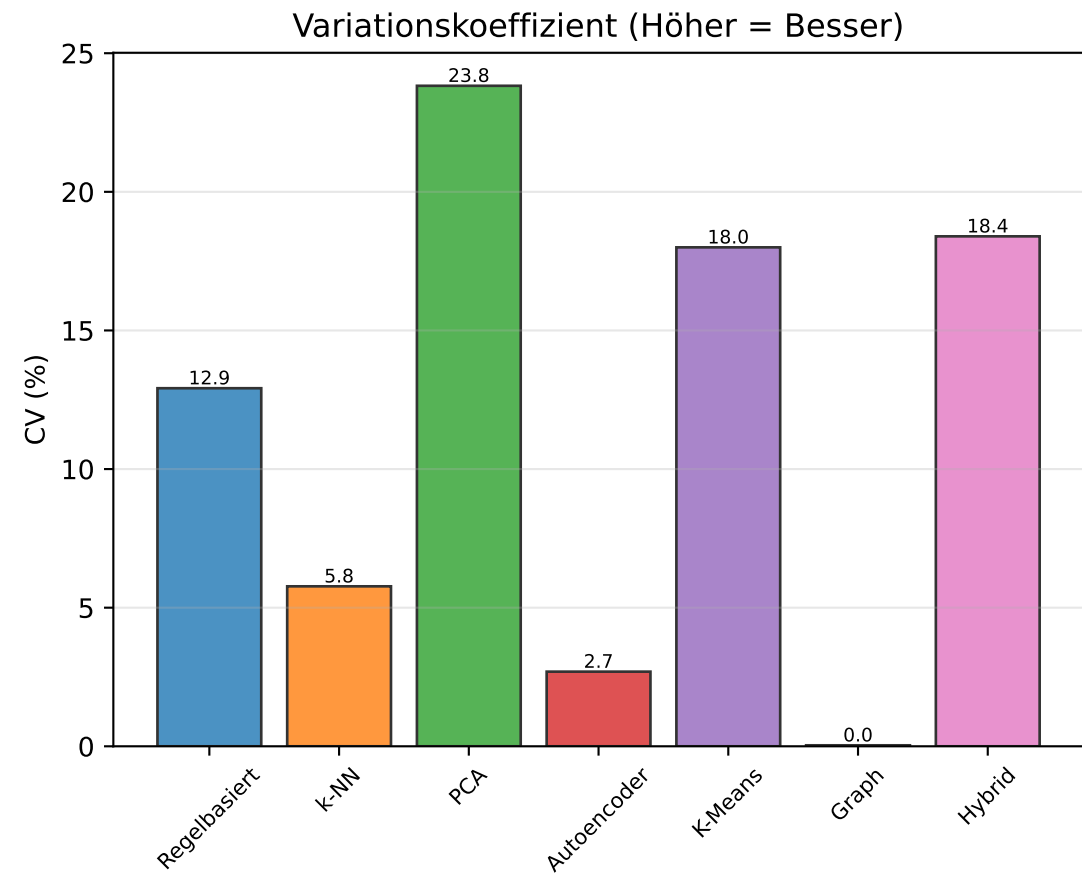
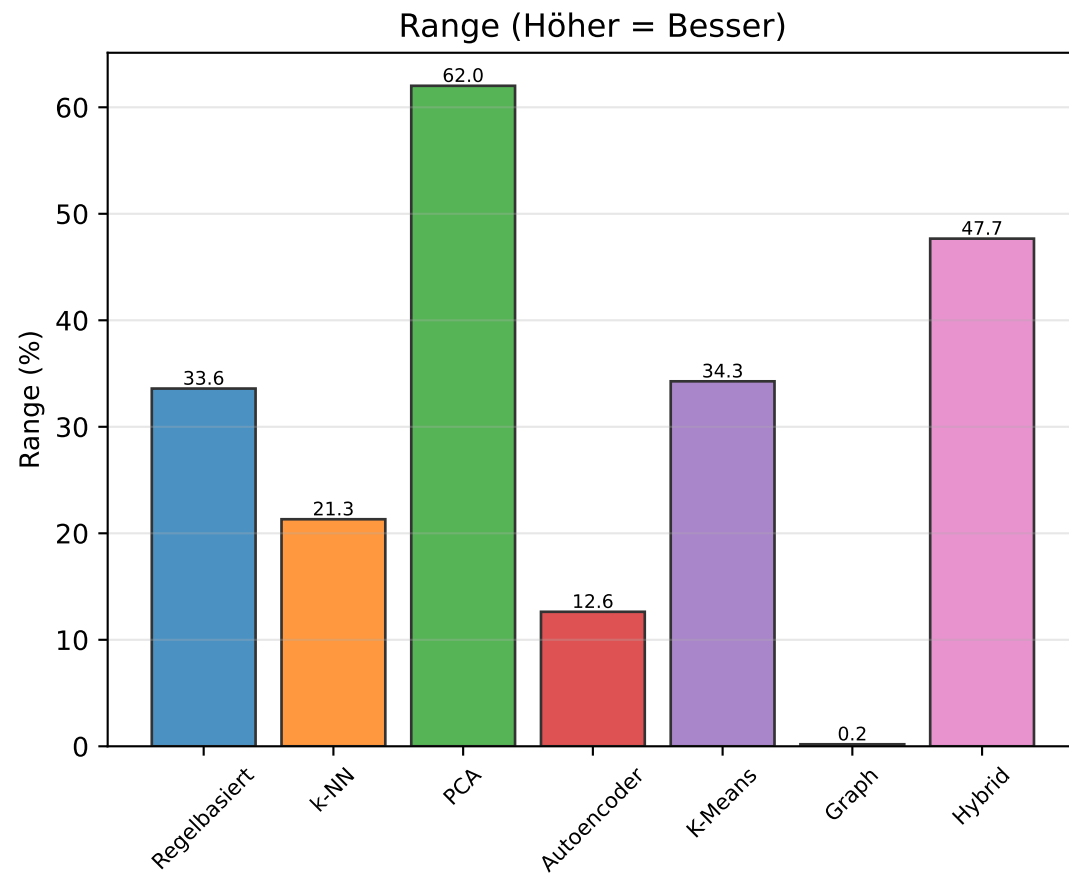
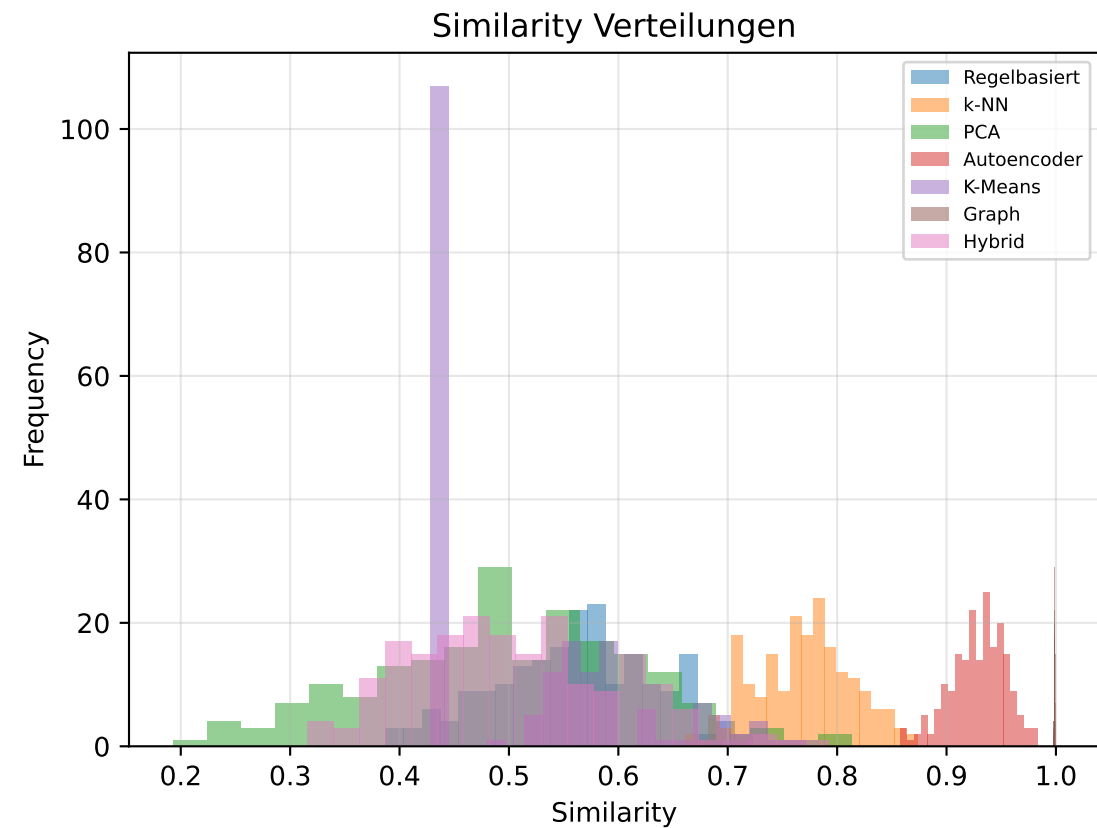
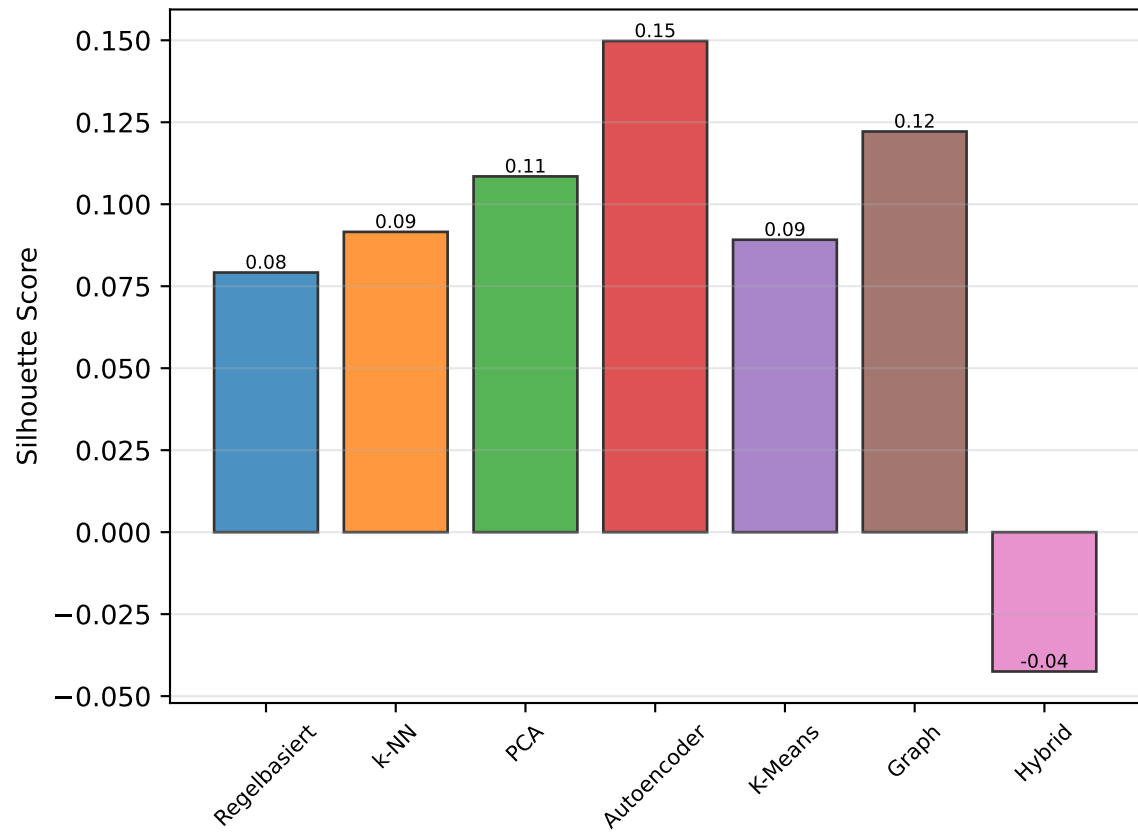


Methoden-Validierung (Live-Berechnung aus Streamlit UI)

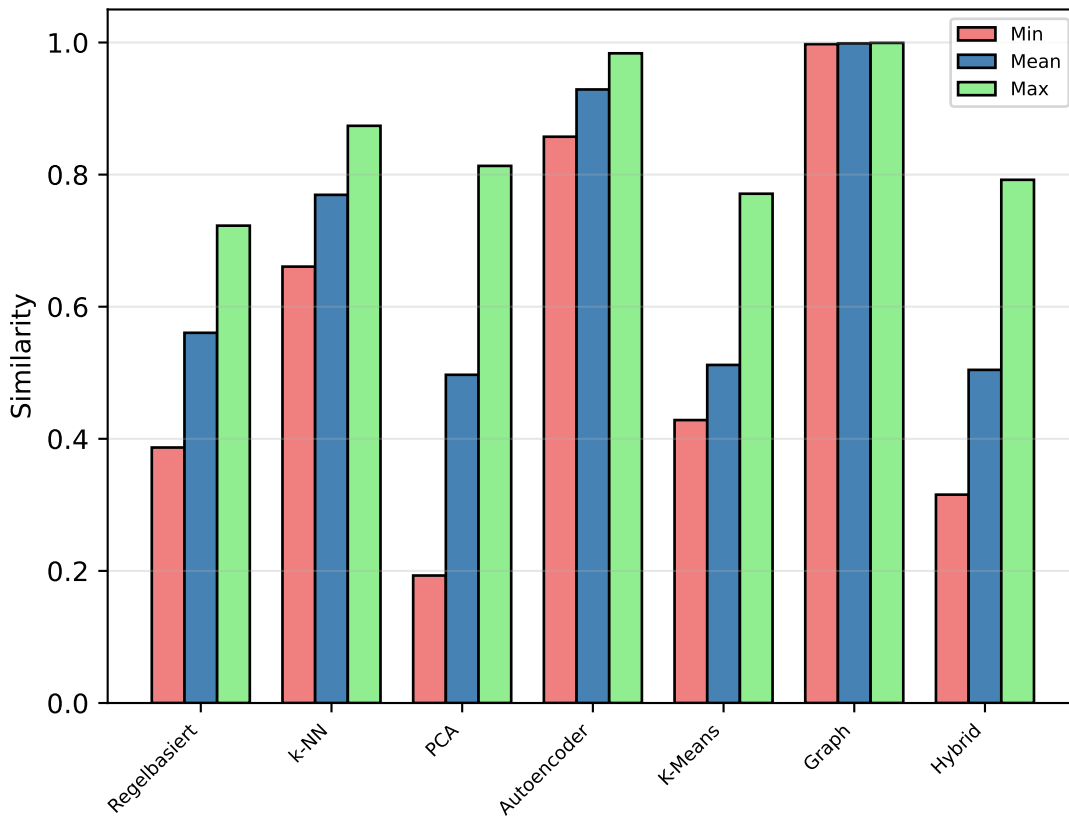


Zusammenfassung

Cluster-Qualität (Höher = Besser)



Min / Mean / Max



Methode	Range	CV	Silhouette
Regelbasiert	33.6%	12.9%	0.08
k-NN	21.3%	5.8%	0.09
PCA	62.0%	23.8%	0.11
Autoencoder	12.6%	2.7%	0.15
K-Means	34.3%	18.0%	0.09
Graph	0.2%	0.0%	0.12
Hybrid	47.7%	18.4%	-0.04