NANYANG TECHNOLOGICAL UNIVERSITY SINGAPORE

School of Computer Science and Engineering
College of Engineering

Snakify!

Snake Pattern Detection Mobile Application Based on Deep Learning

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Project Objectives

The primary objective of this project is to design and develop a snake pattern identification framework using CNN to accurately classify snake species from given photographs, and to deploy the trained model onto a mobile-based system to accurately identify snake species from given images and geo-tag their spotted locations. Our approach leverages TensorFlow, as well as TensorFlow Lite, a mobile library for deploying custom-trained models on mobile and edge devices. The final product is "Snakify", a mobile app capable of real-time inference on snake species. It also provides up-to-date information regarding local snake species, with the goal to facilitate timely and appropriate medical response. Especially in rural areas with high snakebite incidence, it can save lives and reduce complications associated with snakebites.

Upload Image

Inference Results

Live Inference

Species Encyclopedia

Landing Page

Sighting History

Features

Classify Snake Species

Accurately predict snake species in real-time using deep-learning driven methodologies. Either upload an image to begin classification, or simply use the phone's camera and perform live inference on-the-go.

Inference Results

Find out more about the identified snake species for educational purposes, or to administer the appropriate treatment for a snakebite.
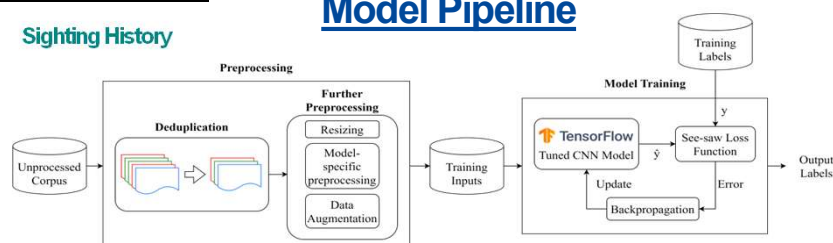
Species Encyclopedia

Learn about the different snake species' info such as their venomous nature or habitats.

Track Sighting History

Snake sighting alerts are synced onto a cloud service and can be kept track through the app.

Model Pipeline

Tech Stack

TensorFlow   TensorFlow Lite   Google Cloud