UNIVERSITY OF SOUTH FLORIDA

Defense of a Master's Thesis

Automated Identification of Stages in Gonotrophic Cycle of Mosquitoes Using Computer Vision Techniques
by
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For the MSCS degree in Computer Science

In this paper, we design Computer Vision techniques to determine stages in the Gonotrophic cycle of mosquitoes. The dataset for our problem came from 125 adult female mosquitoes - each of which belonged to one of three species - Aedes aegypti, Culex quinquefasciatus, and Anopheles stephensi. The mosquitoes were raised in a lab and passed through all four Gonotrophic stages (Un-fed, Fully-fed, Semi-gravid, and Gravid). At each stage, their images were captured on a plain background via multiple smartphones, resulting in a dataset of 1784 images. The images were then augmented using standard techniques to generate a larger dataset of 4000 images. We then trained multiple computer vision models for the problem of classifying Gonotrophic stages of mosquitoes. The accuracy of our models is very favorable and contextually relevant also. To the best of our knowledge, our work is the first to use computer vision techniques to identify stages of the Gonotrophic cycle of mosquitoes. We also present discussions on the practical impact of our study in this paper.

Monday, October 18th, 2021
3:00 PM EST
Online (MS Teams)
Please email for more information
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THE PUBLIC IS INVITED

Examining Committee

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