

# Mobile-Web Application for (Non)venomous-Snake Recognition

**Project Topic:** Mobile-Web Application for (Non)venomous-Snake Recognition

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**code:** 22p14c0363

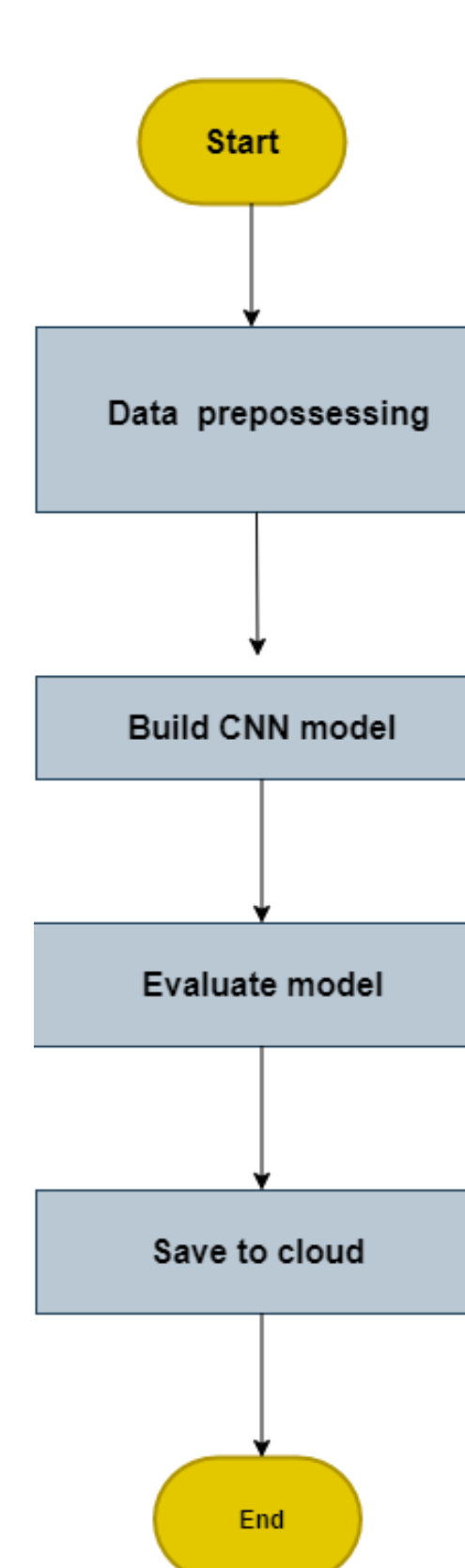
**Institute:** Kasetsart University

**Project Type:** Program for Science and Technology Development Work

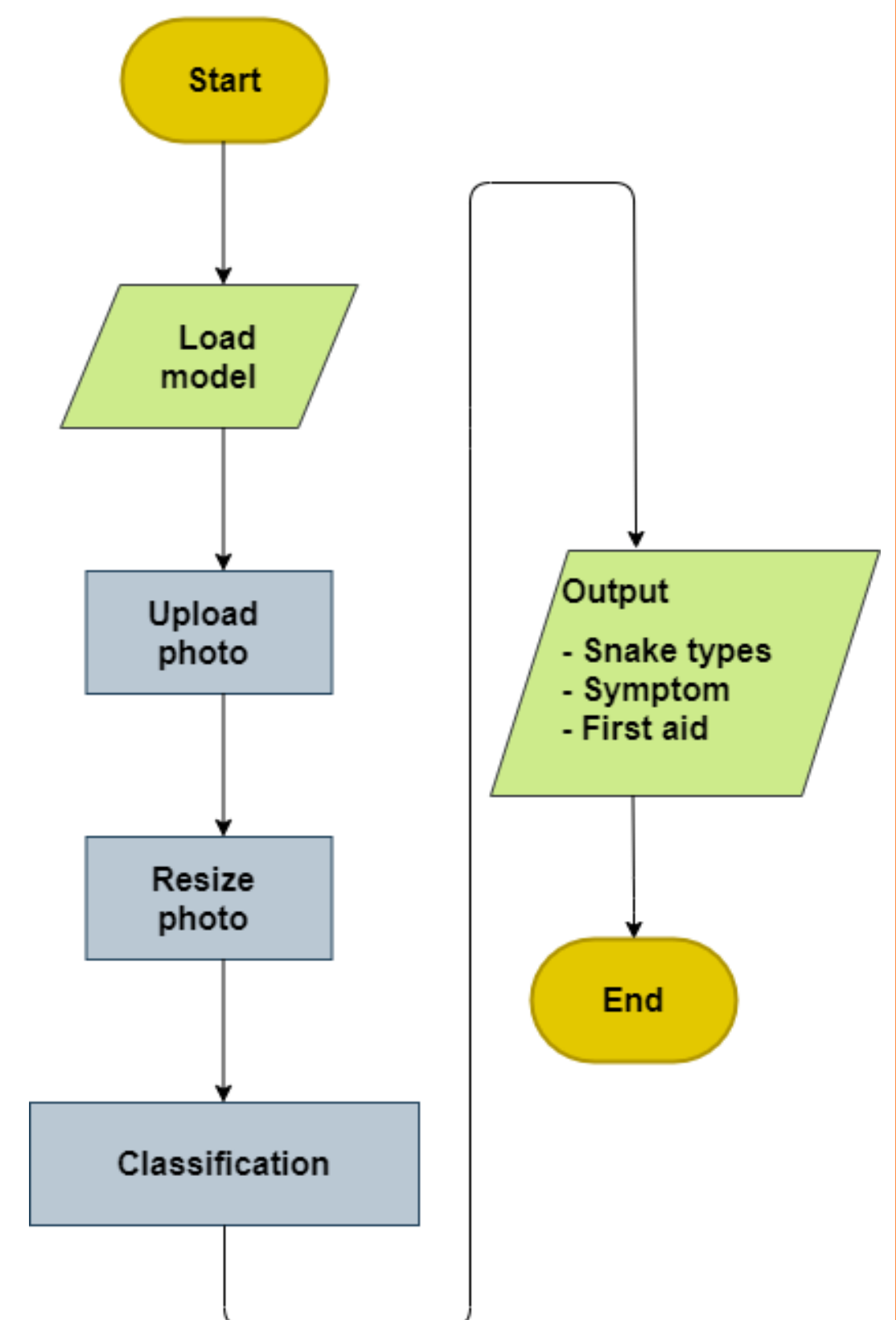
## Abstract

Statistic of Thai people bitten by venomous snakes bitten each year[1] from 2006 to 2015 is 6,155 average. The common venomous snakes in Thailand are Cobra (*Naja kaouthia*), King cobra (*Ophiophagus hannah*), Banded krait (*Bungarus fasciatus*), Russell's viper (*Daboia russeli siamensis*) and Green Pit viper (*Trimeresurus spp.*). They can be found during the rainy season, which can bite people even inside the household. The snakes that are poisonous and most commonly seen are cobra found in the wetlands in every region of Thailand. Whereas king cobra can be found in the dense forest near the water sources in different regions of the country, while green pit viper can be found on trees near the household which is found in the central region. Knowing whether the snakes are venomous or nonvenomous will help properly guard yourself and surrounding people. This project proposes venomous and non-venomous snake recognition application to classify their types. The results show that we can classify 4 types of venomous snakes at the moment with about 80%-90% accuracy. Next step we will extend our work to cover more types and improve user friendliness of our application.

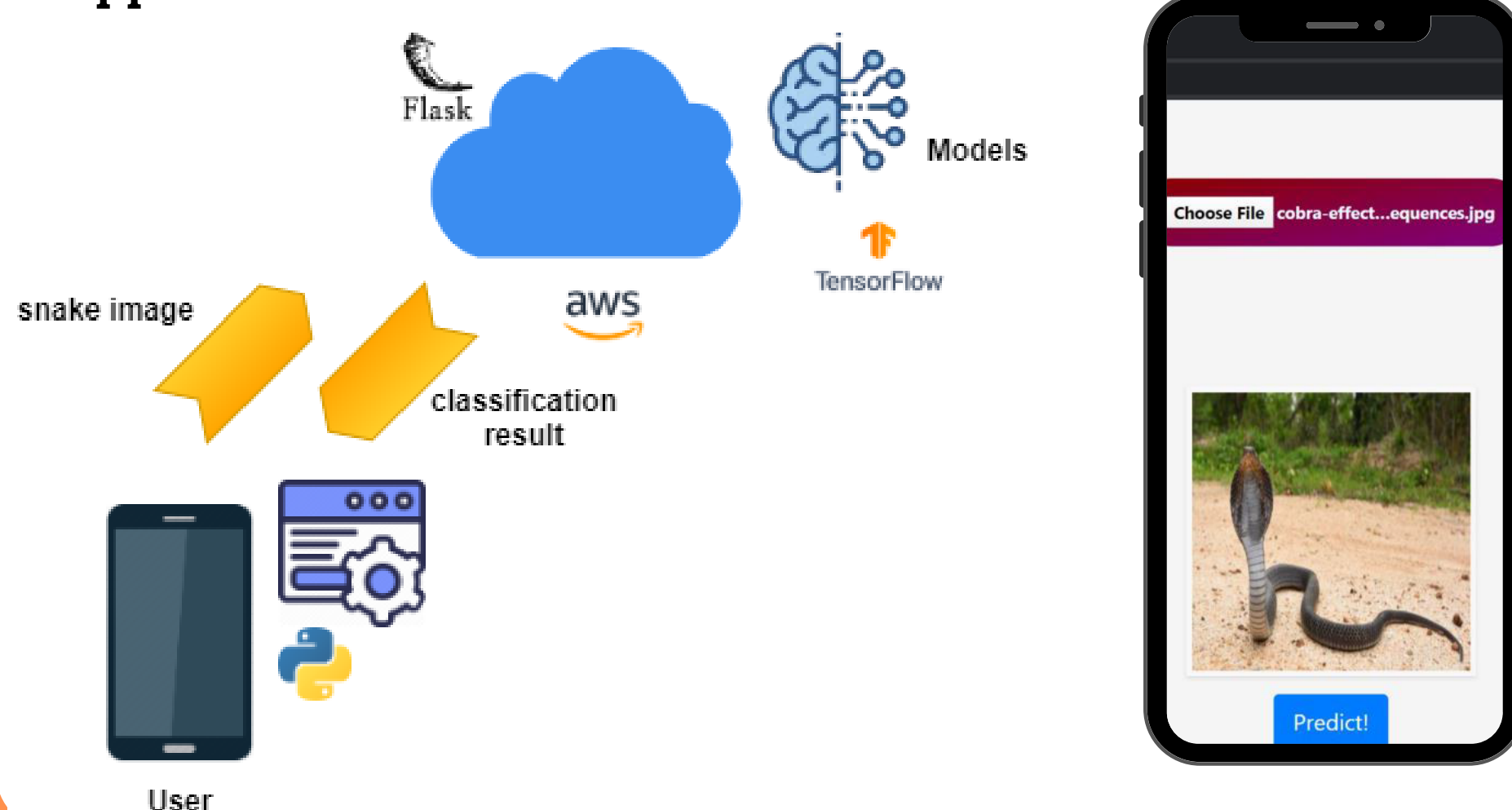
## Training Model



## Snake Recognition



## Application Architecture

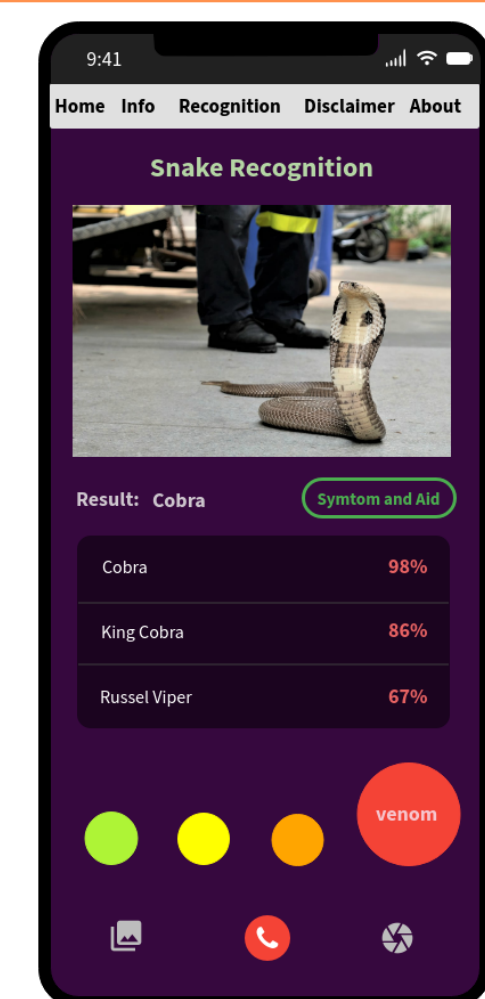


## Future Work

Add more snake types

Improve graphic user interface

Tools :



## Selected Reference

- [1] Snake bite - Bureau of Epidemiology. "Snake bite". Retrieved from [www.boe.moph.go.th](http://www.boe.moph.go.th)
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- [3] Keras: The Python Deep Learning Library. Retrieved from [keras.io](http://keras.io).
- [4] Introduction to TensorFlow. Retrieved from [tensorflow.org](http://tensorflow.org).
- [5] A. Sunil. (2017, July 29). Indian Snake dataset. Retrieved from [github.com/arjun921/Indian-Snakes-Dataset](https://github.com/arjun921/Indian-Snakes-Dataset).
- [6] Girishkuniyal. (2018, September 22). Dog VS Cat Convolutional Neural Network Classifier. Retrieved from [github.com/girishkuniyal/Cat-Dog-CNN-Classifier](https://github.com/girishkuniyal/Cat-Dog-CNN-Classifier).
- [7] V. Narayanan. (2019, October 13). Image Classifier using Resnet50 Deep Learning model (PythonFlask in Azure). Retrieved from [medium.com/@venkinarayanan](https://medium.com/@venkinarayanan)

## Result

Model	Precision	Recall	F1-score	Accuracy
Green Pit Viper	77%	80%	78%	96.21%
Cobra	86%	80%	83%	89.79%
King Cobra	83%	75%	79%	86.65%
Russel Viper	80%	96%	87%	93.58%