

# Clustering

1. Download Animals with Attributes (AwA2) dataset from <https://cvml.ist.ac.at/AwA2/>. This dataset consists of 37322 images of 50 animal classes with pre-extracted deep learning features for each image. Sample 100 images for each class, leading to in total 5000 images.
2. Use K-means, Gaussian Mixture Model (GMM), and Self-Organizing Map (SOM) to cluster 5000 images. The number of clusters is set as 50. Compare different methods, different initializations, different hyper-parameter values, and the results in different iterations. Use the evaluation metrics for clustering to evaluate the results.
3. Summarize your experimental results and write a project report in English. The project report should contain the experimental results you obtained, and the experimental observations based on your experimental results.