

EXERCISES FOR IMAGE PROCESSING I

PROBLEM SHEET 1

Due date: 23.10.14 before 12:00h

Topics: Getting started and basic image processing

Submission: Please send your solutions via email to seppke@informatik.uni-hamburg.de. Successful completion of exercises is a prerequisite for admission to an oral examination.

Note: Exercises for Image Processing I requiring programming are carried out with Python. As an Introduction you can download the Python presentation from the Lecture's Homepage:

<http://kogs-www.informatik.uni-hamburg.de/~seppke/?page=ip1-1415>

1 GETTING ACQUAINTED WITH THE PROGRAMMING ENVIRONMENT

- a) Create the required programming environment by installing all necessary SW or by using pre-installed computers in the iMac pool rooms.
- b) Start your terminal and enter „ipython2.6“ in order to start iPython (possibly preceded by the path). Try out some examples of the Python introduction.

2 IMAGE TRANSFORMATION

10 P.

- a) Write a function `mirror(image)` which takes an image as input and delivers the horizontal mirror image as output. The original image must not be changed.
- b) Extend the program written for a) to generate either a horizontal or a vertical mirror image or a mirror image for both axes using input parameters `horizontal=True`, `vertical=False` etc. Again, the original image must not be changed by the transformations.