

1024-15-202

Barbara E. Ball* (barbaraeball@comcast.net), 672 Pawley Road, Mount Pleasant, SC 29464, and **Clare J. Rodgers**. *The Stewart Eigenvector: A New Method to Cluster Asymmetric Matrices*.

Clustering, or the partitioning of data into similar groups, is an important data mining technique in use today. It can play a valuable role in optimizing search engines, understanding terrorist networks, or revealing hidden information in any dataset where groups of similar objects may occur. Numerical linear algebra is the foundation for many such data mining methods. Currently, the Laplacian method, which uses the Fiedler eigenvector, is the most frequently used tool for the clustering of datasets. However, this method is limited in that the datasets must be in a symmetric format and transforming the original data usually requires corrupting it. In order to preserve the original data, we are researching an alternative approach using an eigenvector we have coined the Stewart vector. Thus far, all tests of this approach have shown the Stewart approach to be a valid method for the clustering of asymmetric as well as symmetric datasets. (Received January 08, 2007)