

A Robust Method for Generating Discriminative Gene Clusters

Min Xu¹ and Louxin Zhang²

¹Institute of Molecular and Cell Biology, 30 Medical Drive, Singapore 117609. xumin@imcb.nus.edu.sg

²Department of Mathematics, National University of Singapore, 2 Science Drive 2, Singapore 117543.
matzlx@nus.edu.sg

Abstract

Motivation: Microarray technology is often used to identify the genes that are related to the tissue classes with the help of machine learning and statistical methods. Due to the small sample and high dimensionality nature of microarray data, it is not difficult to find small gene subsets which are highly discriminative. But these highly discriminative gene subsets may not be truly biologically relevant to the sample classes. Furthermore, the many existing identification process is very sensitive to the choice of training samples.

Results: We propose a novel approach for generating discriminative gene clusters. Our experiment on both simulation and real datasets show that our method can generate a series of robust gene clusters with good classification performance.

Availability: The program in MATLAB is available on request.

Contact: matzlx@nus.edu.sg