

Underwater Stereo Processing of Divers with GAnet

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., GAnet, 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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GAnet paper & code

- <https://arxiv.org/pdf/1904.06587.pdf>
- <https://github.com/feihuzhang/GAnet>

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