

Clustering	Compare Algorithms				
	Model	K-Means	Agglomerative Clustering	DBSCAN	Spectral Clustering
	Type	Partition-based	Hierarchical	Density-based	Graph-based / spectral
	Architecture	Minimizes within-cluster sum of squares	Recursively merges pair of clusters using linkage distance	Groups points by density connectivity	Find eigenvalues of the similarity matrix to perform dimensionality reduction
	Speed	Fast	Relatively slow	Relatively fast	Slow
	Best For	Spherical clusters	Exploring cluster hierarchy; dendrogram visualization; unknown number of clusters	Datasets with clusters of varying shapes; detecting outliers	Non-convex clusters; manifold-structured data
	Limitations	Assumes number of clusters k is known; poor with non-spherical clusters or varying densities	Not scalable to large datasets; sensitive to noise	Struggles with varying densities; sensitive to parameters; not ideal for very high-dimensional data	Poor scalability; sensitive to similarity metric; memory-intensive for large datasets
	Corresponding Package	scikit-learn			
	TL;DR				
play with Compare_Clustering.ipynb to see which one suits your dataset					