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Abstract

This paper presents recent work on the improvement of the robotics vision based control strategy for underwater pipeline tracking system. The study focuses on developing image processing algorithms and a fuzzy inference system for the analysis of the terrain. The main goal is to implement the supervisory fuzzy learning control technique to reduce the errors on navigation decision due to the pipeline occlusion problem. The system developed is capable of interpreting underwater images containing occluded pipeline, seabed and other unwanted noise. The algorithm proposed in previous work does not explore the cooperation between fuzzy controllers, knowledge and leamt data to improve the outputs for underwater pipeline tracking. Computer simulations and prototype simulations demonstrate the effectiveness of this approach. The system accuracy level has also been discussed.

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