

## Vision-Based Structural Health Monitoring of Pedestrian Suspension Bridge using Deep Learning

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### ABSTRACT

In this study, we developed a structural health monitoring system for a pedestrian suspension bridge using a vision-based motion sensing technique. Most of the pedestrian suspension bridges installed in Korea are poorly maintained, and there are no guidelines for construction standards and safety inspections. Accordingly, it is necessary to evaluate the safety of the pedestrian suspension bridge. 1) Estimate dynamic load size and location using motion sensing and deep learning technology, 2) obtain dynamic displacement by analyzing the movement of the bridge, 3) the status of pedestrian suspension bridge is estimated by system identification.

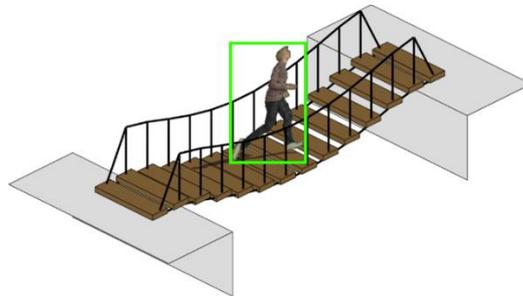


Fig. 1 System Overview

### REFERENCES

Yoon, H., Elanwar, H., Choi, H., Golparvar-Fard, M. and Spencer Jr, B. F. (2016). "Target-free approach for vision-based structural system identification using consumer-grade cameras". *Structural Control and Health Monitoring*, 23(12), 1405-1416.

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