Exercise Sheet Computer Vision 3

Submission: 19.05 10:00 am   (20 Points)

Exercise 1   Practice   (12 Points)

a)   • Download from `http://www.cvlibs.net/datasets/kitti/raw_data.php` the smallest dataset $2011\_09\_26\_drive\_0048$, [synced+rectified data].

   • What data are you provided with? What are the data used to localization and mapping? Which one instead are used to verify the goodness of your approach? (4 points)

   • Install the java version of openCV

   • Implement a method that reads the images in sequence and give them back in a sort of video. Images collected at the same time showed at the same time. (6 points)

   • Are this images equal to one another? If not, why? (2 points)

                                                             (9 Points)

Deliver your code without data in an email together with your answers to the questions, clearly indicating in which folder to put the data and which class to execute.

Exercise 2   Theory   (8 Points)

a) What means rectification? What is its purpose? Why is it important for stereo vision and mapping?   (4 Points)

b) Halve the dimensions of the following curve indicating the correct projective transformation: $x^T \begin{bmatrix} 1 & 0 & 1 \\ 0 & 1 & 1 \\ 1 & 1 & 1 \end{bmatrix} x$. Which is the curve shape?   (4 Points)