<u>Semester Project One Page Plan</u>

Selected Project Topic: Constrained Clustering of Images with textual (or visual) explanations

Selected Programming language: Python 3+

1. We will learn about how the feature extraction takes place for image data set. We will research and understand about the feature extraction methods which were mentioned in the project tasks: MPEG-7 Colour Layout Descriptor6, Visual Bag-of-Words7, Speeded up robust features (SURF).

2. We will decide on the hyperparameters for the said feature extraction methods and find at least a fourth one as mentioned in the task sheet.

3. Explorative data analysis is required to understand the data set once the features dimensions have been reduced.

4. We would also discuss about the feasibility of applying an additional feature selection stage to select features which are of the most importance.

5. We will research about the ways constraints can be generated from the data set.

6. We will deep dive into the various constrained clustering methods and select the most appropriate method.