

Design and Implementation of Vision-based Structural Safety Inspection System using Small Unmanned Aircraft

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Abstract—Safety inspection for high-rise structures should be done regularly for follow-up test. However, as it is very dangerous job and direct manual examination takes a lot of time and money, its correct diagnosis is difficult. In this paper, computer vision-based structural safety inspection system is proposed to be designed. The proposed system is an image recognition monitoring system through wireless transmission of sensor data by loading multiple sensors for facility monitoring in UAV platform. The system loads various sensors such as temperature sensor, humidity sensor, smoke sensor, illuminance sensor, CO2 sensor, ultrasonic sensor, and infrared thermal imaging sensor and can achieve stability inspection. So, It can reduce inspection time and building's maintenance cost

Keyword—small unmanned aircraft, Multi-Sensor, Monitoring facilities, Safety inspection, Image Processing, Sensor Fusion, openAPI



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