# Clustering under different approaches: models and algorithms

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**Abstract:**

Clustering is essential in the field of artificial intelligence. Like dimensionality reduction, clustering has seen growing interest in various fields including bioinformatics, image processing, recommender systems, text-mining and natural language processing. Since the k-means algorithm, a multitude of clustering algorithms have emerged.

These algorithms have often been motivated by many applications generating increasingly massive, high-dimensional, multi-source data, sparse or not. These algorithms, with their strengths and weaknesses, are generally derived from different clustering approaches including deep learning.

On the other hand, and contrary to supervised learning, the evaluation of the results of such algorithms is not always easy for the user.

In order to take stock of these approaches, we review the most popular and identify their potential for obtaining relevant classes.