

Stereo vision uses stereoscopic ranging techniques to estimate a 3D model of a scene. It employs triangulation, a popular ranging technique, to compute the depth from 2D images. A key parameter in the triangulation is disparity, which is inversely proportional to the depth and can be computed from the correspondence points of two images of the same scene that are captured from two different viewpoints.

This assignment consists of the following tasks:

1. Describe the procedure of disparity computing given a pair of rectified images of the same scene captured from two different viewpoints.
2. Write a computer algorithm that computes the disparity of two images. The programming language can be Matlab, python, or other languages.
3. Apply your developed algorithm to the two provided image pairs and derive the corresponding disparity maps. Discuss your observation of the obtained disparity maps.
4. Discuss what affects the disparity map computation, and any possible improvements of your developed algorithm. Implement and verify your ideas over the provided test images. This subtask is **optional**, and there will be credit marks for good addressing of this subtask.

You need to submit your solution report in **PDF format**, and there are no standard templates for your report. Ensure you include your **name** and **matriculation number** clearly in the cover page of your report. If completed by a group (**max with 3** group members), **only one ground member needs to submit** but ensure to include the names and matriculation numbers of all group members on the coverage page of the assignment report.

Similar to the literature review, your report will be evaluated according to both contents and report presentation.

Please submit your solution through **NTULearn** before the deadline on **Nov 1st 2022**. There will be penalty for late submissions.