

## **Exercises for Image Processing 1 - WiSe 2012/13**

### **Exercise Sheet 1**

This semester, the exercises will be done in Python. The introductory presentation for Python, as well as the other course materials can be found under the following link:

<http://kogs-www.informatik.uni-hamburg.de/~stelldin/BV1/>.

#### **1.1 Getting to deal with the programming environment**

Build your own working environment by installing the necessary software, or use the already installed software at the computers in the FBI-RZ (iMac-Pools).

Start a Terminal and type "ipython" in order to start iPython.

(If the environment variable is not set, you can start Python by typing "/opt/local/bin/ipython".)

Try some examples off the introductory Python presentation!

#### **1.2 Image Transformation**

a) Write a function „mirror(image)“, which generates and returns a horizontally mirrored version of a given image. The original image should not be changed!

b) Extend the function in a), such that the signature is "mirror(image, horizontal=True, vertical=False)". This function should be able to mirror an image horizontally, vertically or both. As in part a), the original image has to stay the same!

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The solutions will be discussed in the Exercise-part of the next lecture. Please send your solutions (source code and example images) before next Monday via e-mail to [peer@steldinger.net](mailto:peer@steldinger.net). A successful participation in the exercises is mandatory for admission to the oral exam.