

CSE 564 – DATA VISUALIZATION

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Mini Project #2(A)

Dataset: Same Dataset used for Lab 1 implementation is used for this assignment.

Observations and Noteworthy Implementations:

In the implementation, robust error-handling mechanisms have been included to manage potential errors during data processing and user interactions. Specifically, error checks have been implemented to validate user inputs, such as ensuring that the number of principal components for PCA is within acceptable limits and verifying that the range of k values for k -means clustering is appropriate. Error messages are provided to offer guidance to users in case of invalid inputs, enhancing the usability and reliability of the system. Users can observe changes in visualizations, such as PCA scree plot and k -means MSE plot, instantaneously as they adjust parameters or make selections. This immediate feedback loop fosters exploration and hypothesis testing, enabling users to iteratively refine their understanding of the data and refine analysis strategies accordingly.

The implementation integrates user interaction features, allowing users to adjust the intrinsic dimensionality and the number of clusters (k) for k -means clustering through interactive elements. This capability enables users to explore various aspects of the dataset, observing how adjustments affect visualizations and clustering outcomes. This approach enhances the user experience and facilitates a deeper understanding of the data structures.