note 1

Programming environment and 2D image processing

Welcome to the course Large Scale Drone Perception (LSDP). This course focuses on acquisition of data using a camera (usually mounted on a UAV) and how to analyze the recordings afterwards.

The lecture note, which you are reading now, contains information about what we expect you to have done of preparations *prior* to lectures. In addition the lecture note contains the plan for the lecture as well as a list of learning goals of the lecture. You can use the learning goals to assess whether you have learned what is expected from the lecture / reading / working on exercises or if further study is needed.

The course is structured in three modules. At the end of each of the three modules, you will work on a mini-project related to the content of the current module.

The lesson this week will focus on establishing a suitable programming environment based on python and opencv for this class. With the programming environment in place we will look at how use opencv to deal with images including how to segment images based on colors.

We are looking forward to be teaching this course.

Elzbieta and Henrik

Friday the 6th of February, 8:15 – 11:45 in U30A

Preparation

- Read chapter one in the lecture notes `exercisesheets-lsdp.pdf`

Activities in the class

- Presentation about the course content, color based segmentation and the python programming environment
- Work with exercises from the lecture notes

Weekly goals

- Can explain how a camera forms an image and the origin of certain image artifacts
- Can set up a virtual environment in python and install packages in the environment
- Can do basic analysis of images in python using the OpenCV bindings
- Can describe the RGB color spaces
- Can describe the HSV color spaces
- Can describe the CieLAB color spaces
- Can segment an image based on color information