1116-00-2898 **Ahlam E Tannouri***, Mathematics Department, Morgan State University, 1700 E. Cold Spring, Baltimore, MD 21251, and **Sam Tannouri** (sam.tannouri@morgan.edu). *Big Data Visualization Tools and Algorithms to Build Predictive Models.* Preliminary report.

Prediction models, Recommendation Systems and Advertisements based on big data collection play major roles in all fields impacting our daily life. In order to harness the power of the complex big data coming from sensors used to gather climate information, posts to social media sites, online digital pictures and videos, transaction records of online purchases, tracking the spread of viruses, and cell phone GPS signals, new algorithm are being developed as well as new visualization techniques are being created. In a case study, we will use several mathematical methods, K-means Clustering, dimensionality Reduction, Singular Value Decomposition (SVD) and Principal Component Analysis (PCA) to reduce the complexity of the data, visualize the result in order to discover relevant objects and attributes; and then build predictive models and recommendation systems that satisfy the objective of the study and increase the value of the institution.

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