**Fall 2023**

Author 1: Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ CMS No.: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

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**Note:** Submit the solution of the assignment in soft form and MATLAB/python files on LMS.

Do the following (**Note:** More marks will be awarded to assignments with minimum/no use of libraries)

1. Take any image and perform Gaussian filtering, box filtering and median filtering. Also provide comments on the results.
2. Take any image and detect edges by using Sobel and Perwitt Kernel. Comment on both results.
3. Take any image and plot its histogram representation.
4. Take a colored image and provide its gray and binary representation.
5. Take any image and detect the corners by employing Harris corner detection.

**Authors Contributions.** Mention each author’s contribution at the end of each question (**Mandatory**).

Author 1.

Author 2.

Author 3.

**Grading scheme:**

* Q1: 10 Marks
* Q2: 10 Marks
* Q3: 10 Marks
* Q4: 10 Marks
* Q5: 10 Marks
* **Total: 50 marks**

**Copying.**  Copying is highly discouraged and it will lead to **a significant loss (90-95 %) of marks.**

\* Copying includes using sentences, variables, code, formats from others. Discussion is appreciated, but attempt the tasks on your own (which would make it look original).

**Submission**

* Submit the assignment through LMS in pdf format along with zipped folder of python/Matlab files (also the input/output images).
* File name must include the authors name as below;

AtiqRehman\_KashifJaved\_QaiserShehzad.zip