BLG 453E Homework - 2

Due 11.11.2018 22:00

Policy: Please do your homework on your own (Do not copy paste your solutions from the internet or your friends). The code and the report you submitted must be your own work. All code must be implemented using **Python 3.5+** programming language and **OpenCV Python wrapper**. If you use other version of Python and your code give an error because of Python version you will get 0 point. Include necessary files with your homework. Do not use absolute file paths. The deadline for this assignment will not be postponed.

For your questions: albay@itu.edu.tr

1. **Filtering & Transoformations**

   Important note: During this homework do not use any built in function to warp images. You have to implement Bicubic interpolation and backward mapping. You do not have to use PyQt5 but if you use PyQt5, you will get 50 extra points.

   In this section, you are required to implement following application:

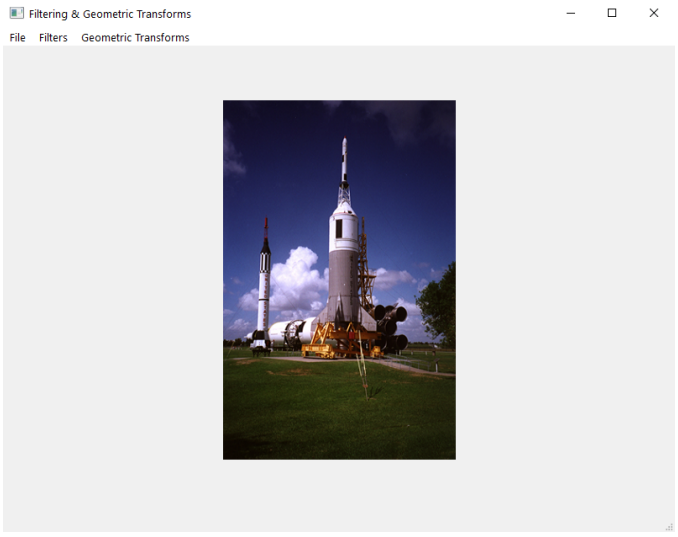

Figure 1: Main window.

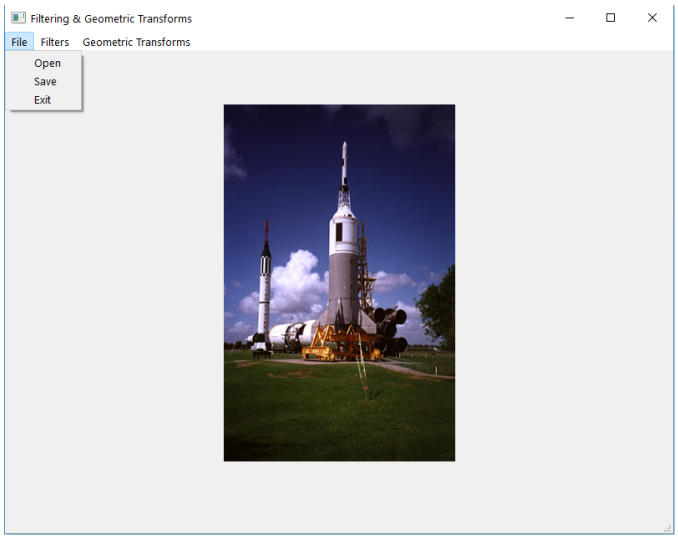

Figure 2: File menu.

In the following images you will see menus of the application. You must have to implement these functionalities. You have to preserve image during these operations like the following rotation example:

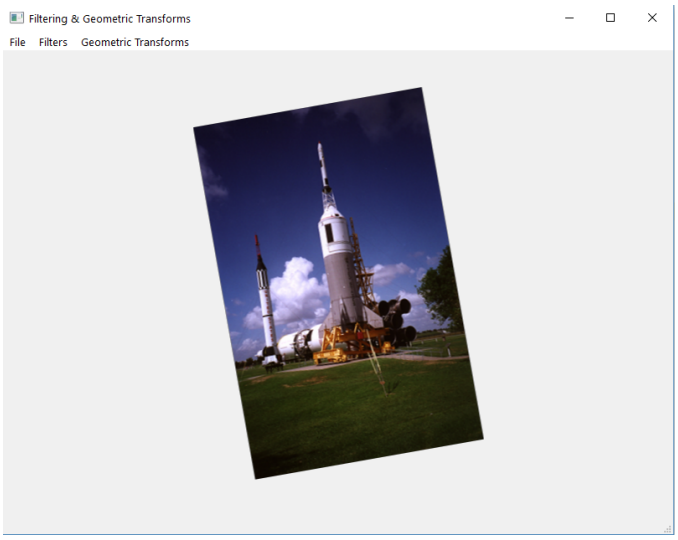

Figure 3: Rotated image.

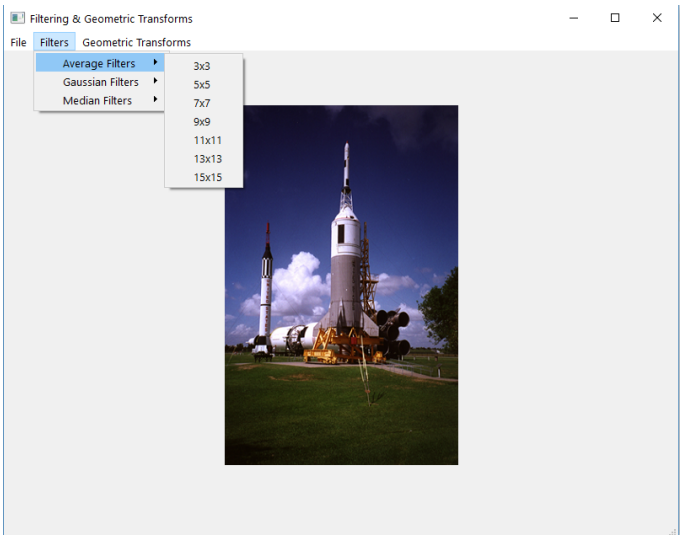

Figure 4: Average filters.

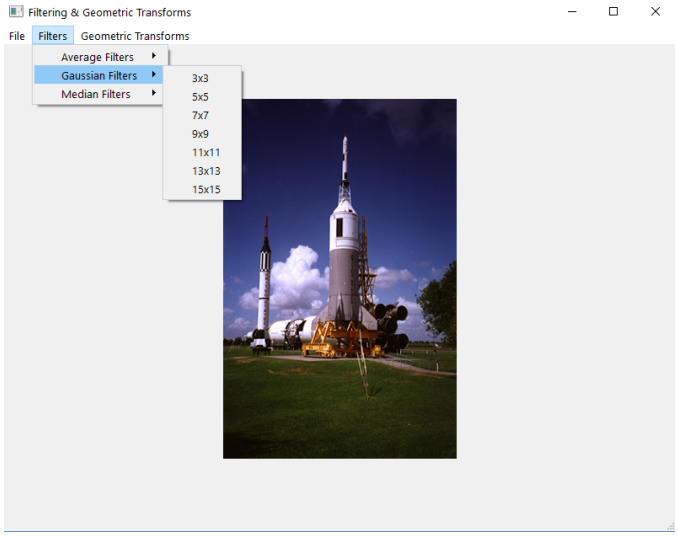

Figure 5: Gaussian filters.

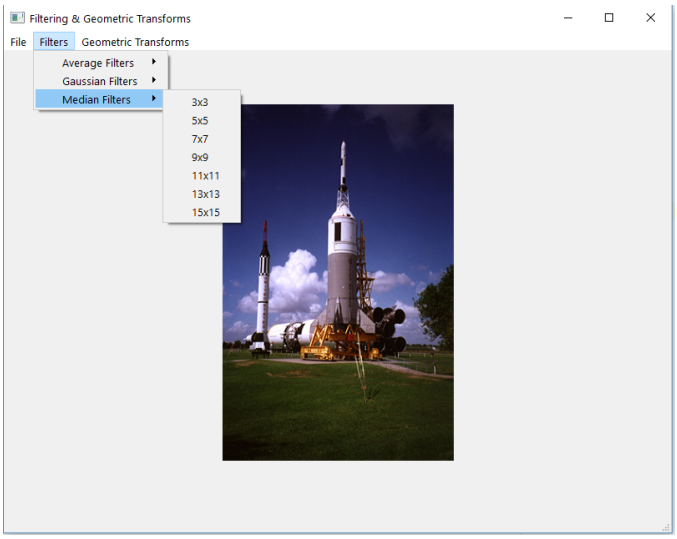

Figure 6: Median filters.

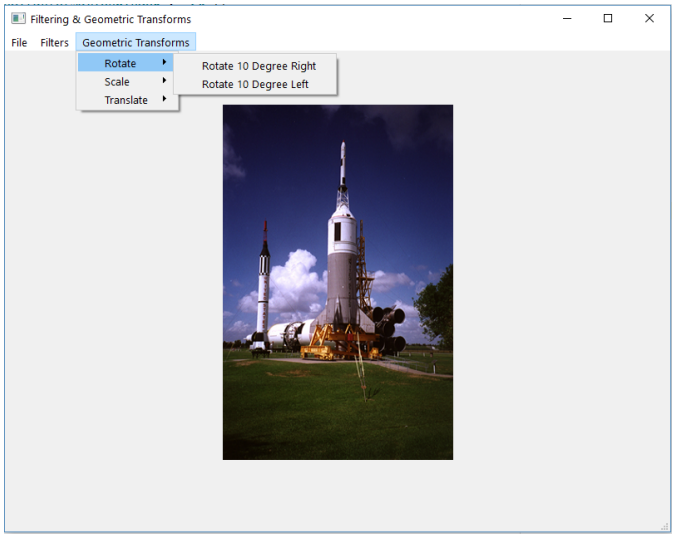

Figure 7: Rotation

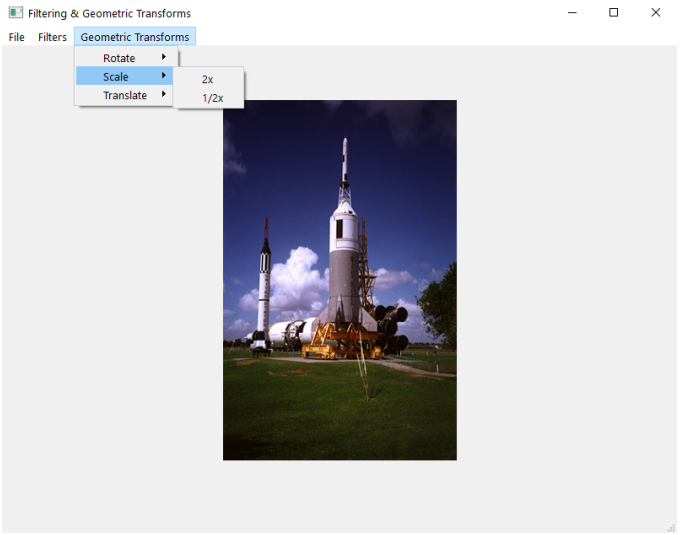

Figure 8: Scaling

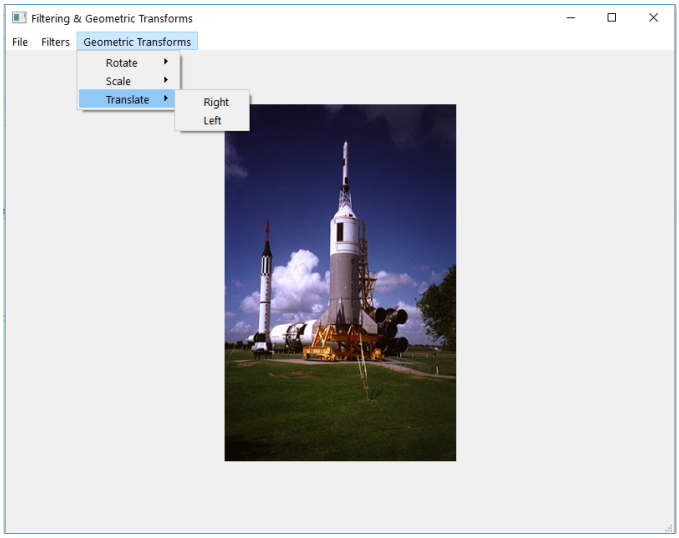

Figure 9: Translation