



Machine Learning Programs to Classify Type of Fossils at Khao Nang Panthurat Forest Park, Cha-am, Phetchaburi, Thailand

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Problem



Fossils are important resources that help us learn about the history and evolution of life, as well as the history of the Earth including events that occurred at various times. Recently, the Department of Mineral Resources discovered fossils in the Khao Nang Panthurat Forest Park in Cha-am District, Phetchaburi Province, a tourist site where visitors without knowledge of paleontology cannot identify the types of fossils. Therefore, the organizers are interested in creating a program to classify these fossils using machine learning.

Objective

- In order to develop a Machine Learning program for classifying the types of fossils in Khao Nang Panthurat Forest Park, Cha-am, Phetchaburi, Thailand
- To study the efficiency of the Machine Learning program

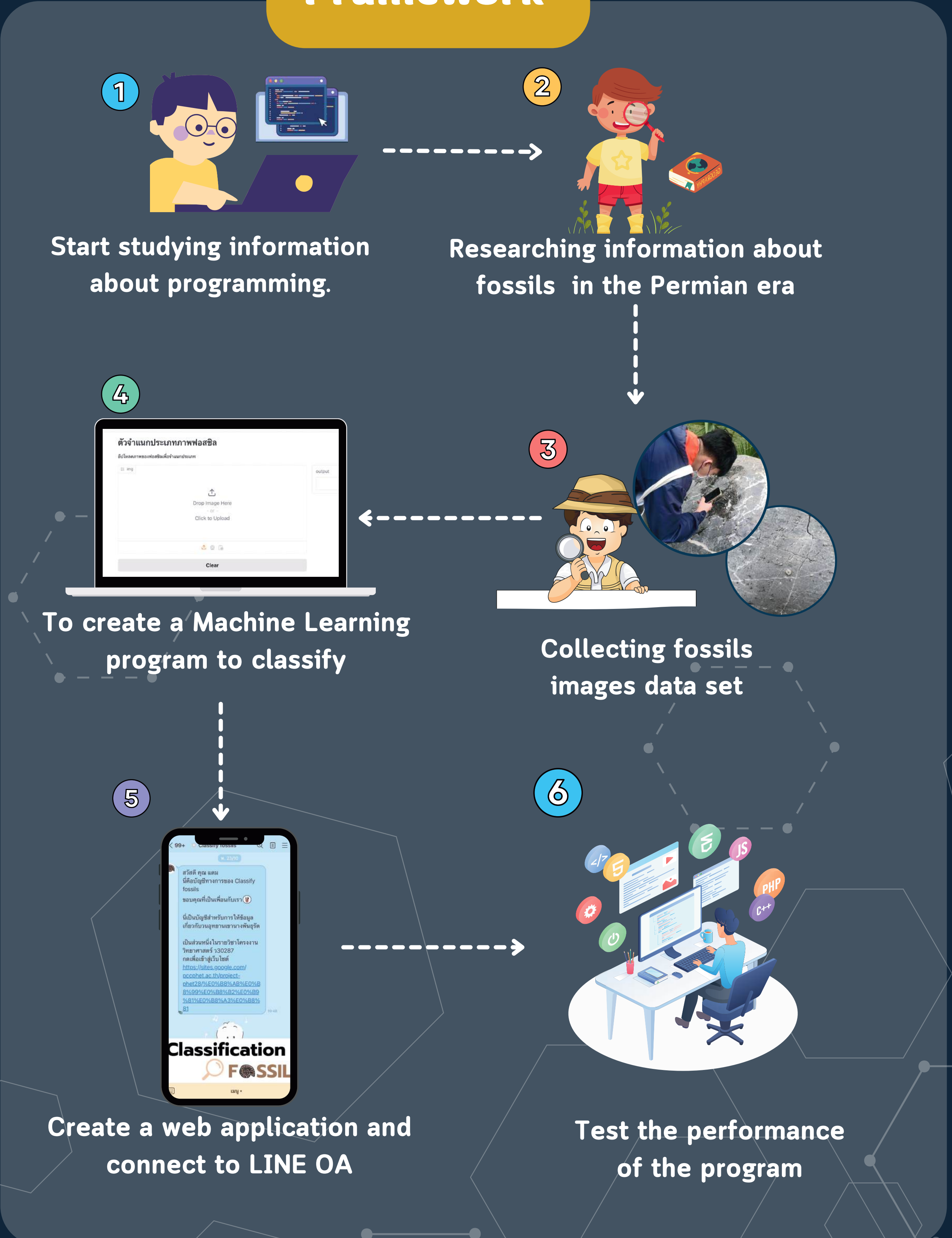
Finding

This image is the official line web page. Clicking the link will take you to the website for fossil separation

Then, this is website that provides information about fossil and Khao Nang Panthurat Forest Park

Finally, when you want to classify fossil, upload a photo so that the web application can categorize the fossil

Framework



Conclusion

The web application can classify fossils, successfully distinguishing between crinoids and fusulinids at a preliminary level.

Program showed that, the accuracy by classifying the fossils remains was 0.95 and the accuracy by testing with images of fossils was 66%

Reference

[1] Xiaokang Liu, Shouyi Jiang, Rui Wu, Wenchao Shu, Jie Hou, Yongfang Sun, Jiarui Sun, Daoliang Chu, Yuyang Wu, and Haijun Song, Automatic taxonomic identification based on the Fossil Image Dataset (>415,000 images) and deep convolutional neural networks, *Paleobiology*, 49(1), 2023, pp. 1-22. <https://DOI: 10.1017/pab.2022.14>

[2] Henri Fontaine, Sathaporn Kavinat, Thi Than Hoang and Daniel Vachard. (2012). PERMIAN LIMESTONE OF PENINSULAR AND WESTERN THAILAND IN KHAO YOI, CHA-AM AND THONG PHA PHUM AREAS. (Online). 12 February 2023. https://thesiamsociety.org/wpcontent/uploads/2020/04/NHBSS_058_1k_Fontaine_PermianLimestone.pdf

