

NTDS PROJECT PROPOSAL:

Titanic

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1 Motivation

Icebergs and ships do not get well along each other. To avoid dramatic event such as the one that happened a century ago, we aim at helping a noble quest: differentiating icebergs and ships based on satellite imagery to see whether any iceberg is drifting away and might cross the road of a ship.

2 Data set Description

For this project, we would like to work on the dataset provided by the following Kaggle competition: “Ship or iceberg, can you decide from space?”.

3 Project Description

Using what has been studied in class, we would extract features from the images and then create a graph out of those. Getting inspiration from the following paper: “Convolutional Neural Networks on Graphs with Fast Localized Spectral Filtering” as well as in the following slides “Convolutional Neural Networks on Graphs”, we would then proceed to some analysis and binary classification to reach our goal. We aim at evaluating different ways we could extract features and model them for later steps, especially ways of getting rotation invariance on given data to avoid classical convolutional neural network limitation.