TITLE

Combining (sensors A) and (sensors B) using (specific algorithm) to perform (process)

ABSTRACT

Combining (sensors A) and (sensors B), the aim of this project was to perform (process) using (method A) by means of (specific algorithm). One of the characteristics of (sensors B) is (sensors B property 1) and this has proven them to be effective tools for (application in science) (authors A, authors B, authors C). However, a problem with (sensors B) is (sensor B property 2), which has to be compensated for by (process). (Process) requires (process requirement) from auxiliary sensors, which in previous research has to a large degree been provided by (sensors C) using (method B) (authors D). The shortcomings of using (sensors C) for (process) is (sensors C property 1) and (sensors C property 2), ignoring (subprocess). Recent advances in (method A) utilizing (sensors A) show that it can be used for (subprocess) (authors E). Coupled with the fact that (sensors A) are (sensors A property 1) and (sensors A property 2) makes (method A) an attractive alternative to (method B) for (process). The results of this project show that fusion of (sensors A) and (sensors B) for the purposes of (process) can be performed using (method A) through (specific algorithm) and that this method yields improved information with regards to interpretation and validation for (application in science).

ONE-LINER

Using (method A), this project combines (sensors A) and (sensors B) to perform (process) for the purposes of (application in science).

KEYWORDS

Visual simultaneous localization and mapping, underwater hyperspectral imaging, georeferencing, stereo cameras, marine taxonomy

LIST OF DELETED CONTENT

(method A) = visual simultaneous localization and mapping
(method B) = hydroacoustic positioning
(specific algorithm) = the ORB-SLAM2 algorithm
(sensors A) = stereo cameras
(sensors B) = hyperspectral cameras
(sensors C) = ultrashort acoustic baselines
(sensors A property 1) = inexpensive
(sensors A property 2) = preserve bathymetric information
(sensors B property 1) = high spectral resolution

(sensors B property 2) = loss of bathymetric information
(sensors C property 1) = high cost
(sensors C property 2) = yield sensor relative position
(process) = georeferencing of hyperspectral images
(process requirement) = navigation data
(subprocess) = environmental topology mapping
(research area A) = marine biology
(research area B) = computer vision
(application in science) = in situ taxonomy of marine invertebrates in underwater environments
(authors A) = Mogstad et. al (2019)
(authors B) = Dumke et. al (2018)
(authors C) = Mogstad et. al (2017)
(authors D) = Ødegård et. al (2015)
(authors E) = Mur-Artal & Tardos (2016)