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The Power Line Deflection Detect System using panoramic video stitching Technology and Deep Learning

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Abstract. There are about nine million power line poles and 1.3 million kilometers of the power line for electric power distribution in Korea, and many human resources and enormous amount are required for the maintenance. Recently, many methods have proposed by the researchers on fault diagnosis system that is fused with artificial intelligence. One of the methods tries to maintain the power line facility using a vision system installed while driving the vehicle to detect the power line facility. This paper propose a power line deflection detection system using panoramic video stitching technology and CNN based object detection program. Generally, the distance between two transmission towers are so long that they cannot be stored in the camera view at one time. Therefore, we use panoramic video stitching technology and transformations, among computer vision techniques to preprocess the images. Also we using a line templete based power line tracking system for detect power line.

Keywords: power line detection, object detection, deep learning, panoramic video stitching.