

1)Detection of Birds in the Wild using Deep Learning Methods.

Author: Prathamesh Datar, Kashish Jain, Bhavin Dhedh.

Publication: 2018 4th International Conference for Convergence in Technology (I2CT) SDMIT Ujiri, Mangalore, India. Oct 27-28, 2018.

Methodology: Object detection and localization is one of the prominent applications of the computer vision. The paper presents a comparative study of state-of-the-art deep learning methods - YOLOv2, YOLOv3 and Mask R-CNN, for detection of birds in the wild. Detection of birds is an important problem across multiple applications including the aviation safety, avian protection and ecological science of migrant bird species.

2)Research on Artificial Intelligence: Deep Learning to Identify Plant Species.

Author: JiaDong Guo

Publication:2022 International Conference on Machine Learning and Knowledge Engineering (MLKE).

Methodology: The machine Learning became a popular subject, especially in object recognition area. Aiming at providing a faster and more accurate plant species recognition program, the author introduced a deep learning and CNN, and decided to build a CNN project with PyCharm, anaconda, Kera to find the best way to improve recognition program accuracy and recognition speed.

3)Inception-v3 for Flower Classification.

Author: Xiaoling Xia, Cui Xu', Bing Nan

Publication: 2017 2nd International Conference on Image, Vision and Computing

Methodology: The study of flower classification system is a very important subject in the field of Botany. A classifier of flowers with high accuracy will also bring a lot of fun to people's lives. However, because of the complex background of flowers, the similarity between the different species of flowers, and the differences among the same species of flowers, there are still some challenges in the recognition of flower images.

4)Deep barcoding: Deep learning for species classification using DNA barcoding.

Author: Cheng-Hong Yang, Kuo-Chuan Wu, Li-Yeh Chuang, and Hsueh-Wei Chang

Publication: IEEE/ACM TRANSACTIONS ON COMPUTATIONAL BIOLOGY AND BIOINFORMATICS, VOL. 19, NO. 4, JULY/AUGUST 2022

Methodology: DNA barcodes with short sequence fragments are used for species identification. Because of advances in sequencing technologies, DNA barcodes have gradually been emphasized. DNA sequences from different organisms are easily and rapidly acquired. Therefore, DNA sequence analysis tools play an increasingly crucial role in species identification. This study proposed deep barcoding, a deep learning framework for species classification by using DNA barcodes.

5) An Improved Image Classification Based In Feature Extraction From Convolutional Neural Network: Application To Flower Classification

Author: Faeze Sadati, Behrooz Rezaei

Publication: 2021 12th International Conference on Information and Knowledge Technology (IKT)

Methodology: The convolutional neural network (CNN) is applied classify flower. the pre-trained CNN models in which classification part is removed and instead of it, we use global average pooling (GAP) in the last layer for extracting their features The features obtained from these models are concatenated, and then we use a support vector machine (SVM) as classifier for the flower classification

6) An Improved faster RCNN marine fish classification identification algorithm.

Author: Yuhang Li, Daqi Zhu, HaoDong Fan

Publication: 2021 2nd International Conference on Artificial Intelligence and Computer Engineering (ICAICE)

Methodology: The algorithm first selects residual network (Resnet) with strong feature extraction capability for feature extraction; then generates candidate target regions through 12 different Anchors to further improve the accuracy of detection; finally, the resulting features are transmitted to two subnetworks to achieve classification and positioning respectively.