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Fish Detection and Species Classification of Low Quality Fishes Pictures using CNN

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Abstract: *A new technique has been developed to automatically detect and classify various species of fish, which could help combat illegal and unsustainable fishing practices. Around half of the world relies on seafood as their main source of protein, so it is crucial to protect marine life. The new method could provide researchers with a way of monitoring fish populations and determining which species are being overfished. It is hoped that this technology will lead to more sustainable fishing practices and help to preserve our oceans for future generations. The implemented system helps investigators and nature conservationists to analyze images captured by boat-cameras of fishes, overcoming hindrances such as varying degrees of luminosity and opacity. The system is capable of detecting and classifying the fishes into different species, aiding in conservation efforts and research. This technology provides a useful tool for researchers and scientists working in marine biology, making it easier to analyze and understand the behavior of marine life. The fish detection system comprises of two phases – augmentation and detection. The augmentation phase involves using data augmentation techniques to enhance real-time images captured by boat- cameras and send them to the detection module. The detection phase uses the enhanced images to search for fish regions and identify fishes. With this system, the fishing industry can monitor fish populations accurately and efficiently.*

Keywords: CNN, Deep Learning, Image Processing, Machine Learning

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