ON CLASSIFYING INSECTS FROM THEIR WING-BEAT: NEW RESULTS

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Abstract

Insects variously affect many kinds of cultivations that are vital for rural economy, local heritage and environment: it is well known that insects pollinate a large number of plant species, while certain kinds of insects are pests that have a detrimental effect on cultivations. On top of the hazard list, mosquitoes can transmit serious diseases to humans and livestock. Pests can be controlled with aerial and ground bait pesticide sprays, the efficiency of which depends on knowing the time and location of insect infestations as early as possible. Automatic monitoring traps can enhance efficient monitoring of flying pests by identifying and counting targeted pests. This work deals with novel advanced feature extraction and classification techniques as applied to the task of classifying insects from their wing-beat. It reports the most accurate results in the literature on two different datasets coming from a large number of flying insect species.

Keywords: automatic insects classification, automatic monitoring of insect traps

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