PLATFORM INSTRUCTION

Patients RNA-seq and Clinic data Explorer

Data Collection

Data Collection | Data Processing | EDA | DEGA | LASSO FeastureSelect | Go Enrichment

Upload Gene Expression files

Browse… 7 files selected.   Upload

GSE114286.csv

Index	ID_REF	3.8-1.3	3.8-1.4	...	ZYX	ZZEF1	ZZZ3
0	NN1	0	0	...	1461	1161	140
1	NN5	0	0	...	2321	708	47
2	NN7	0	0	...	1005	617	34
3	NN8	0	0	...	6091	2165	54
4	NN10	0	0	...	1978	1274	163

GSE54456.csv

Index	ID_REF	A2ML1	A4GALT	...	ZNF90	ZNHIT2	ZP1
0	M3059	115.8440018	8.883999825	...	0.081	9.093000412	0.0
1	M3171	32.24000168	9.500999969	...	0.022	13.3760004	0.0
2	M3418	83.30000305	13.27200031	...	0.097999997	5.861999989	0.046999998
3	M3978	104.4179993	11.13799953	...	0.024	7.465000153	0.0
4	M4208	138.1970062	9.092000008	...	0.149000004	10.0170002	0.057

AGSE121212.csv

Index	ID_REF	5S_rRNA	7SK	...	snoU2-30	snoU2_19	snoZ5
0	AD_004_lesional	0	9	...	30	28	4
1	AD_004_non-lesional	3	6	...	37	19	3
2	AD_005_lesional	9	25	...	21	38	14
3	AD_005_non-lesional	12	25	...	18	32	14
4	AD_006_lesional	2	7	...	20	25	3

ADGSE157194.csv

Index	ID_REF	NIPAL3	ANKIB1	...	AL590434.1	AC009093.10	AF228730.6
0	Patient1AL	733	1182	...	0	0	0
1	Patient1AN	557	596	...	0	0	0
2	Patient2AN	962	792	...	1	0	0
3	Patient2AL	873	1050	...	1	0	0
4	Patient3AN	1129	1299	...	0	2	0

Upload Meta-data files

Browse… meta_general.csv   Upload   Next

Data Preview

metaFile

Index	ID_REF	LABEL
0	Patient1AL	AD_LESION
1	Patient1AN	AD_NONLESION
2	Patient2AN	AD_NONLESION
3	Patient2AL	AD_LESION
4	Patient3AN	AD_NONLESION

Navigator Tab:DataCollection

Upload RNA-seq Files, each file needs to include ID_REF

Demonstration skin datasets (RPKM):
GSE54456 psoriasis
GSE114286 psoriasis
GSE121212 psoriasis
GSE157194 atopic dermatitis(AD)
GSE186476 Cutaneous lupus erythematosus
GSE179633 DLE (discoid lupus erythematosus, a main type of CLE) ,SLE(systemic lupus erythematosus)
GSE 130955 Prospective Registry for Early Systemic Sclerosis (PRESS)

Upload meta-data Files, each file needs to include ID_REF and LABEL, may include some clinic data
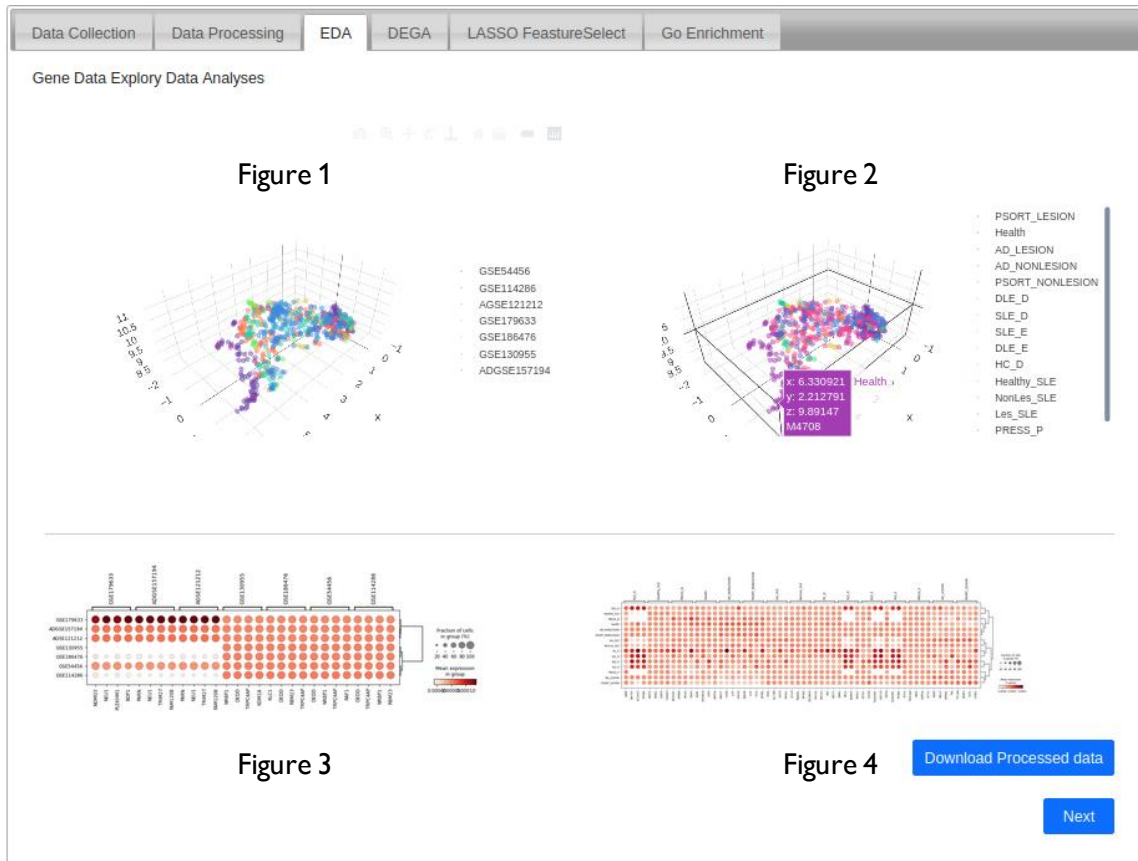
| Data Collection | Data Processing | EDA | DEGA | LASSO FeastureSelect | Go Enrichment |

Combined Options
- ◉ Combat
- ○ Harmony

Log2 Transformation
- ○ Yes
- ◉ No

Feature Reduction Method
- ○ TSNE
- ◉ UMAP

Next

Navigator Tab:DataProcessing

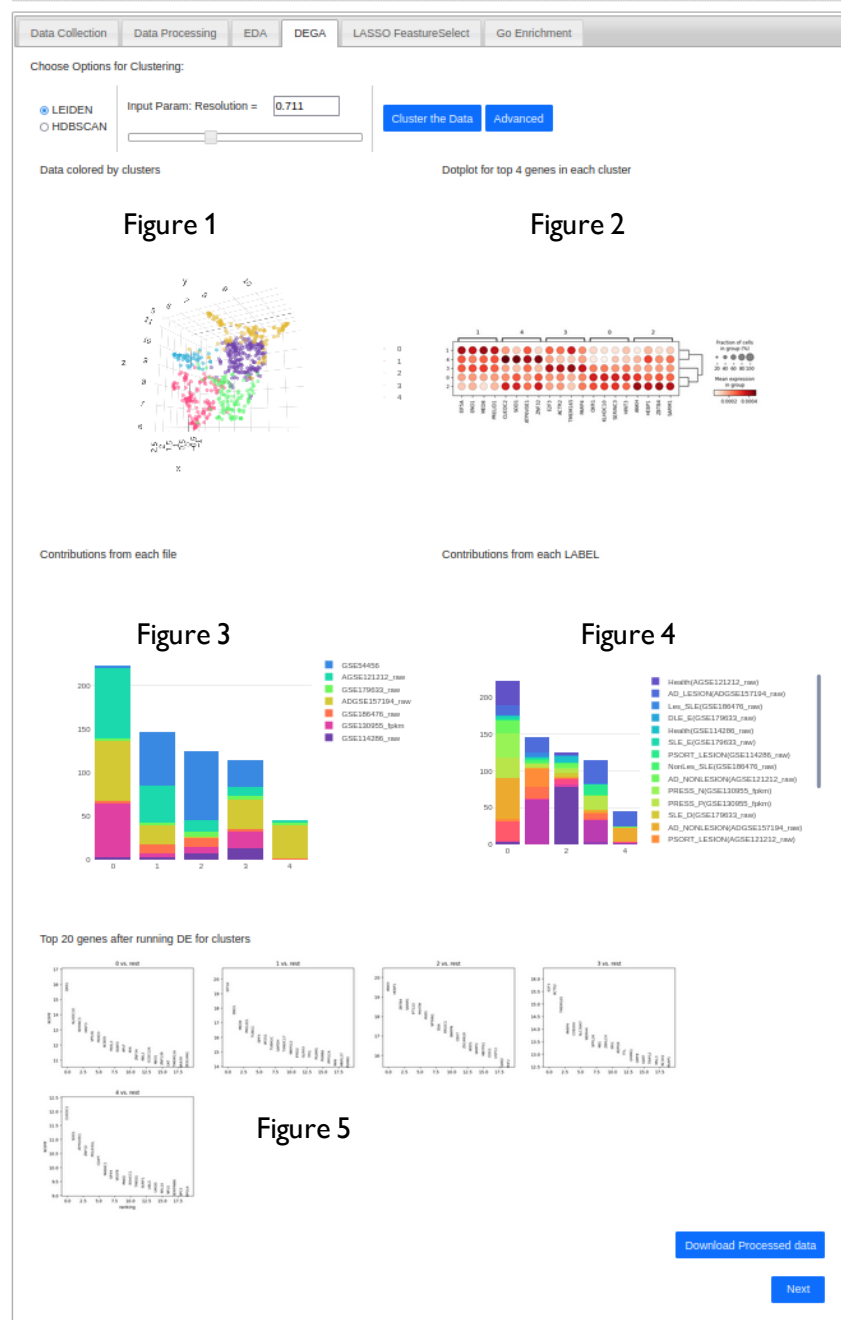Options for preprocessing the data

Navigator Tab: EDA

Figure 1: plotted data colored by FileNames
Figure 2: plotted data colored by LABEL in meta file
Figure 3: Dotplot for top 4 genes in each file
Figure 4: Dotplot for top 4 genes in each LABEL

Patients RNA-seq Explorer: a webserver for gene expression analysis and visualisation

Navigator Tab: DEDA
User can choose options for clustering with parameters:

Figure 1: plotted data colored by clusters
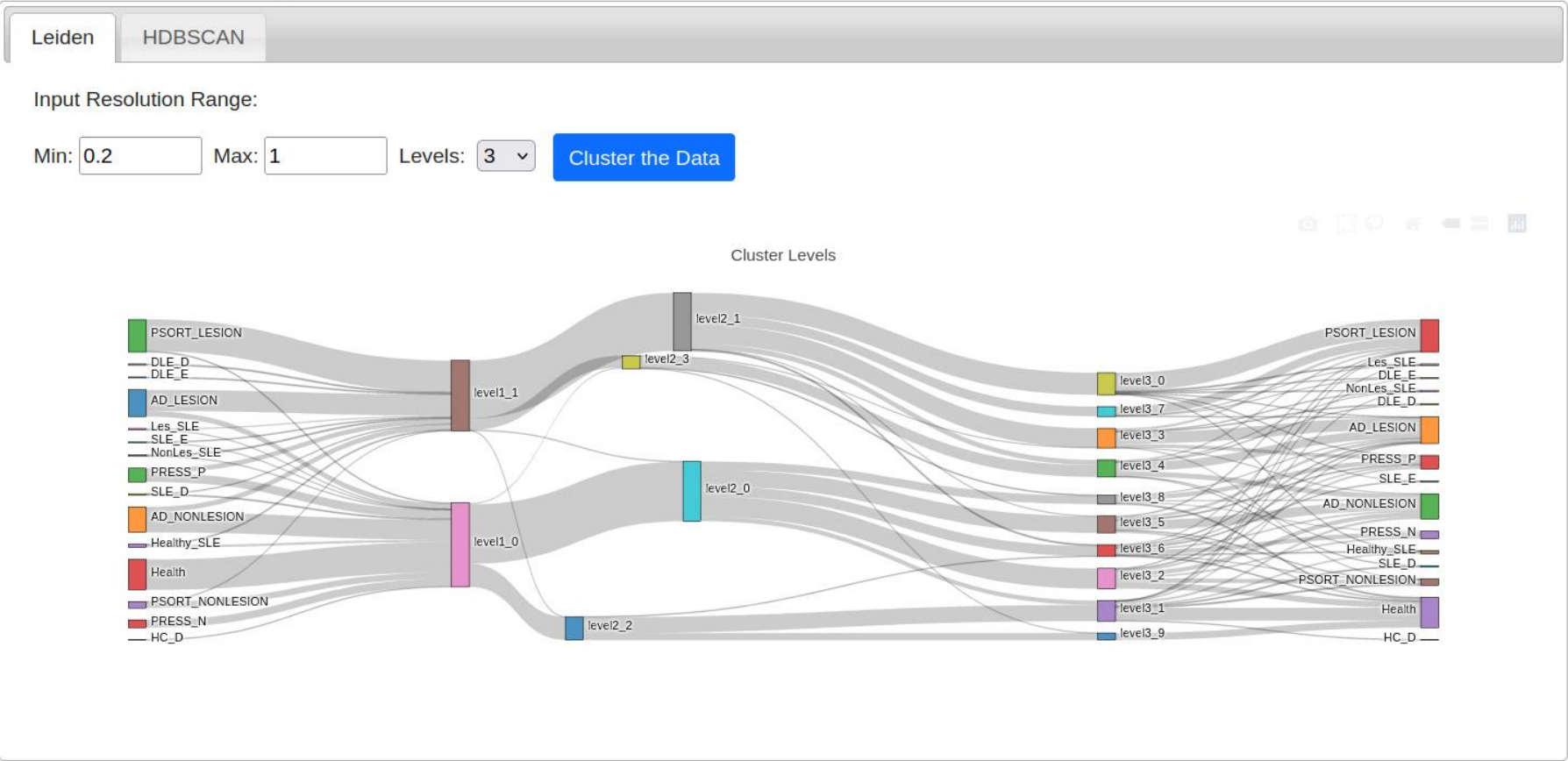Figure 2: Dotplot for top 4 genes in each cluster
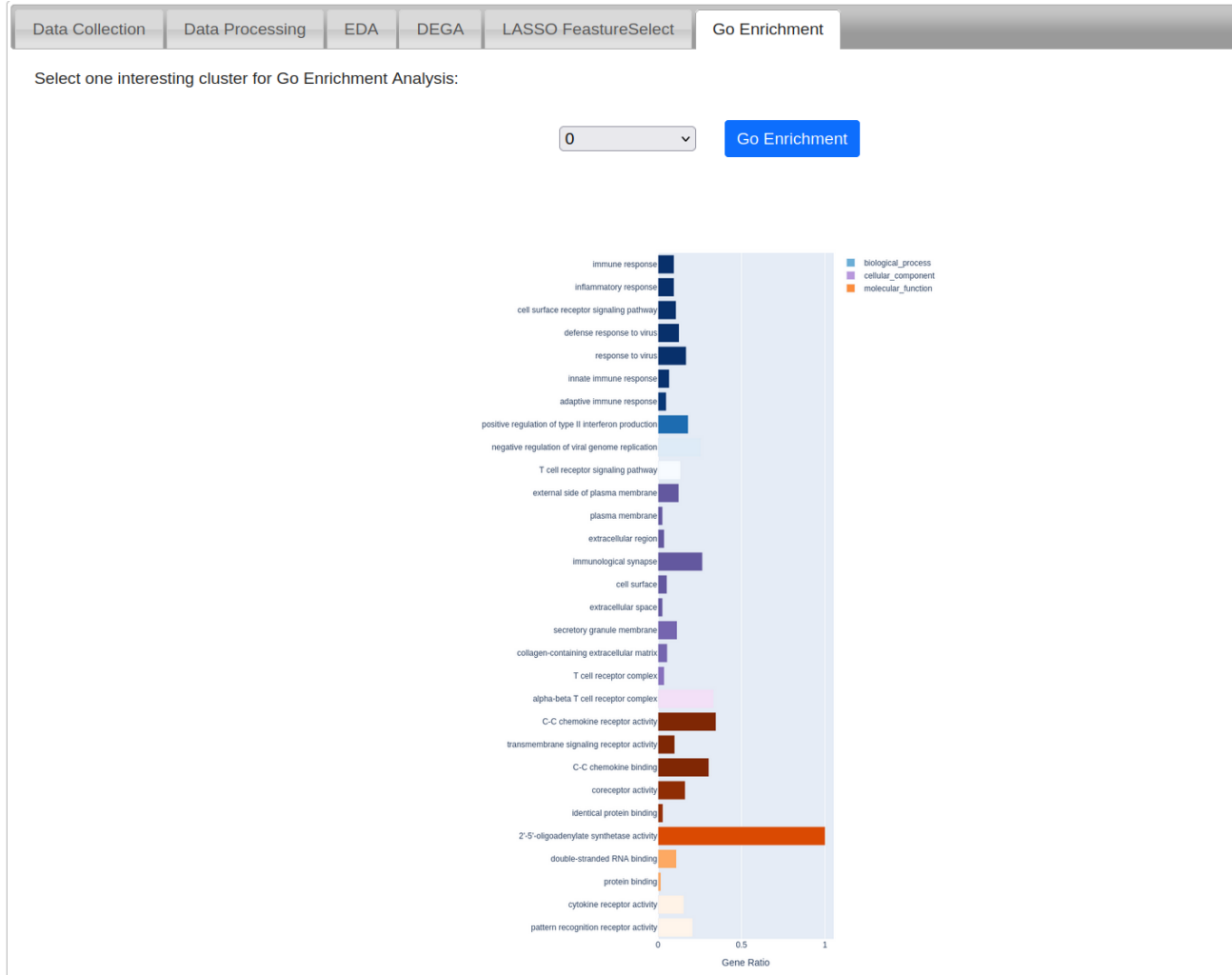Figure 3: contributions from each file
Figure 4: contributions from each LABEL
Figure 5: top 20 genes after running DE for clusters

Advanced Clustering

Navigator Tab: LASSO Feature Selection
User can specify a cluster for LASSO:

Select one interesting cluster for Go Enrichment Analysis:

[0 ▾]   **Go Enrichment**

Navigator Tab: Go Enrichment
User can specify a cluster for Go
Enrichment: