Trinity College Dublin, The University of Dublin
School of Computer Science and Statistics
CVPR Lab, Dublin 2, Ireland

CS7GV1: Computer Vision

Subrahmanyam Murala

Assignment #02

Stereo matching Disparity and Depth Map Calculation: Complete each question by implementing the necessary functions and code cells as per the instructions in the notebook. The left and right stereo images, along with their corresponding camera parameters, can be found in the provided folder.

Q1. Describe the differences you observe in the left and right images (2 Points)

Q2 Write a function to detects and matches SIFT features between two images using FLANN-based matcher and Lowe's ratio test. (3 Points).

Q3 Write a function to calculates the disparity between matched keypoints in left and right images. (3 Points).

Q4 Write a function to calculates the depth map from a given disparity map, focal length, and baseline (3 Points).

Q5. Disparity Map Analysis: What does the disparity map represent, and how does it relate to depth perception? Provide the mathematical relationship (2 Points).

*** Save the main file of assignment by "*entrynumber_assignment_2.py*"
*** There will be a Plagiarism check on your Python code.

Date of Submission: 8th November 2025

Submissions after the deadline will not be considered.