

Optimization of Image data for bridge inspection based on vision system installed in Unmanned Aerial Vehicle.

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ABSTRACT

The use of Unmanned Aerial Vehicle (UAV) equipped with a vision system has received attention as the latest method in the field of bridge inspection, and has been considered as an alternative solution to overcome limitations of existing bridge inspection method. The bridge inspection based on UAV was a method performed by combining image-processing technology with acquired image data. In this case, since the quality of the raw image was an important factor to determine the accuracy of the damage detection, we analyzed the parameters that affect image quality at the acquisition step and proposed the optimal setting of quality parameters based on various experimental cases. In particular, we define the blur effect that has the most effect on the image quality, and propose a method to quantify the occurrence of blur and the optimal camera parameters to minimize occurrence. It also covered the process of analyzing the image data taken on the actual bridge to verify the proposed method.

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