

## **Detection Of Submarine Pipeline Exposure On Offshore Drilling Oil Platforms Based On Real Time 3D Sonar**

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Real time 3D sonar provides high-definition underwater environment images by actively transmitting sound waves, so that complex seabed structures can be measured, and the reliability and details far exceed any mapping map that can be realized by using alternative methods. Based on the high resolution and precision of its detection results, 3D sonar is widely used in inland waterway engineering or large-scale offshore oil and gas projects. However, at present, the interpretation of relevant results of 3D sonar mainly depends on the manual interpretation of relevant operators, and the output image and its corresponding damage mainly depends on experience accumulation. To solve this problem, through computer vision algorithm, aiming at the common problem of submarine pipeline exposure on offshore drilling oil platforms, this paper establishes a training set of submarine sonar images collected in advance for automatic classification and judgment. Based on the ResNet-50, a new CNN model is trained to realize it. The result shows that the trained CNN model can specify the common type of the 3D sonar images.