Underwater Stereo Processing of Divers with MobileStereoNet

Context:

- stereo vision is a useful sensor for underwater robotics

- e.g., for underwater human robot interaction (U-HRI)

- Deep Learning provides new options for stereo processing, e.g., MobileStereoNet, which is to be evaluated

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Tasks:

- given underwater stereo data, i.e., pairs of images

- rectify them based on camera calibration data

- process them with GAnet

- to generate disparity images, point clouds (PC), and voxel (grid) data

- evaluate the quality (e.g., PC density) and runtime

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MobileStereoNet paper & code

- https://arxiv.org/pdf/2108.09770v1.pdf
- https://github.com/cogsys-tuebingen/mobilestereonet

Datasets

- http://www.caddian.eu//CADDY-Underwater-Gestures-Dataset.html

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Topics for the Literature Survey (State of the Art) Part

- (Underwater) Human Robot Interaction (HRI)
- Underwater Vision (in general)
- Stereo Vision (in general)
- Use-Cases of Underwater Stereo Vision