

Utilizing NeRFs-based Point Clouds for Concrete Crack Analysis

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ABSTRACT

Concrete cracks are commonly found among large-scale infrastructures such as bridges and tunnels to smaller-scale infrastructure components that have been in service for several decades. Accordingly, the necessity of thorough O&M of aging infrastructures is widely recognized. This study proposes an innovative approach that utilizes state-of-the-art AI technologies, NeRFs, and Monocular image-based depth estimation for concrete crack point cloud data (PCD) synthesis for improved semantic segmentation results, thereby facilitating a more efficient aging infrastructure.

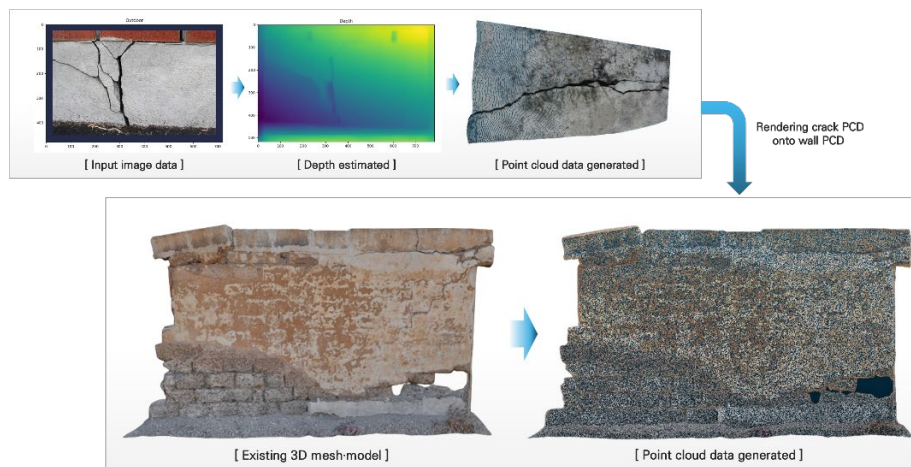


Fig. 1 Workflow for concrete crack and wall PCD synthesis

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