UNIVERSITY OF SOUTH FLORIDA

Major Research Area Paper Presentation

A Machine Learning Framework to Classify Mosquito Species from Smart-phone Images
by
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For the Ph.D. degree in Computer Science & Engineering

We design a system based on smart-phone images for mosquito species identification, which integrates image processing, feature selection, unsupervised clustering, and a support vector machine based algorithm for classification. Results with a total of 101 female mosquito specimens spread across 9 different vector carrying species (that were captured from a real outdoor trap) demonstrate an overall accuracy of 90% in species identification. When implemented as a smart-phone app, the latency and energy consumption were minimal. In terms of practical impact, common citizens can benefit from our system to identify mosquito species by themselves, and also share images to local/ global mosquito control centers. In economically disadvantaged areas across the globe, tools like these can enable novel citizen-science enabled mechanisms to combat spread of mosquitoes. Ongoing work expands on number of images and number of species captured for improved robustness.

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THE PUBLIC IS INVITED

Examining Committee
Sriram Chellappan, Ph.D., Major Professor
Dmitry B. Goldgof, Ph.D.
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