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Deep learning of remote sensing images for large ships recognition on water surface

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Deep learning of remote sensing images for large ships recognition on water surface
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At present, the traditional detection of large ships on water surface was difficult to cope with the huge amount of remote sensing images with high spatial resolution. Thus, an automatic method for massive amount of remote sensing data was needed to seek for the important characteristics and the relations of remote sensing data. Deep learning was applied on feature learning and expression of large ships on water surface. The method of feature encoding was proposed and improved based on different deep learning methods. Also, this method has a good result on the feature expression and classification of huge ships on water surface. In this study, we present the framework of multi-level feature fusion expression and multi-model feature fusion for recognition of huge ships on water surface. Feature expression and classification of remote sensing image scenes have a good result under insufficient samples. This method was proved to be effective by the experiments of the detection of large ships on water surface. We used the deep learning method to distinguish the large ships on water surface for the interpretation of multi-scale spatial information. This study provides a basic idea and method for the recognition of large ships on water surface using remote sensing images with high spatial resolution.