

Contents

1	Setup	1
2	Results	1
3	Conclusion	1

1 Setup

This experiment tests the performance improvement of running function prediction on the DREAM networks after denoising the networks in various ways.

We look at class of denoising methods that all work by adding new edges to the network based off of some link predictor. In our case, the methods add the top 10% of edges from the link predictor to the network with a constant weight of 1.

There are 3 link prediction algorithms used:

- Pairwise distance predictor under normalized DSD
- GLIDE predictor under the L3 metric
- GLIDE predictor under the commone weighted metric

The parameters for the GLIDE predictor used in the experiment are as follows:

```
params = {"alpha" : 1, "beta" : 1000, "delta" : 0.001, "loc" : "l3"}  
params = {"alpha" : 1, "beta" : 1000, "delta" : 0.001, "loc" : "cw"}
```

Performance was evaluated using 5-fold CV with the GO label set from 2019 where all GO labels annotating less than 50 or greater than 1000 proteins are discarded (I use Lily's code to do this).

2 Results

The accuracy for each method is listed below:

	Normalized DSD	GLIDE CW	Glide L3	Network Enhancement	No Denoising
Dream 1	0.197	0.161	0.163	0.239	0.246
Dream 2	0.133	0.132	0.123	0.145	0.132
Dream 3	0.143	0.152	0.139	0.180	0.125
Dream 4	0.114	0.114	0.116	0.120	0.138
Dream 5	0.082	0.074	0.075	0.078	0.071
Dream 6	0.190	0.192	0.192	0.202	0.166
Average	0.143	0.137	0.135	0.161	0.146

3 Conclusion