

1 **Github Readme File to:**
2 Searching for best lower dimensional
3 visualization angles for high dimensional
4 data

5 Wanli Zhang^{1¶} and Yanming Di^{1¶}

6 ¹Department of Statistics, Oregon State University,
7 Corvallis, Oregon, United States of America

8 ¶ These authors contributed equally to this work.

9 The folder **Code** contains the R code used by the authors to produce the results
10 presented in the article.

11 (1) **data generation.R**: Produces the relative expression levels from raw read
12 counts

13 (2) **figure_ code.R**: Generate all figures in the article

14 (3) **functions.R**: Contains all functions necessary for simulation and data analysis

15 (4) **PCA cross_ validation.R**: Generate results for PCA cross-validation

16 (5) **plot functions.R**: Contains functions necessary for generating graphs

17 (6) **run simulations.R**: Wrapper functions for generating simulation results

18 (7) **summarize simulation results.R**: Code for integrating simulation results into
19 single files

20 (8) **Permutation_ code.R**: Permutation test with the purpose of calculating em-
21 pirical p -values for feature subsets

22 (9) **sample_ size_ simulations.R**: Simulations designed to investigate variation
23 and biasedness of GSI produced by RCV when sample size is large

24 (10) **FisherLDA.R**: Calculate GSI with LDA as classifier

25 (11) **tspair.R**: Use Top Scoring Pair to find top ranked feature pair

26 Folder **Data** contains the raw read counts as well as expression levels for genes
27 involved in the study. See **data generation.R** for more details.

28

29 Folder **Graphs** contain all figures used in this article.

30

31 Folder **Output** contain the analysis output from the data generation process.

32

33 Folder **Results** contain repeated cross-validation results for 2-, 3-, and 4-dimensional
34 feature subsets.