

A Review of Intelligent Fire Management Systems to Reduce Wildfires

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Abstract : Remote sensing and satellite imaging have been widely used to detect wildfires; nevertheless, the technologies present some limitations in terms of early wildfire detection as the technologies are greatly influenced by weather conditions and can miss small fires. The fires need to have spread a few kilometers for the technologies to provide accurate detection. The South African Advanced Fire Information System uses MODIS (Moderate Resolution Imaging Spectroradiometer) as satellite imaging. MODIS has limitations as it can exclude small fires and can fall short in validating fire vulnerability. Thus in the future, a Machine Learning algorithm will be designed and implemented for the early detection of wildfires. A simulator will be used to evaluate the effectiveness of the proposed solution, and the results of the simulation will be presented.

Keywords : moderate resolution imaging spectroradiometer, advanced fire information system, machine learning algorithm, detection of wildfires

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