

Applications Of Mathematical Morphology Operators In Civil Infrastructures

Authors : Abrudan Dumitru

Abstract : Civil infrastructures require permanent attention from the moment of taking over to the moment of demolition. One important aspect that is mandatory to be taken into consideration is crack detection. This operation, to detect cracks that can appear during the lifetime of the civil infrastructure, requires specialized personnel and, depending on the civil infrastructure, can require specialized skills (such as climbing). To overcome this issue with regard to specialized manpower, image processing is used. In our days images can be easily acquired using an unmanned aircraft vehicle system known also as a drone. The main advantages of a drone for civil infrastructure image acquisition are it can be operated at different heights, weather conditions are not an issue, being suitable to be used on rainy, windy, sunny days and so on. In this paper, we used a dataset that contains three types of images: with cracks, without cracks and with noise. To remove the noise presented in images, mathematical morphology operators (MMO) are used.

Keywords : VGG16, VGG19, image processing, mathematical morphology

Conference Title : ICCV 2024 : International Conference on Computer Vision

Conference Location : Chisinau, Moldova

Conference Dates : June 20-21, 2024