SNAKE IDENTIFICATION SYSTEM FOR ENDEMIC SNAKES IN SRI LANKA

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Abstract

Endemic snakes of Sri Lanka should be strictly protected since they represent the critically endangered reptiles in the World. People kill many non-venomous endemic snakes because of their inability to identify from the venomous, and they bring them to hospitals to enable doctors to decide the medical treatments. Therefore, identifying endemic snakes just by their images without nearing them or killing them is essential for protecting them. This research aimed to develop a snake identification system that can identify endemic snakes in Sri Lanka using images.

The snake identification system was designed and implemented having a mobile application for the presentation tier and a flask Rest API for the logic tier. A snake detection model was trained with Mask-RCNN using a TensorFlow model zoo pre-trained model Resnet V2. The model was trained to detect eight endemic snakes in Sri Lanka. The overall accuracy of the trained model was 97.62%.

Keywords: Image processing, Mask R-CNN, Deep learning