

Extensions to Hierarchical Clustering

- Major weaknesses of hierarchical clustering methods
 - Can never undo what was done previously
 - Do not scale well
 - \square Time complexity of at least $O(n^2)$, where n is the number of total objects
- Other hierarchical clustering algorithms
 - □ BIRCH (1996): Use CF-tree and incrementally adjust the quality of sub-clusters
 - □ CURE (1998): Represent a cluster using a set of well-scattered representative points
 - CHAMELEON (1999): Use graph partitioning methods on the K-nearest neighbor graph of the data