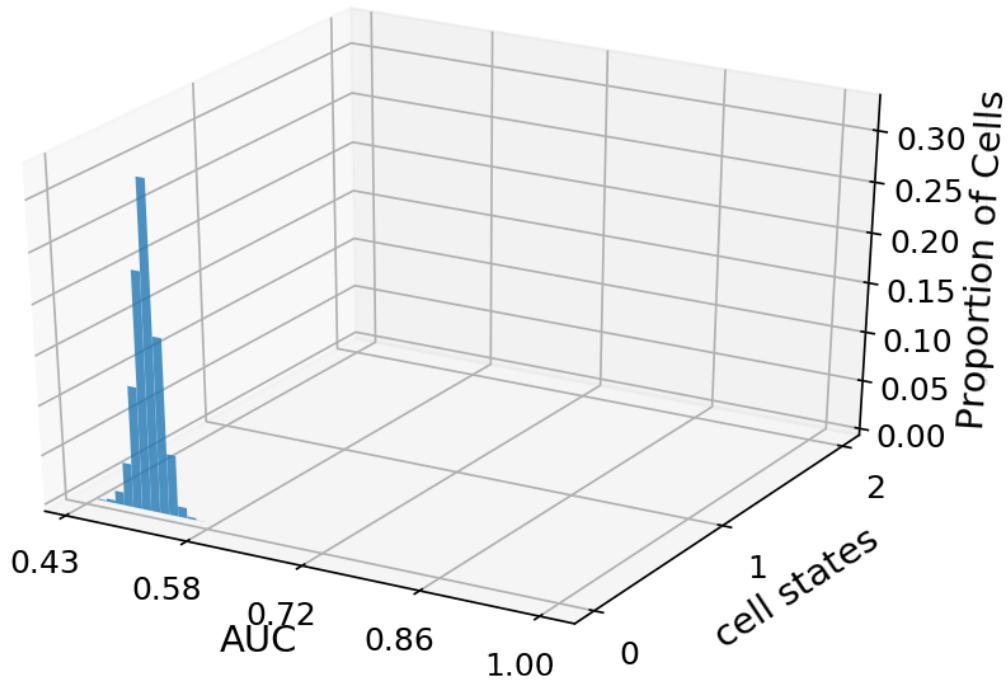
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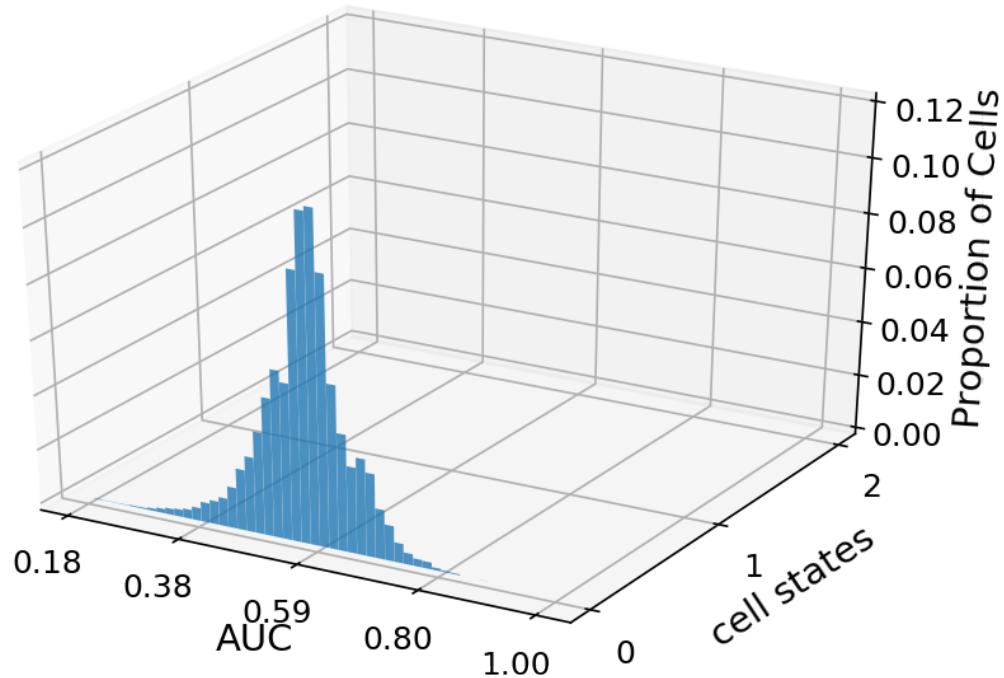
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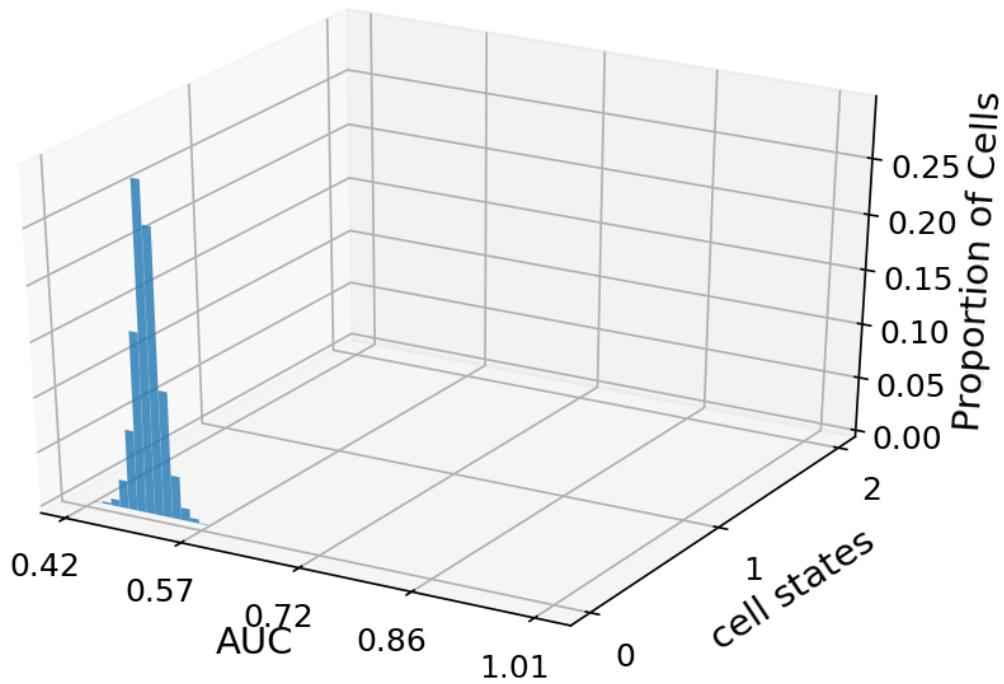
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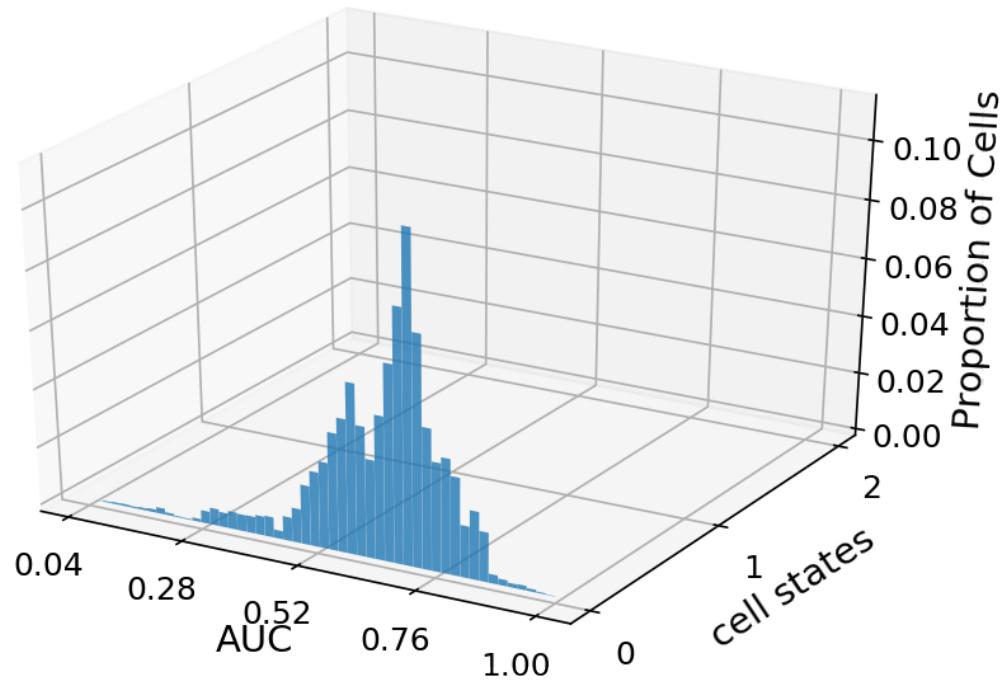
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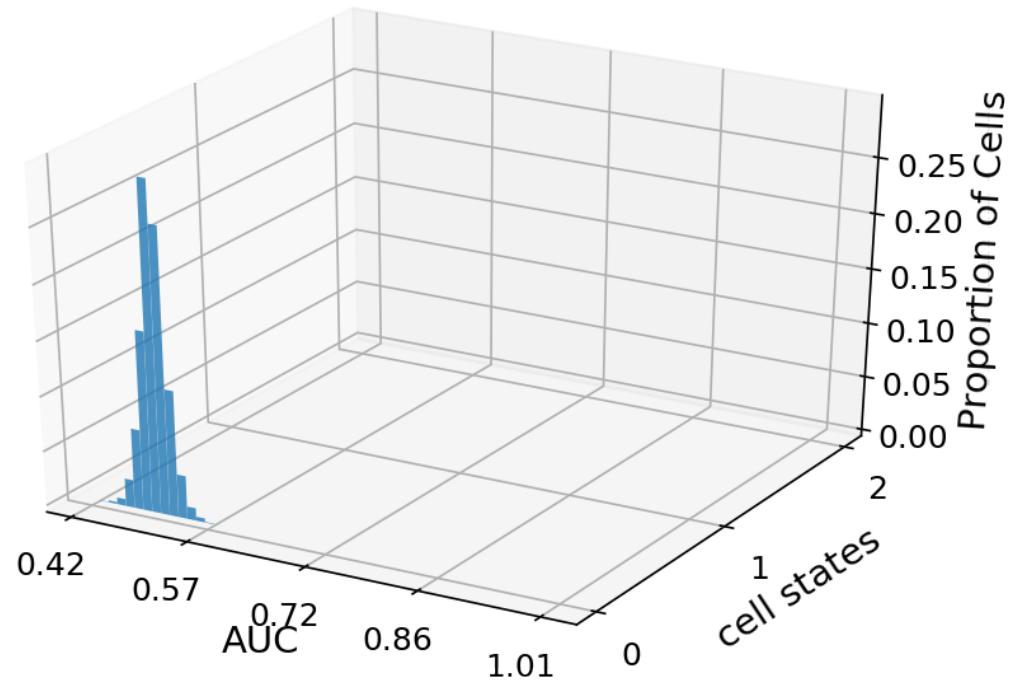
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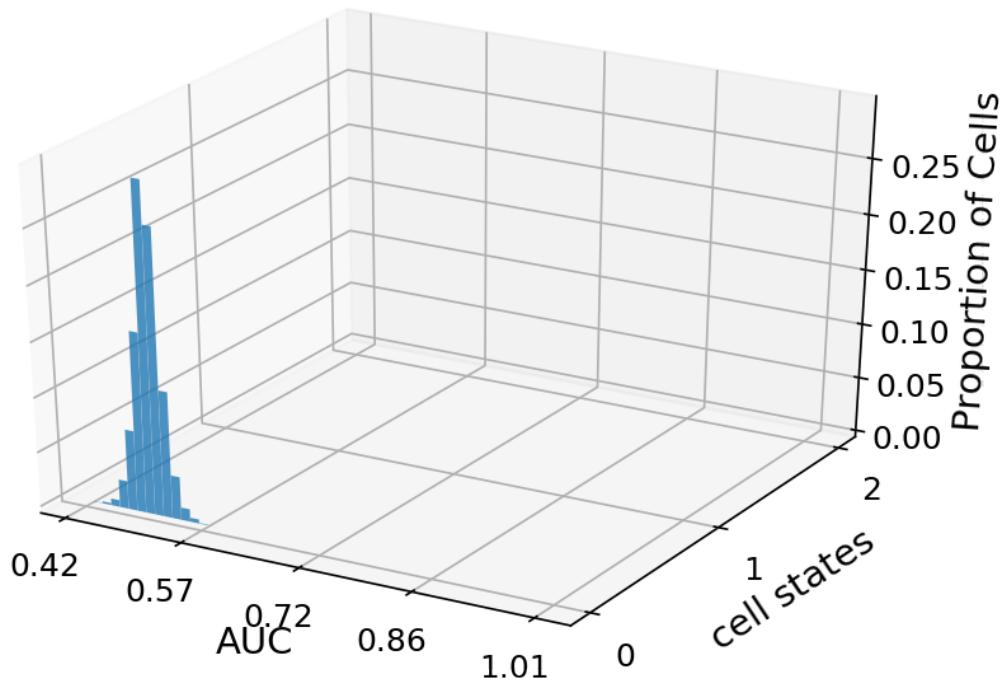
Hopx



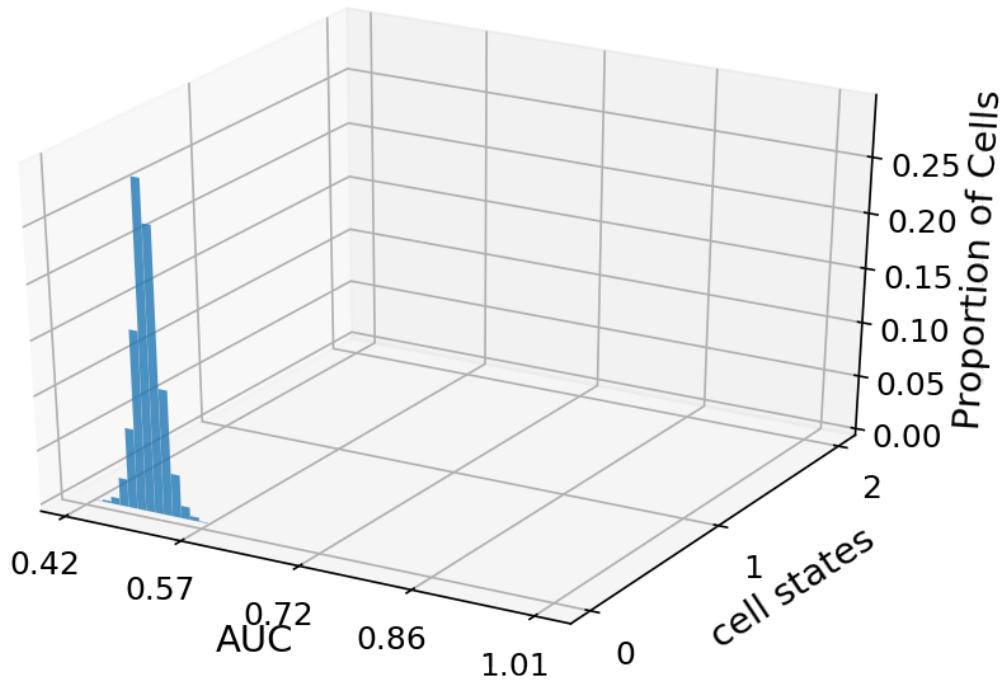
Klf9



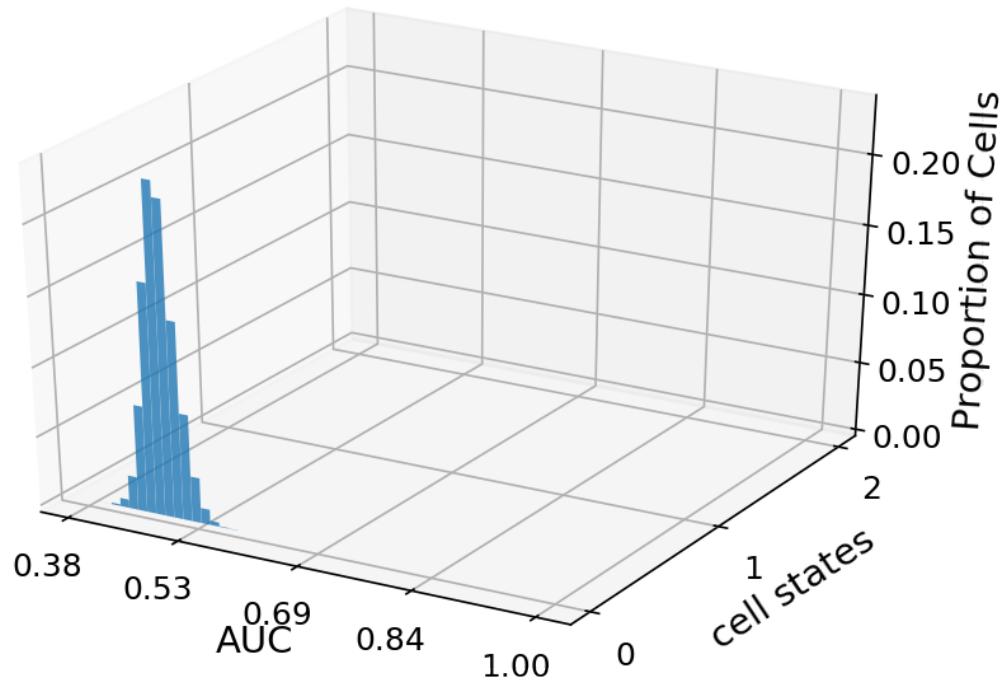
Hnf4a



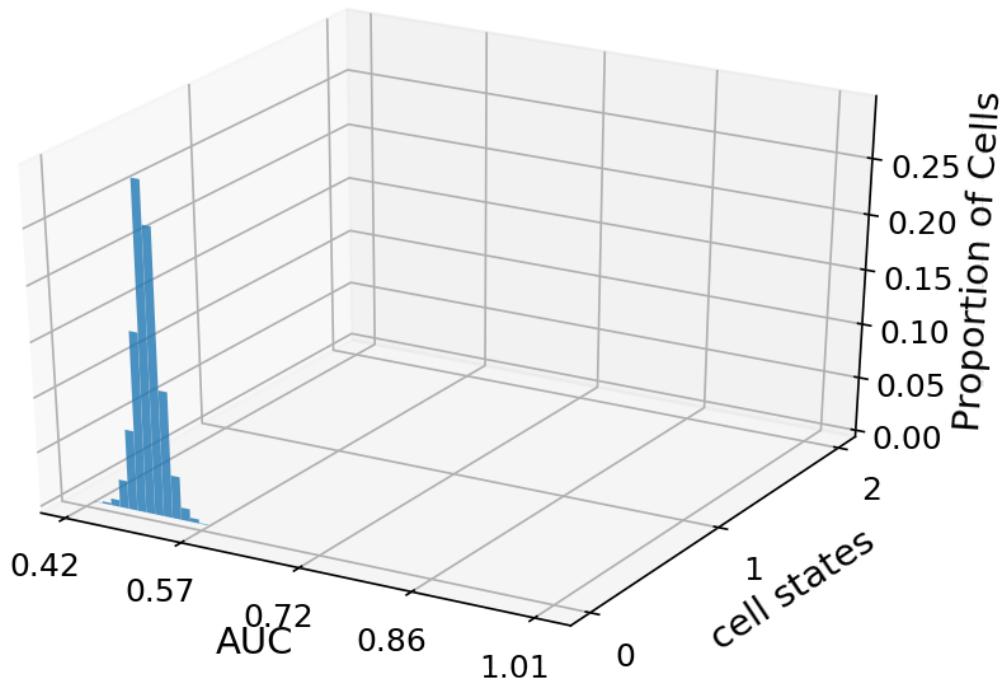
Foxq1



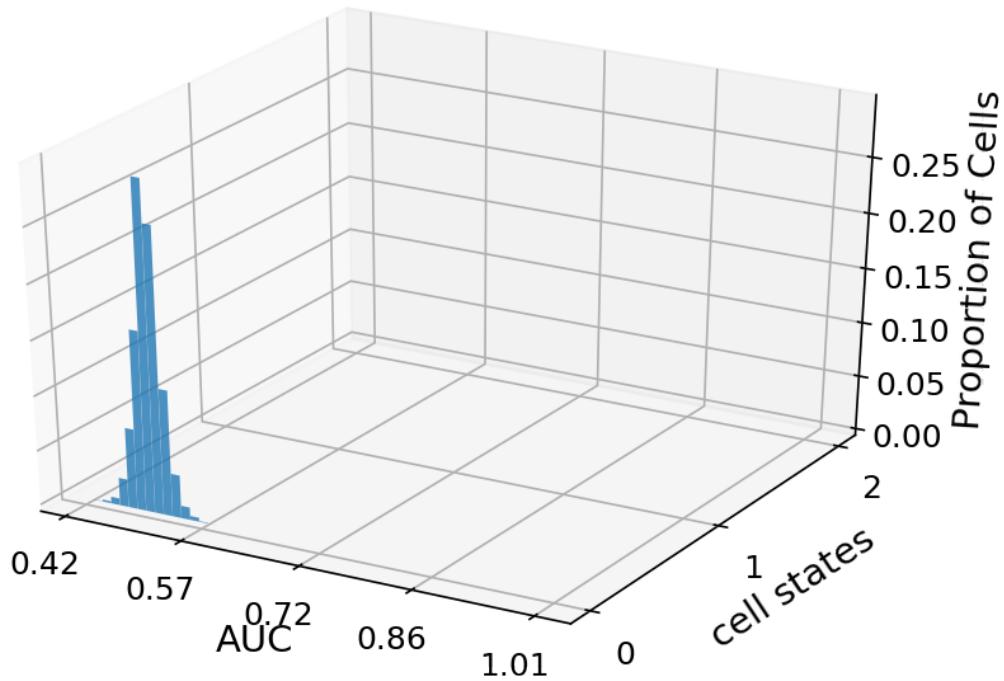
Ybx1



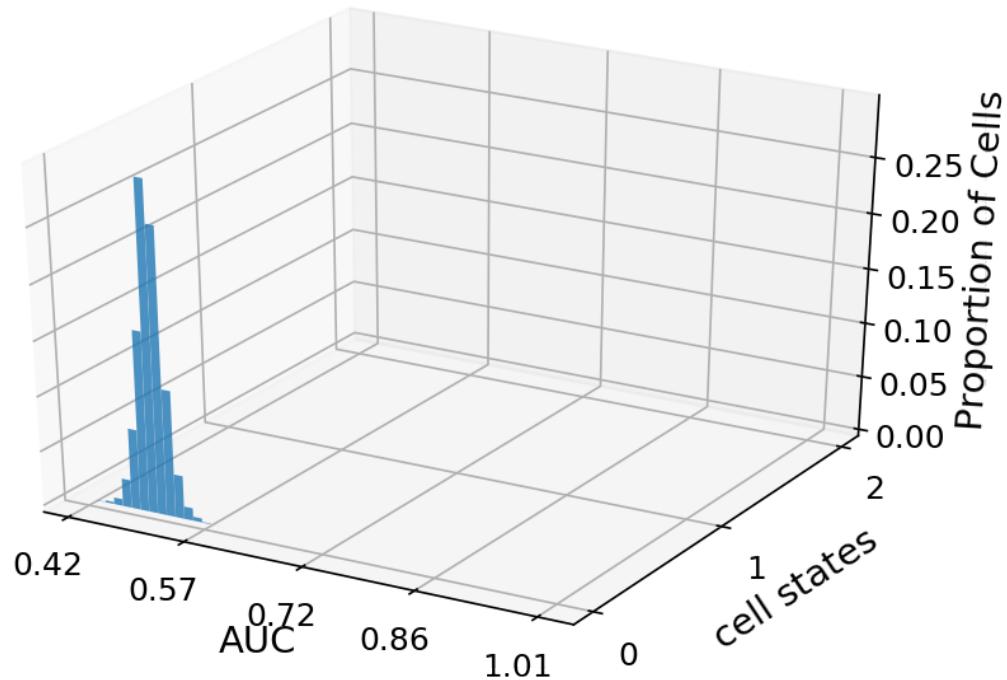
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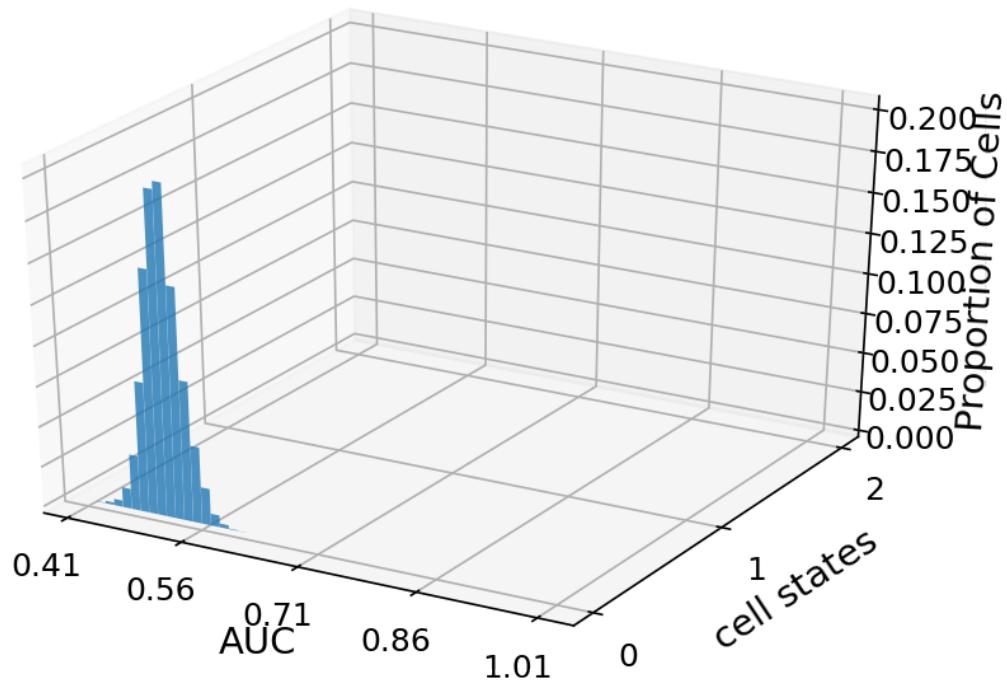
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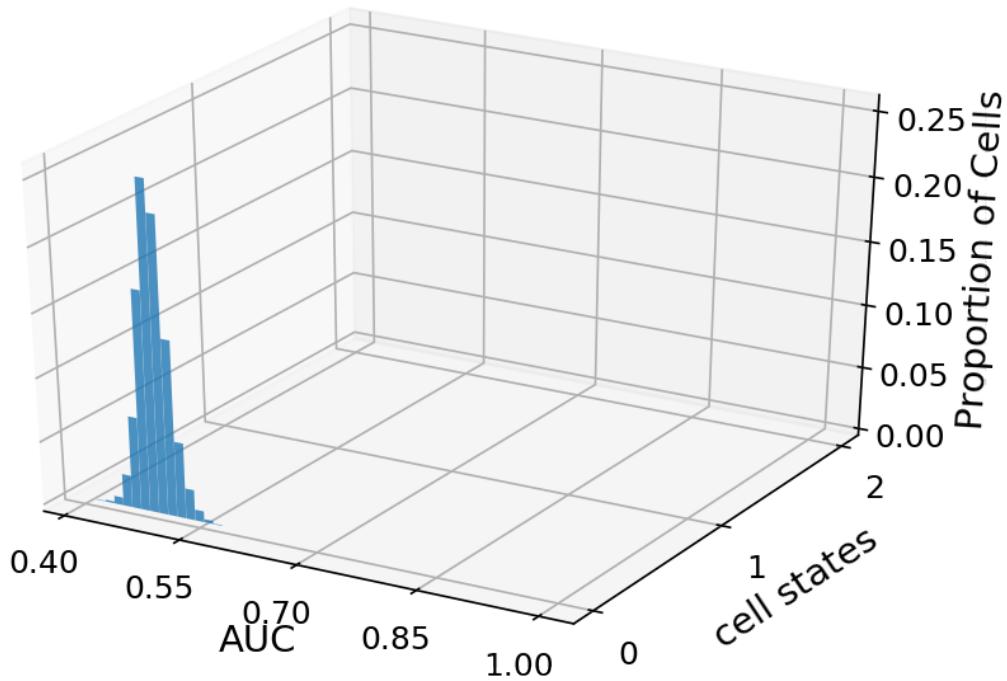
Hes6



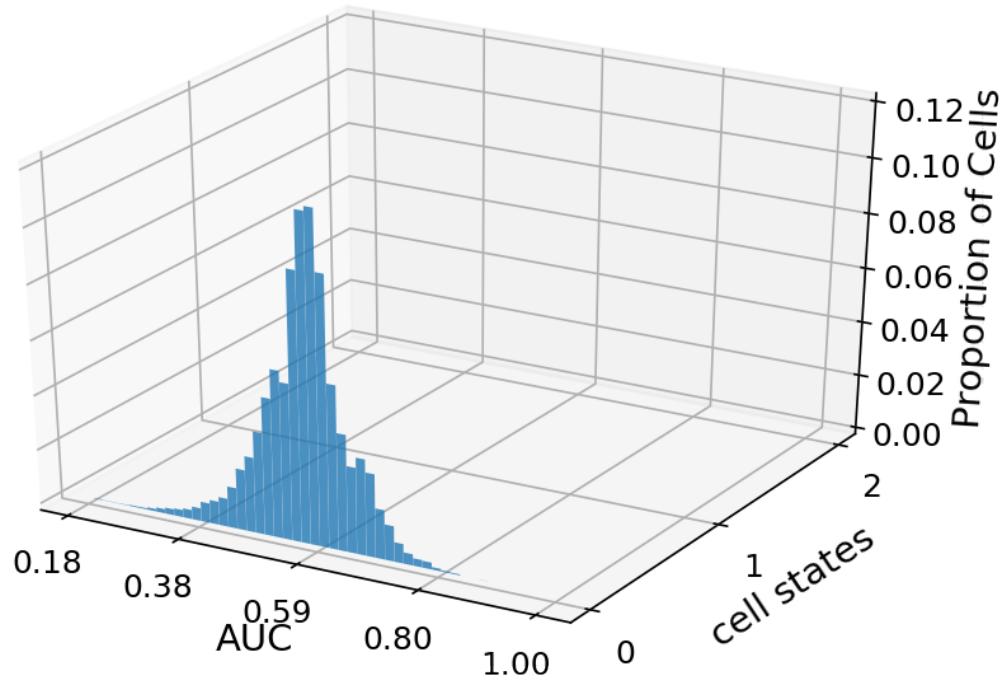
Cebpb



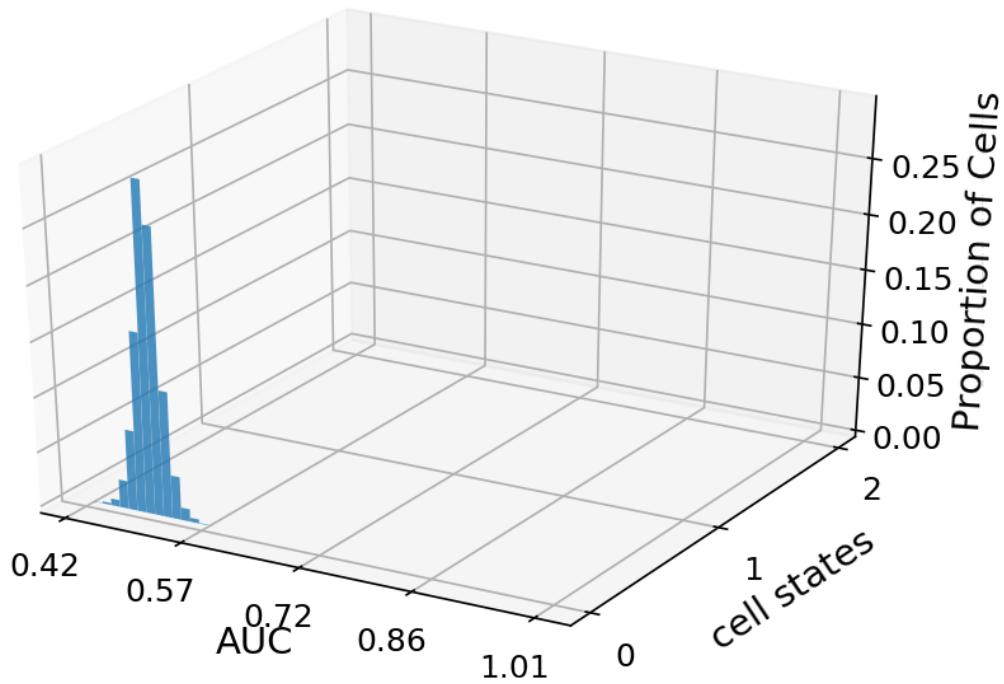
Jund



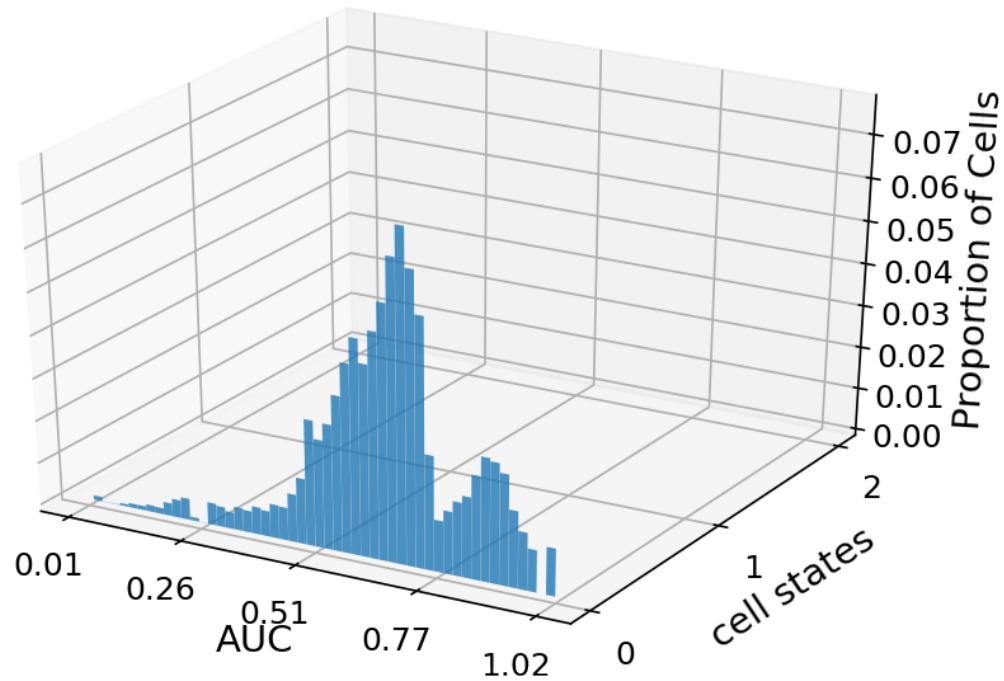
Hhex



Dbp



Cebpa



Id2

