





A matrix visualization (MV), also known as a heatmap, is a tool that presents data matrices through colored maps. This visualization technique is particularly useful for investigating the grouping and clustering structure of large-scale, high-dimensional datasets without reducing their dimensions. As an exploratory data analysis (EDA) tool, it has been extensively used in various fields, including bioinformatics, social science, and computer science. In this study, we first review representative works on MV-related techniques and software development. Next, we describe the main procedures of MV within the framework of generalized association plots (GAPs), along with some recent advances. Specifically, we introduce and apply raw data from cellular probes. Additionally, we discuss MV generalizations in the context of visual data mining and highlight some innovative approaches for future research. (This study is based on a joint work with Chun-houh Chen from the Institute of Statistical Science at Academia Sinica.)

Key words: Exploratory Data Analysis, Generalized Association Plots, Heatmap, Symbolic Data Analysis.