



Prof. Dr.-Ing. A. Bruhn
Institute for Visualization and Interactive Systems
Department Intelligent Systems
University of Stuttgart

Programming for Computer Vision – Training Sheet

Problem 0.1 (Brightness and Contrast)

Please download the required file `cv20_prog_test.tgz` from ILIAS. To unpack the data, use `tar xvfz cv20_prog_test.tgz`.

- a) In the file `simple_filter.c`, supplement the routine `brightness` with the missing code such that it shifts all pixel values by a given offset.
- b) In the file `simple_filter.c`, supplement the routine `contrast` with the missing code such that it scales all pixel values by a given scaling. Please note, that the scaling is applied to pixel values which are shifted by 127.5.

Compile the program with `gcc -O3 -o simple_filter simple_filter.c -lm`.

Guidelines for the Tutorials

- **This training sheet** should recall some programming preliminaries and is **not** graded. If you have problems to solve it, contact your tutor as soon as possible.
- The following exercise sheets contain **three types of problems**:
- **Homework Assignments (H)** have to be submitted before the specified deadline. They will be corrected and you will receive feedback on ILIAS.
- **Programming Assignments (P)** are intended to help you to further familiarize with the contents of the lecture. They **don't** have to be submitted and will not be graded, but example solutions will be provided online later on.
- **Classroom Assignments (C)** are intended to be solved **within** the next tutorial. They **don't** have to be submitted and will not be graded, but your tutor will help you to complete them correctly.
- In order to gain **admission to the exam**, you have to achieve **50% of the total points** from the homework (H) assignments within the semester.