Homography Computation and Application

1. Develop a GUI based application for rectifying an image so that the projected vertical lines become parallel to y-axis and horizontal lines parallel to x-axis (fronto-rectilinear view) of a planar object. Experiment with the images of a notice-board ("text_box.jpg") and inscription on the wall ("Ajanta_inscription.jpg"), as attached with this assignment. -30

2. Find attached images of the same scene (of a cave painting at Ajanta). One of them is blurred ("Ajanta_blurred.jpg"). The other two ("Ajanta_1.jpg" and "Ajanta_2.jpg") cover the area. Compute homographies of each pair and solve the following. -20

(a) Restore the blurred view with the other two images using homography. -10

(b) Create a mosaiced image with the two images covering the area. -20

(c) Upsample the image "Ajanta_1.jpg" using bilinear interpolation. Improve the result by using additional information from "Ajanta_2.jpg". -20

Submit your codes, result files, a Readme file, description of your technique and discussion of the results in a single compressed file (for both the assignments).

-Bonus (10), if the quality of solution for any of the problems in 2a, 2b and 2c is remarkable.