Sri Lankan Venomous animal species identification and Recommend Emergency Treatments. (Venom)

A dissertation by

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W1761314 / 2019371

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Submitted in partial fulfillment of the requirements for the BSc (Hons) in Computer Science degree at the University of Westminster.

July 2023

Abstract

This research project aims to develop a Venomous Animal Identification System to accurately identify venomous animals in Sri Lanka using object detection technology. Due to the lack of data set availability, the author has decided to continue the project with identifying 10 snake species. The project follows a three-tier architecture that includes presentation, logic, and data tiers. The presentation tier comprises the user interface, while the logic tier contains the functionalities that should be performed when an image is uploaded by the user. The data tier stores all the data required to perform CRUD operations by the logical tier. The approaches used include transfer learning with ResNet50, data augmentation, and classification with CNN.

The accuracy of the system's snake species identification capability was a critical factor in this project. To achieve the goal of identifying venomous animals in Sri Lanka with increased accuracy, the system was designed to identify snake species in an image with good correctness. The system aims to identify snake species within 25 seconds of the image upload. The system was also designed to provide a user-friendly interface to ensure easy and efficient usage.

Overall, this project aims to provide a user-friendly, accurate, and efficient system to identify snake species in Sri Lanka using object detection technology. The system has the potential to be useful in reducing the number of venomous animal bites in the region and thus improving overall public health and safety. The accuracy of the model, which exceeds 87%, represents a substantial advancement in the identification and classification of snake species.