METHOD FOR DETERMINING THE DEPTH OF IMAGES

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The invention refers to a method for 3D reconstruction using a stereo camera and a neural network based on automatic learning which self- adapts to the different environmental conditions during operation. The method and the related system allow to increase the accuracy of determination of the depth from images.

Protection: International

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INVENTION

The information on the depth of the observed points is crucial and some times essential in applications such as, for example, autonomous or assisted driving, 3D reconstruction starting from 2D images or Augmented Reality. The patented method reduces the need for data necessary for the network training before it becomes effective. Compared to deep learning techniques mainly based on Convolutional Neural Network implemented on bulky and/or high-energy consuming devices, they are less expensive in terms of computation. A low-energy-consumption stereo smart camera could be produced on the basis of the invention. It would be able to self-adapt to the examined environment in real time while processing stereo edge maps.

ADVANTAGES

- Self-training system;
- Accuracy mantained unchanged;
- Image processing both on-board and on other externa hardware devices.

APPLICATIONS

- Autonomous driving system;
- Computer Vision;
- Robotics;
- Augmented Reality;
- 3D reconstrution.

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