DeeperSense

Abstract
The core objective of the DeeperSense project is to combine different sensor modalities using data-driven methods to improve non-visual robotic perception. The methods are generic and can be applied to all robot application areas, but are demonstrated for underwater service robots. The concept is based on Inter-Sensoric Learning, where one sensor modality learns from another to deliver similar output in terms of accuracy and output type, or to improve the interpretation of data. This can refine and improve the perception capabilities of sensors. Three core algorithms, SONAVision, EagleEye, and SmartSeafloorScan, will be developed to fulfill the needs of use cases.