**Computer Vision**

**Übung - Teil 1**

**Gruppe 1**

**Aufgabe 1 - Colorizing Images**

**Detaillierte Vorgehensweise**

//TODO – Oana

**Issues to be addressed in the report:**

• Show at least 3 colorizations with and without alignment.

• For the bonus task, show at least 3 high resolution colorizations.

• For the bonus task, compare the actual runtime of the original implementation with that of the improved one.

//TODO - Oana

**Aufgabe 2 - Image Segmentation by K-means Clustering**

**Detaillierte Vorgehensweise**

//TODO - Andreas

**Issues to be addressed in the report**:

• Show the results for all images in the case of 3D data points as well as 5D data points (using a fixed value of K). Discuss the results. Which data representation is better in your opinion?

• Apply different values of K to the image mm.jpg and show the results for both 3D and

5D data points. Interpret the results.

• Where do you see - based on your results - the strengths and the weaknesses of the method?

//TODO - Andreas

**Aufgabe 3 - Scale-Invariant Blob Detection**

**Detaillierte Vorgehensweise**

//TODO – Dome

(detailliert! xD)

**Issues to be addressed in the report:**

• Apply the method to both the original images as well as to half-sized versions of them. Draw the detected blobs as circles with appropriate scale. Is the method able to find blobs in a scale-invariant way? If there are errors, what are the reasons for them?

• Pick a detected keypoint and plot the response of the LoG for all scales in both image versions. The outcome should be a 2D plot where the x-axis represents the scale of the filter and the y-axis the filter response at the selected keypoint position. Describe and explain the difference between the two curves.

//TODO - Dome