

The Modification of Convolutional Neural Network in Fin Whale Identification

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Abstract : In the past centuries, due to climate change and intense whaling, the global whale population has dramatically declined. Among the various whale species, the fin whale experienced the most drastic drop in number due to its popularity in whaling. Under this background, identifying fin whale calls could be immensely beneficial to the preservation of the species. This paper uses feature extraction to process the input audio signal, then a network based on AlexNet and three networks based on the ResNet model was constructed to classify fin whale calls. A mixture of the DOSITS database and the Watkins database was used during training. The results demonstrate that a modified ResNet network has the best performance considering precision and network complexity.

Keywords : convolutional neural network, ResNet, AlexNet, fin whale preservation, feature extraction

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