ADIP-2020
ASSIGNMENT-3

Consider a pair of images of the same scene taken by the same camera from two different viewing positions (as attached with the assignment). Perform the following operations.

(i) Form a set of pairs of corresponding points using key point extraction and feature descriptors (e.g. SIFT or SURF). You may use functions provided by the development environment for these operations. 10

(ii) Compute the fundamental matrix from them. 20

(iii) Draw the epipolar lines corresponding to the key point set formed by you in both images. 20

(iv) Estimate the epipoles from these lines, and also compute the epipoles from the fundamental matrix. Find out the distances between two different estimated values. 20

(v) Estimate projection matrices from Fundamental matrix. 20

(vi) Compute 3D coordinates of the scene using projection matrices and state whether the depth values corroborate with relative 3D positions of those points as observed in images. 10

For well organised reporting and coding — 10.

You may implement your programs in C++-OpenCV/MATLAB/ Python with necessary user's interfaces and visualization of your results and input.
Please provide a documentation for compiling and running the programs in a README file. The whole project should be submitted in a single tar or zip file.