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EmoSeC: Emotion recognition from scene context

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ABSTRACT

Context provides additional information to determine the actual emotional state of a person as part of a scene. Existing works on emotion recognition in context focused only on the features extracted from the entire image and the target's body. In this work, we propose a comprehensive multi-cue based emotion recognition framework that incorporates the context, using a hybrid architecture comprised of four separate deep convolutional neural networks and a novel feature fusion mechanism. Each deep network presented in our proposed approach effectively learns the emotion-related features from the facial, body pose, non-target subject and entire image, individually. Experiments on Emotic, an in-painted and a newly constructed EmoSec datasets show that our proposed emotion recognition framework is promising when compared to existing methods in terms of accurately classifying emotions. Comparison with the state-of-the-art deep networks and off-the-shelf fusion techniques demonstrates that our network showed an improved performance. Furthermore, the performance evaluation of our proposed approach on all three datasets confirms that the contextual information influences the emotional state of a human.

About the Journal

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The Odonate fauna (Insecta: Odonata) of Belihuloya, Southern Intermediate zone of Sri Lanka: a preliminary assessment and conservation implications

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ABSTRACT

Belihuloya situated in a biogeographical transition zone in south-central Sri Lanka is being threatened by land-use changes. Establishing baseline biodiversity knowledge of an indicator taxa within this lesser explored area, the present study systematically assessed Odonates fauna in different habitat types through a transect survey supplemented with incidental observations. Further, the morphology of larvae and exuvia of some Odonates were opportunistically documented from selected water bodies. Transect survey and opportunistic observations identified 36 species of Odonates (22 dragonflies and 14 damselflies) representing ten families, with ten Sri Lankan endemics. Four species of dragonflies and eight damselflies are nationally threatened, including critically endangered *Elattonneura centralis* and endangered *Libellago greeni*. The calculated species richness (R), Shannon-Wiener diversity (H'), evenness (E) and Simpson's diversity (1/D) values were, 3.51, 2.40, 0.85 & 7.90, and 2.85, 2.36, 0.92 & 8.68 respectively for dragonflies and damselflies, while two groups show vertical niche segregation. Low Odonate community similarity coefficients among habitat types indicate they are complementary for conservation planning. Out of ten Odonate species for which larval stages were recorded, the larval morphology of *Anax indicus* and *Gynacantha dravida* are described for the first time in Sri Lanka. Baseline data herein are used for evidence-based conservation recommendations.

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