

Customer Segmentation Dashboard

✓ Data loaded successfully!

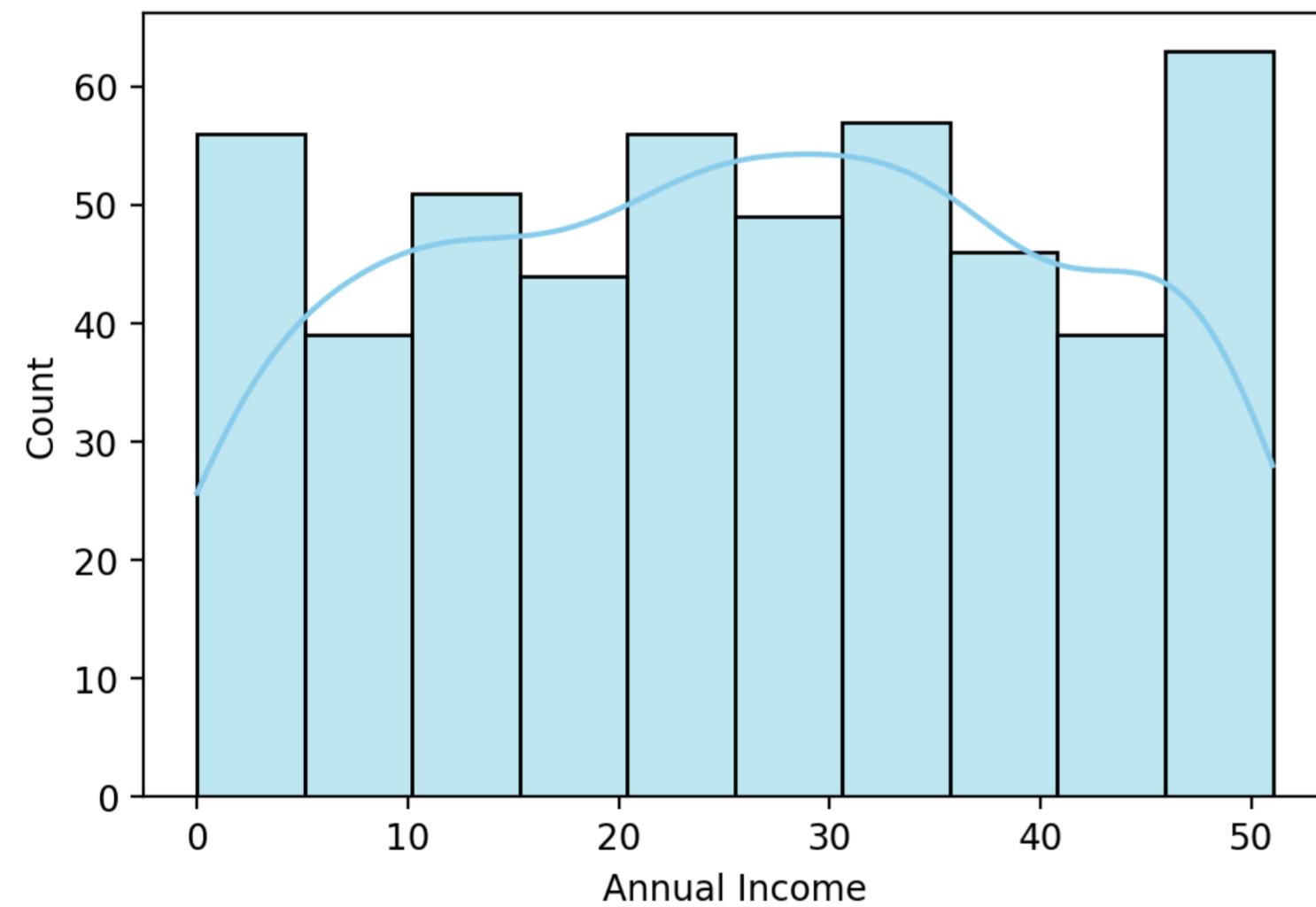
Dataset Preview

	CustomerID	Gender	Age	Annual Income	Spending Score	Profession	City	Membership Type	Tenure (Years)	Cluster
0	1	1	38	20	7	5	0	2	1	3
1	2	0	49	31	14	1	5	2	9	2
2	3	1	40	22	79	0	2	0	7	2
3	4	1	50	32	7	1	1	0	8	2
4	5	1	20	2	9	7	6	2	9	0

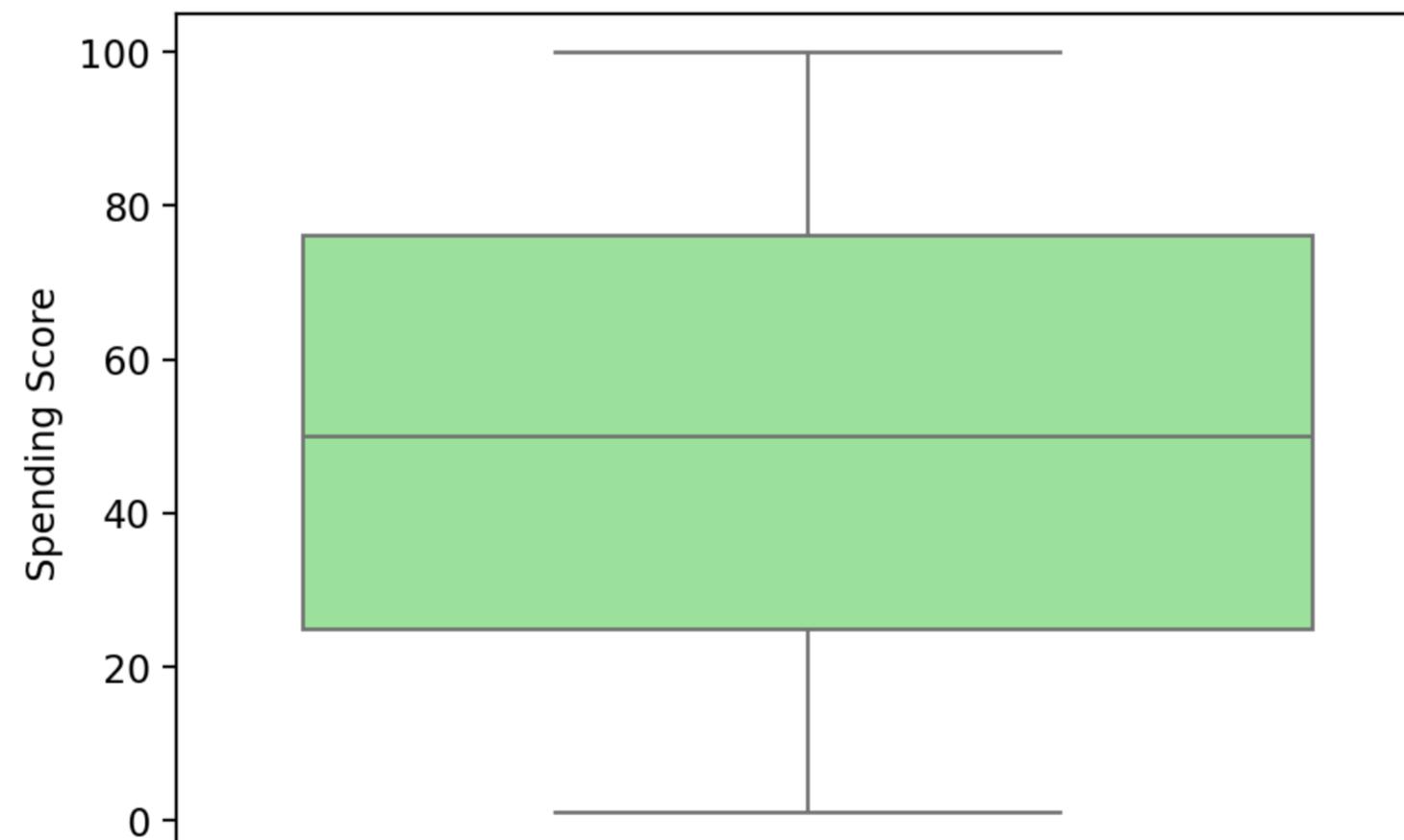
✓ Data cleaning completed!

Exploratory Data Analysis (EDA)

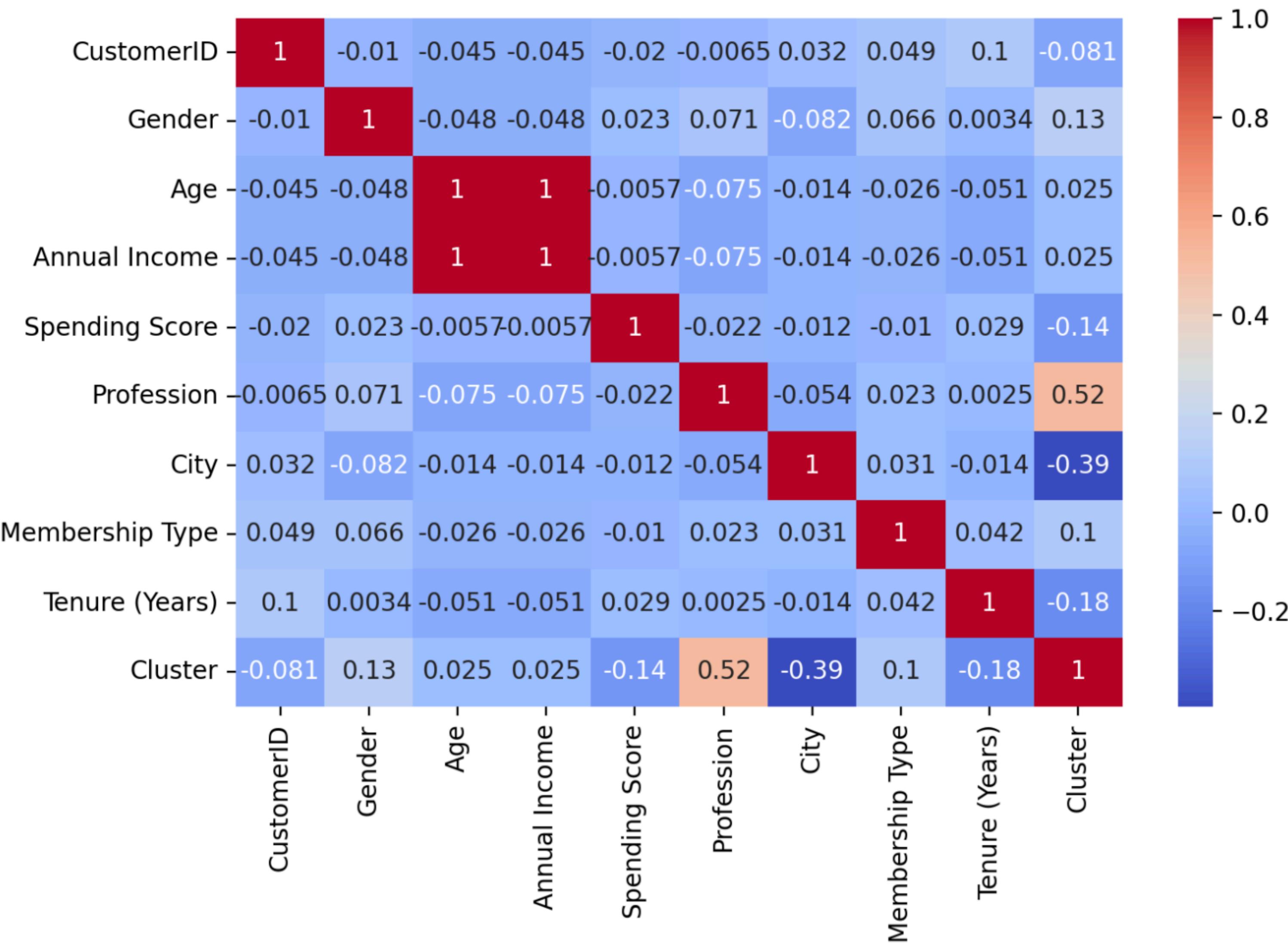
Distribution of Annual Income



Spending Score Distribution



Correlation Heatmap



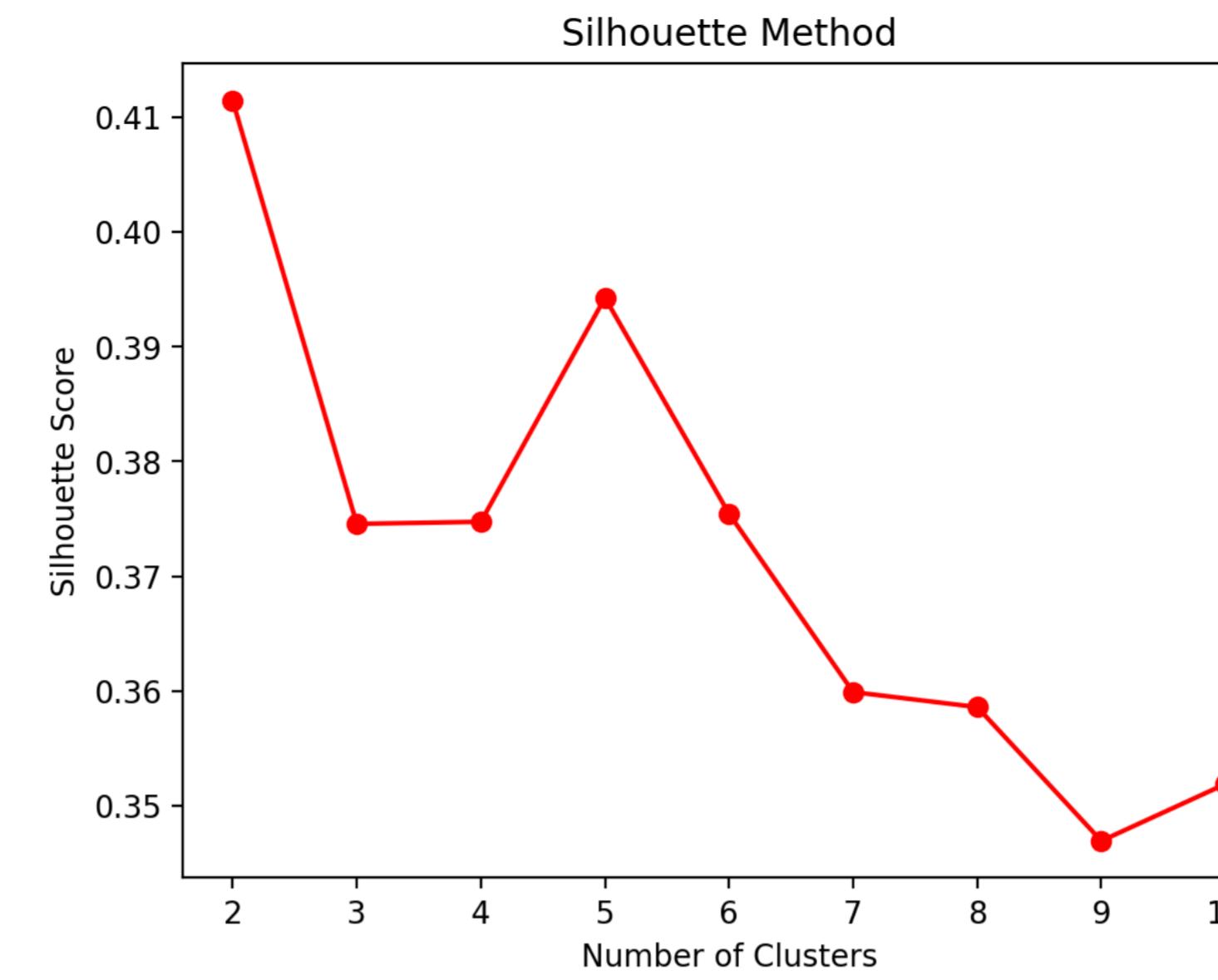
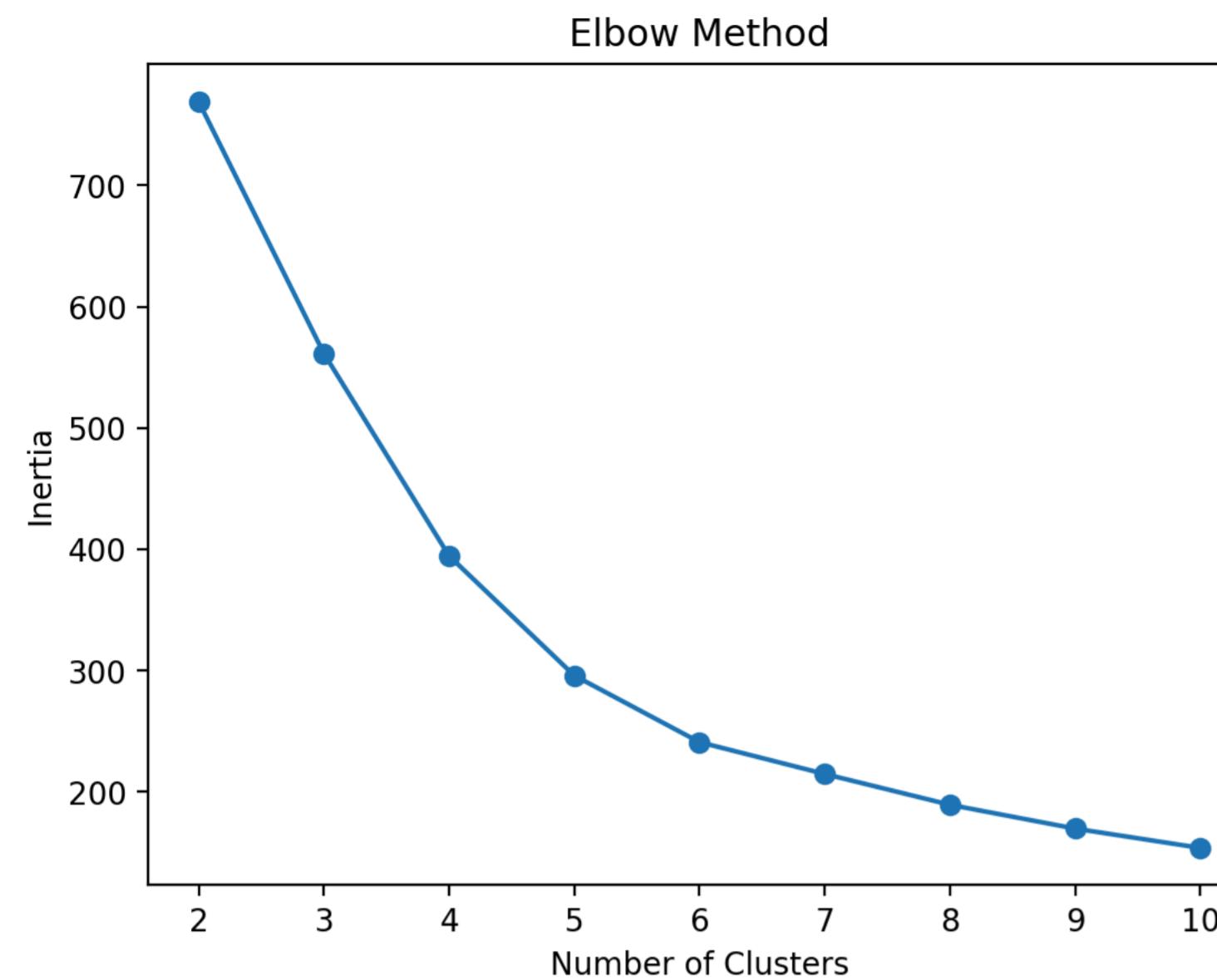
⚙️ Feature Scaling & Model Preparation

✓ Features scaled successfully!

📊 Determine Optimal Number of Clusters

Elbow Method

Silhouette Score



Select Optimal Number of Clusters (K)

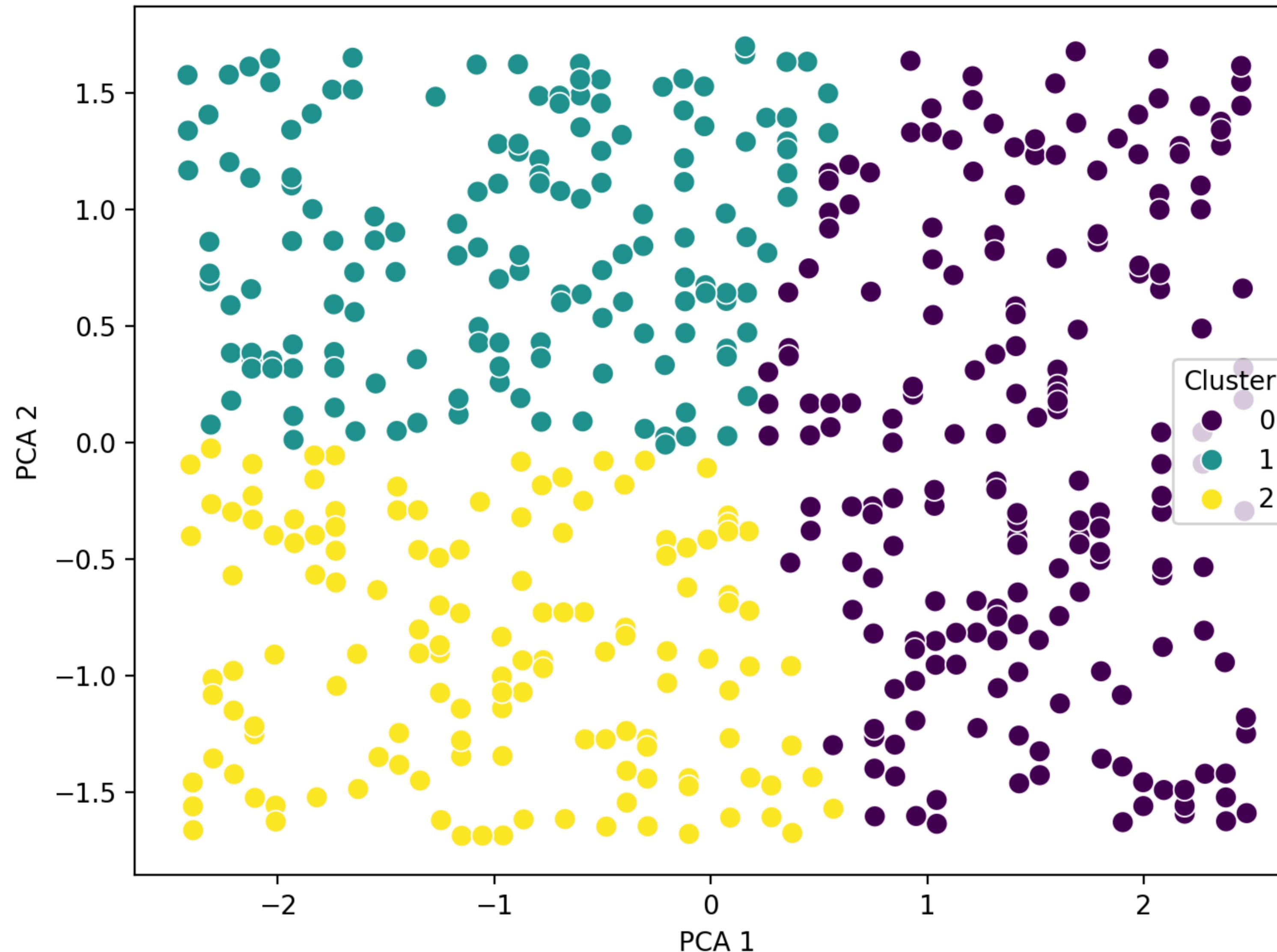
 K-Means applied with K = 3

Cluster Counts



PCA Visualization of Clusters

Customer Segments (PCA Visualization)



📋 Cluster Profiling

Cluster	Age	Annual Income	Spending Score
0	28.59	10.59	51.96
1	53.62	35.62	25.58
2	54.47	36.47	77.03

- ● Cluster 0: High income, high spending customers

- ● Cluster 1: Moderate income and spending
 - ● Cluster 2: Low income, low spending customers
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Developed with ❤️ using Streamlit, Scikit-learn, and Pandas.