Depth Estimation using Stereo Images – Team 10

Northeastern University

What is your project goal?

Depth estimation Using stereo images – traditional CV algorithm /and deep learning model

What datasets will you work on? Will your team be collecting new datasets?

We will be using datasets from the link below, once we have satisfactory accuracy, we may collect our own data

https://drivingstereo-dataset.github.io/ - A Large-Scale Dataset for Stereo Matching in Autonomous Driving Scenarios

What software packages are you going to use? Have you investigated what it needs for installation and inputs for running?

We are going use Open CV for the traditional CV algorithm and PyTorch for the deep learning model. We will be using the Northeastern discovery cluster for training our module.. Subsequently, if we are to collect data, we will use ROS Noetic on Ubuntu 20.04. The inputs for running will be Stereo images.

Will your team need any sensors/hardware from the lab? Do you know how to use the hardware/sensors that you need?

We may need the Northeastern Autonomous Car and/or a Stereo Camera only

Are you doing any qualitative and quantitative evaluation on different datasets?

We will be doing qualitative evaluation based on accuracy, loss and absolute relative difference, global difference on the point cloud produced by both models and compare with ground truth data already provided in the dataset.

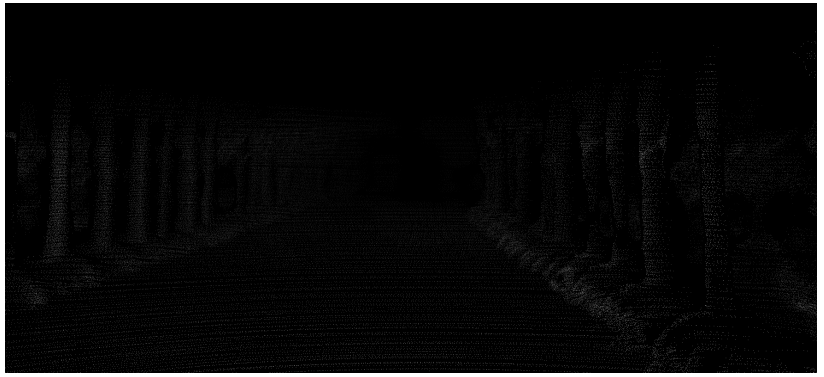
What is your project work division?

Avinash Ayite and Abigail Twumasi – Training and evaluation of deep learning model using PyTorch

Jing Wang and Jonathan Rooney – Work on traditional CV algorithm using Open CV resources

LEFT IMAGE

RIGHT IMAGE



DISPARITY MAP