DETECTION OF ANOMALIES FOR HEALTH MONITORING OF CONCRETE STRUCTURES USING VIDEO DATA

Author(s): Tauqir Ahmed

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Abstract:
Structural health monitoring for concrete structures is essential to ensure their long-term physical and functional performance. Presence of large infrastructure and increased number of aged concrete structures necessitates automated process of structural health monitoring. Camera vision for the delineation of surface anomalies of concrete structure has been used for the purpose of health monitoring in the presented paper. Surface anomalies include cracking and spalling of concrete. An approach for the processing of video of concrete surface using MATLAB has been proposed. The stability and suitability of the proposed approach has been verified by applying it on a variety of practical cases. The experimental results showed accurate predictions of anomalies of concrete surfaces. The insensitivity of the proposed approach to the background colour and pattern, and illumination conditions is also verified by the experimental results. The predicted results indicated practical applicability of the proposed approach for health monitoring of inaccessible concrete structure.

For full paper, contact:
Prof Muhammad Masood Rafi
Editor-in-Chief, NED University Journal of Research
Ph: +92 (21) 99261261-8 Ext:2413; Fax: +92 (21) 99261255
Email: NED-Journal@neduet.edu.pk
Website: http://www.neduet.edu.pk/NED-Journal

1 Assistant Professor, Department of Civil Engineering, Al Imam Mohammad Ibn Saud Islamic University, Riyadh, Kingdom of Saudi Arabia, Ph. +966112586363, Fax: +966112586535, Email: tamalik@imamu.edu.sa.