

MACHINE INTELLIGENCE SNAKE SPECIES DETECTION



TOPICS FOR DISCUSSION

- 01 About Us
- 02 Introduction
- 03 Packages and Libraries Used
- 04 Literature Survey

ABOUT US

Machine Intelligence Project Team Members



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INTRODUCTION AND APPLICATION

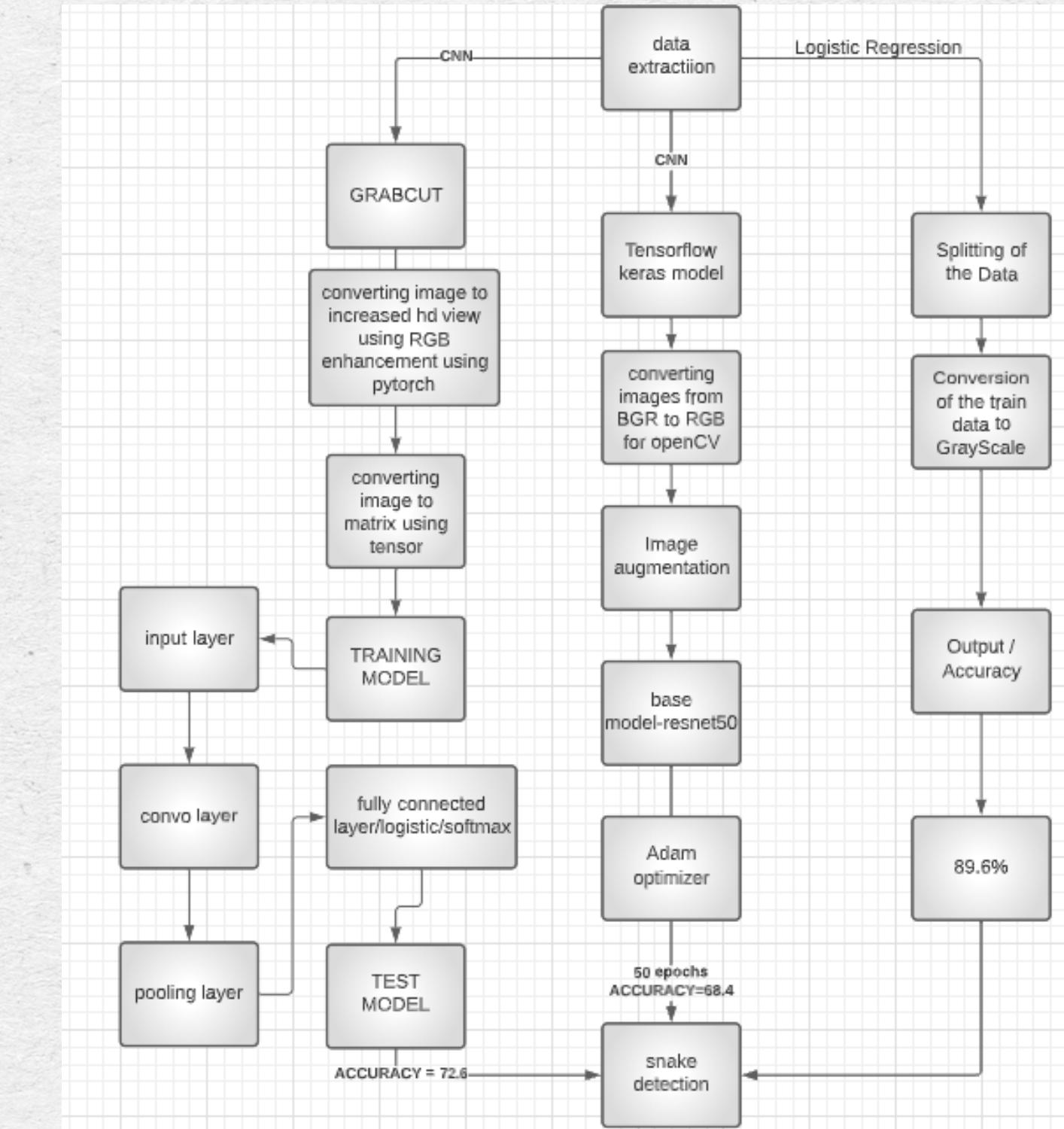
- Keeping in mind the increased number of deaths of humans due to snake bites as well as killing of snakes unnecessarily has caused a major concern for the humans as well as the snake species.
- Therefore our team has decided to come up with a predictive model to showcase that not all snakes are dangerous and also to bring awareness about the kind of antivenom required for the same if bitten.
- This presentation is to showcase a Predictive Model developed to predict if the snake is venomous or non venomous.



PACKAGES AND LIBRARIES USED

-  pandas
-  xlrd
-  numpy
-  datetime
-  sklearn
-  sklearn.model_selection
-  seaborn
-  sklearn.linear_model
-  tensorflow-keras model

ARCHITECTURE



LITERATURE SURVEY

PAPER LITERATURE SURVEY

Snake Species Identification and Recognition

2020 IEEE Bombay Section Signature Conference (IBSSC) | 978-1-7281-8993-2/20/\$31.00 ©2020 IEEE | DOI: 10.1109/IBSSC51096.2020.9332218\

method-grabcut algorithm implementaiton and using data augmentation technique and also using densenet161 to get higher accuracy.

Accuracy-65.5

A Survey on Snake Species Identification using Image Processing Technique

International Journal of Computer Applications (0975 – 8887) Volume 181 – No. 29, November 2018

Method-YOLO algorithm to convert the $n \times n$ matrix to smaller matrix. Yolo can accept upto 30 fps movement in videography . This helps in feature extraction and makes it much easier to extract moving objects. Accuracy - 58.5

Snake Species Recognition using Tensor Flow Machine Learning Algorithm & Effective Convey System

International Conference on Communication and Information Processing (ICCIP 2019), Available on: Elsevier-SSRN
expansion layer-expanding the channels before it paasses to next layer.

Depthwise cnn-contains 1×1 convolution and mobilenet-v2 projection layer-works opposite to expansion layer-shrink expanded channels.

accuracy-86.6

Paper	Abstract	Accuracy
<u>Herpetofauna Species Classification from Images with Deep Neural Network</u>		
<u>A Survey on Snake Species Identification using Image Processing Technique</u> International Journal of Computer Applications (0975 - 8887) Volume 181 – No. 29, November 2018	Using YOLO algorithm, to convert the n*n matrix to smaller matrix. Yolo can accept upto 30 fps movement in videography . This helps in feature extraction and makes it much easier to extract moving objects. <rewrite the abstract, anurag>	58.5%
<u>Snake Species Recognition using Tensor Flow Machine Learning Algorithm & Effective Convay System</u> International Conference on Communication and Information Processing (ICCIP 2019), Available on: Elsevier-SSRN	expansion layer-expanding the channels before it passes to next layer. Depth-wise CNN containing 1*1 convolution and mobilenet-v2 projection layer-works opposite to expansion layer-shrink expanded channels. <delegate to anruag>	86.6%

PAPER LITERATURE SURVEY

Smart Snake Identification using video processing

TENCON 2021 - 2021 IEEE Region 10 Conference (TENCON)

IEEE paper: <https://ieeexplore.ieee.org/document/9707360>

mask-R CNN model architecture used

YOLO algorithm

Snake species identification by using natural language processing

DOI:10.11591/ijeecs.v13.i3.pp999-1006

- March 2019
- Indonesian Journal of Electrical Engineering and Computer Science 13(3):999-1006
- decision tree J48 achieves the highest classification

Combination of image and location information for snake species identification using object detection and EfficientNets

- September 2020
- Conference: Lab Working Notes of CLEF 2020
- At: Thessaloniki, Greece, python, keras and tensorflow

Paper	Abstract	Accuracy
<p><u>Smart Snake Identification using video processing</u></p> <p>TENCON 2021 - 2021 IEEE Region 10 Conference (TENCON) IEEE paper: https://ieeexplore.ieee.org/document/9707360</p>	mask-R CNN model architecture used YOLO algorithm	??
<p><u>Snake species identification by using natural language processing</u></p> <p>DOI:10.11591/ijeeecs.v13.i3.pp999-1006 March 2019 Indonesian Journal of Electrical Engineering and Computer Science 13(3):999-1006</p>	decision tree J48 achieves the highest classification	??
<p><u>Combination of image and location information for snake species identification using object detection and EfficientNets</u></p> <p>September 2020 Conference: Lab Working Notes of CLEF 2020</p>	At: Thessaloniki, Greece, python, keras and tensorflow	??

PAPER LITERATURE SURVEY

Automatic Snake Classification using Deep Learning Algorithm

A CNN Based Model for Venomous and Non-venomous Snake Classification

paper135.pdf

Herpetofauna Species Classification from Images with Deep Neural Network

https://s3.us-west-2.amazonaws.com/secure.notion-static.com/9d677f7a-9159-4bbd-ba28-a18422e44f2c/mi-project-cnn-paper-2.pdf?X-Amz-Algorithm=AWS4-HMAC-SHA256&X-Amz-Content-Sha256=UNSIGNED-PAYLOAD&X-Amz-Credential=AKIAT73L2G45EPT3X45%2F20221107%2Fus-west-2%2Fs3%2Faws4_request&X-Amz-Date=20221107T031703Z&X-Amz-Expires=86400&X-Amz-Signature=fd2bdfe1d02f03c6f8cecad1fd9035bbf7e232514e7e4d0a6ceb96b59f2b2ae2&X-Amz-SignedHeaders=host&x-id=GetObject

Paper	Abstract	Accuracy
<p><u>Snake Species Identification and Recognition</u></p> <p>2020 IEEE Bombay Section Signature Conference (IBSSC) 978-1-7281-8993-2/20/\$31.00 ©2020 IEEE DOI: 10.1109/IBSSC51096.2020.9332218\</p>	Using data augmentation, implementing GrabCut algorithm technique and fine tuning using densenet161.	65.5%
<p><u>Automatic Snake Classification using Deep Learning Algorithm</u></p> <p>International Journal of Computer Applications (0975 – 8887) Volume 181 – No. 29, November 2018</p>	<to be finished>	??
<p><u>A CNN Based Model for Venomous and Non-venomous Snake Classification</u></p> <p>International Conference on Communication and Information Processing (ICCIP 2019), Available on: Elsevier-SSRN</p>	<to be finished>	??

THANK YOU

Regards, Batch 12