

# Ship detection in satellite imagery

by Maria Janoszczyk

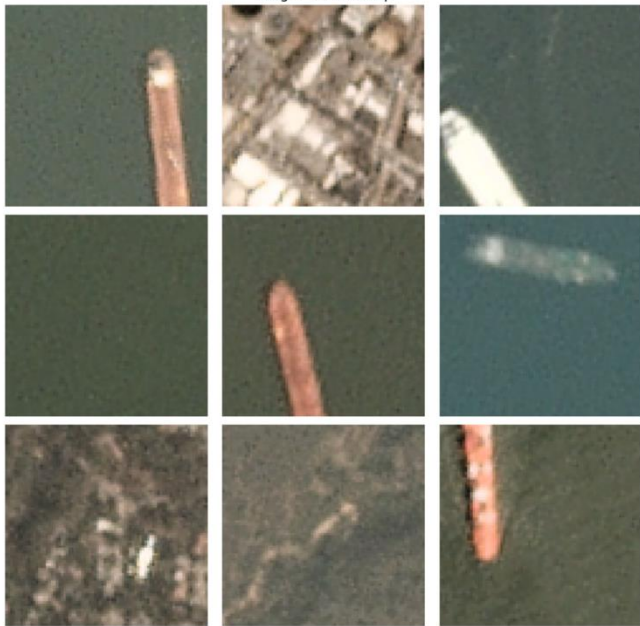
A satellite image of the ocean with a coastline visible on the left. Several ships are scattered across the water, including a large cargo ship and several smaller vessels. The image is dark, with the ships appearing as bright, elongated shapes. A white, wavy graphic element is in the bottom right corner, containing several small blue dots.

**Why detect ships?**

# The dataset

4000 80x80 images, from satellite imagery, 1000 contains ships

Images with no ship



Images containing a ship



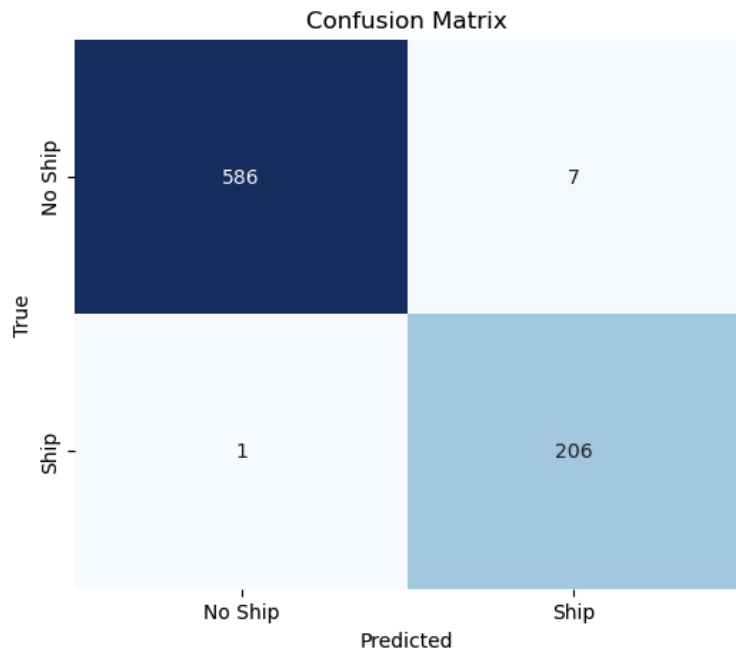
# Model Architecture

1. Input
2. Conv2D
3. BatchNormalization
4. MaxPooling2D
5. Conv2D
6. Dropout
7. BatchNormalization
8. MaxPooling2D
9. Conv2D
10. Dropout
11. MaxPooling2D
12. Flatten
13. Dense
14. Dropout
15. Dense

**3 convolutional layers**

**Dropout &  
MaxPooling, and  
ReduceLROnPlateau  
callback to avoid  
overfitting**

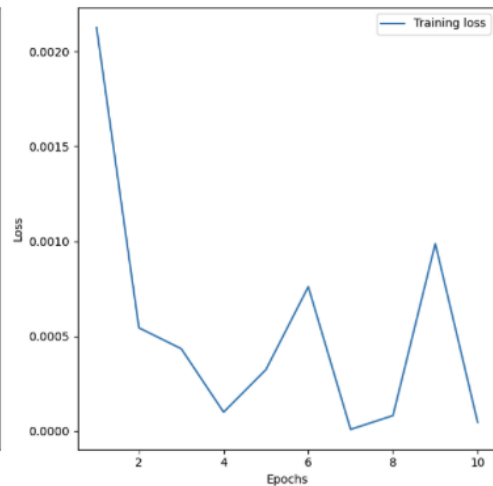
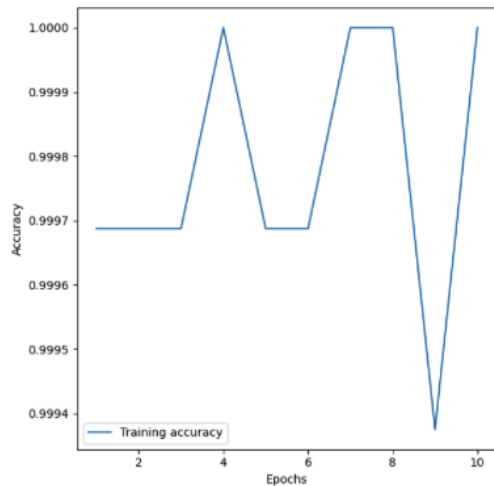
# Evaluation



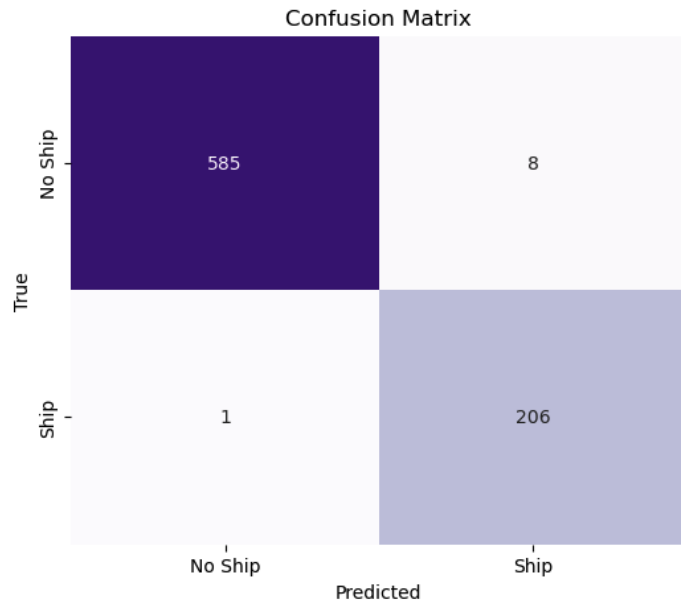
Accuracy - 83%

Loss - 0.55

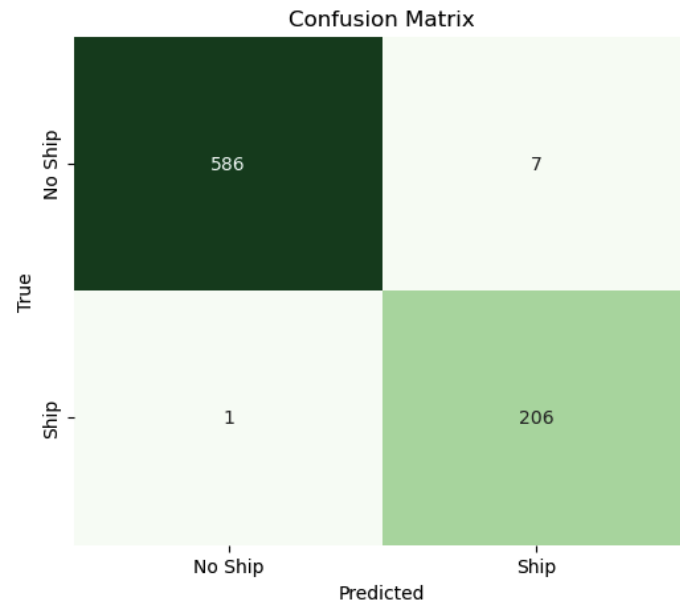
Recall - 0.995



# Hyperparameter tuning



Lower batch size (5)



EarlyStopping & Adam optimizer

# Thank you for listening

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created by **Slidesgo**, including icons by  
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jerry ->

