API Documentations

Contact Information

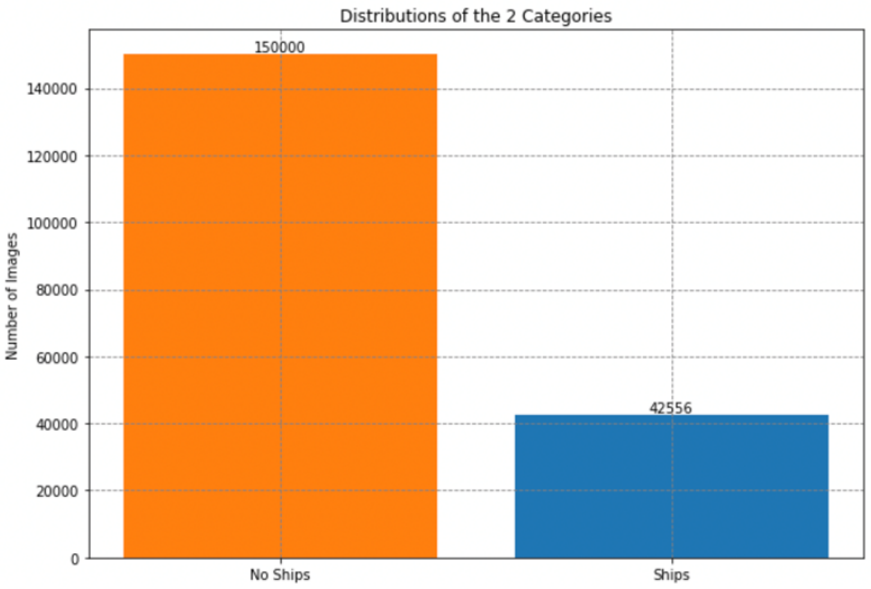
TEAM MEMBER 1:
Name: Adina Nibijiang
Email: adina.n@northeastern.edu
TEAM MEMBER 2:
Name: Zifeng Jiang
Email: jiang.zif@northeastern.edu

Dataset Insights

This dataset has 231723 JPG format image files.
The dataset provides the ground truth (in run-length encoding format) for the images.

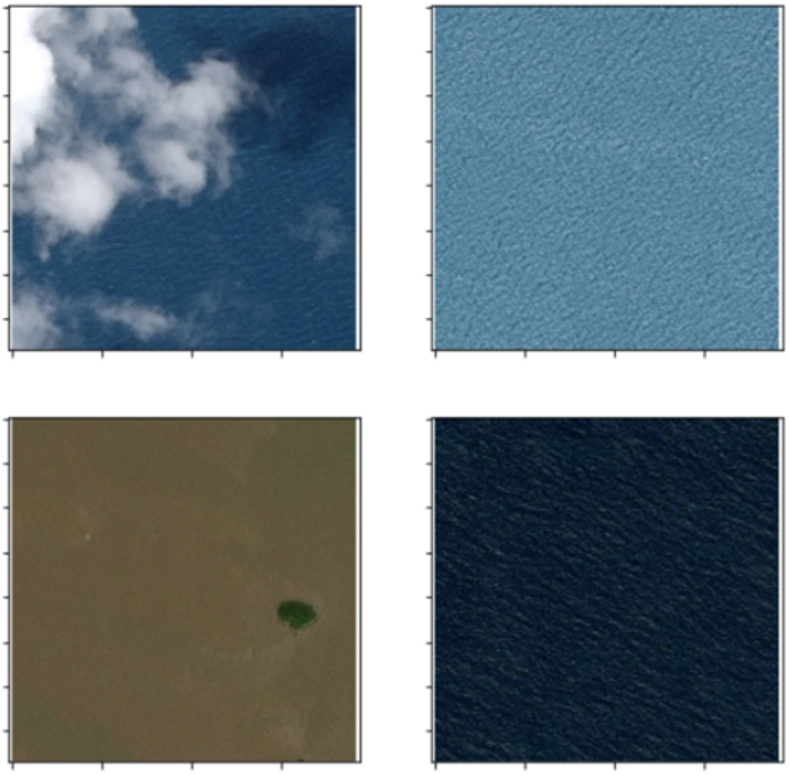
	ImageId	EncodedPixels
0	00003e153.jpg	NaN
1	0001124c7.jpg	NaN
2	000155de5.jpg	264661 17 265429 33 266197 33 266965 33 267733...
3	000194a2d.jpg	360486 1 361252 4 362019 5 362785 8 363552 10 ...

No. of images with ships: 42556
No. of images with no ships: 150000
The bar plot are as follows:



The size of the dataset is about 27 GB.
Sample image with ship:

Sample image without ship:



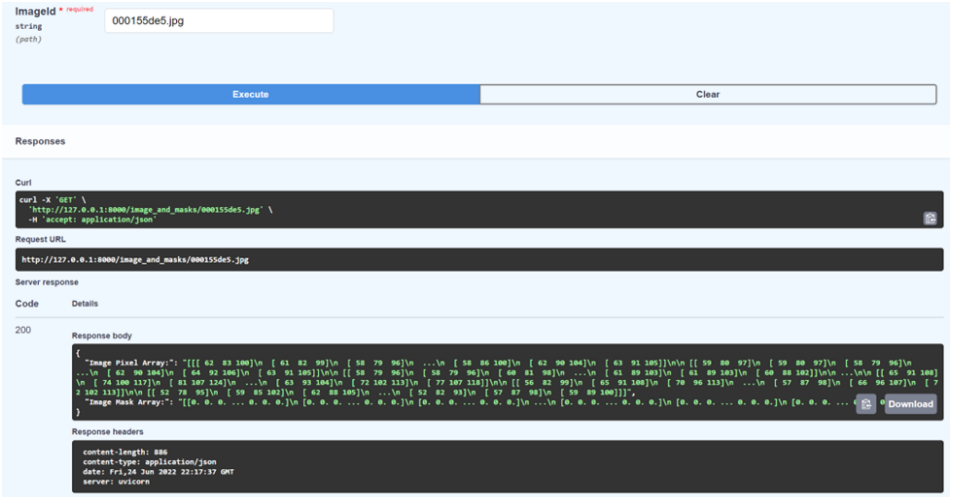
API Functions:

Function 1: Get Image and Masks

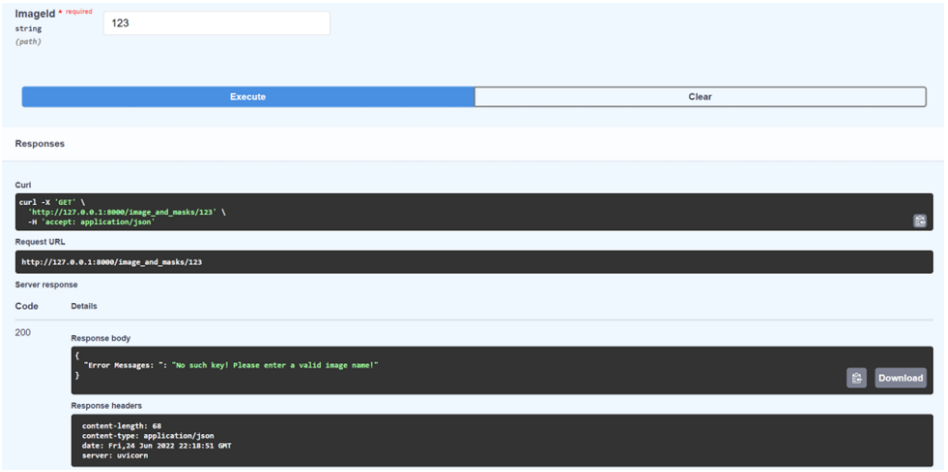
Function Name: img_and_masks

Purpose	This function's purpose is to find out the image numpy array and the mask array.
URL	https://airbus-detection-data-services.herokuapp.com/image_and_masks
Input	Any image file name in the dataset
Output	The numpy array and mask array of this image
Error Handling	If the name of the image file is invalid, return "No such file name! Please enter a valid image name!"

Examples:
Input: 000155de5.jpg
Output:



Input: 123
Output:

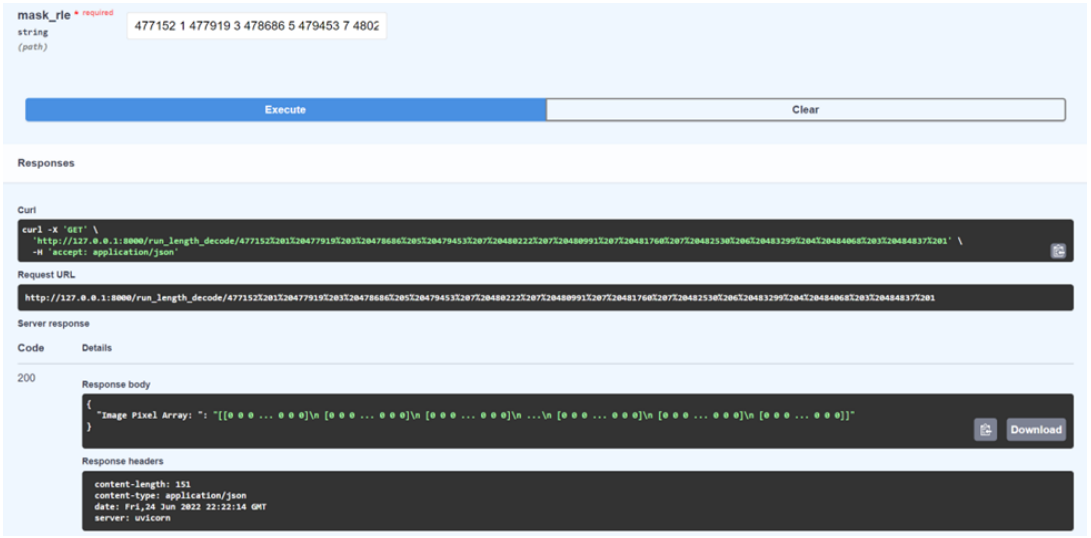


Function 2: Get Run Length Decode

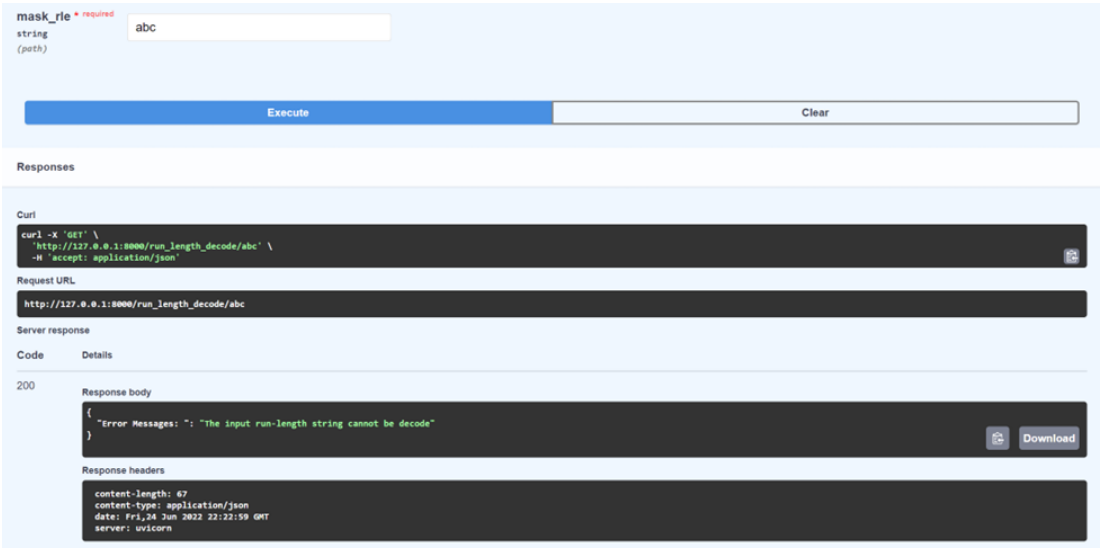
Function Name: rle_decode

Purpose	This function's purpose is to decode the run length encode.
URL	https://airbus-detection-data-services.herokuapp.com/run_length_decode
Input	Run length encoded pixels data
Output	The numpy array of the mask image
Error Handling	"Error Messages: ": "The input run-length string cannot be decode"

Examples:
Input: 477152 1 477919 3 478686 5 479453 7 480222 7 480991 7 481760 7 482530 6 483299 4 484068 3 484837 1
Output:



Input: abc
Output:

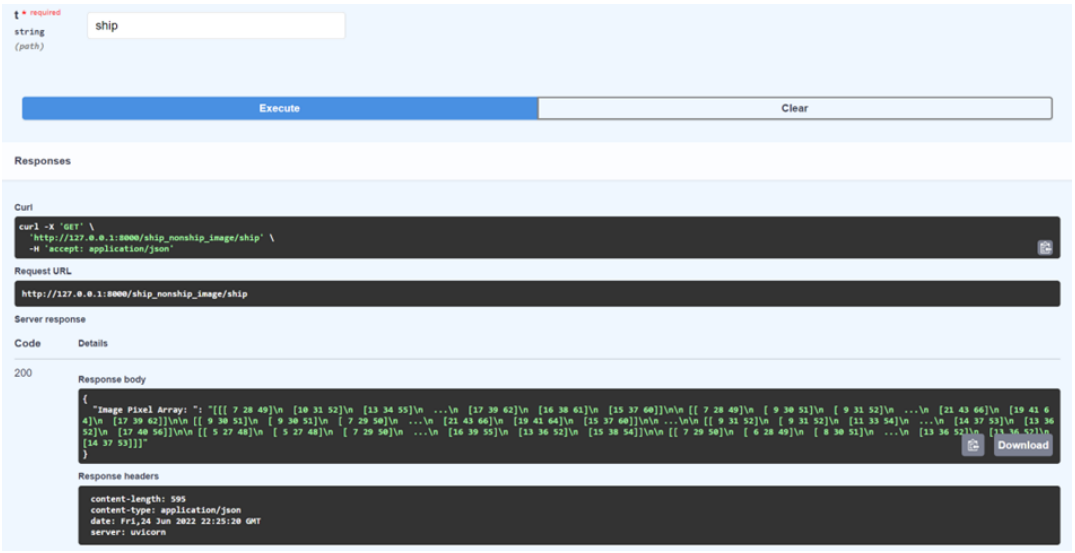


Function 3: Get ship and non-ship image

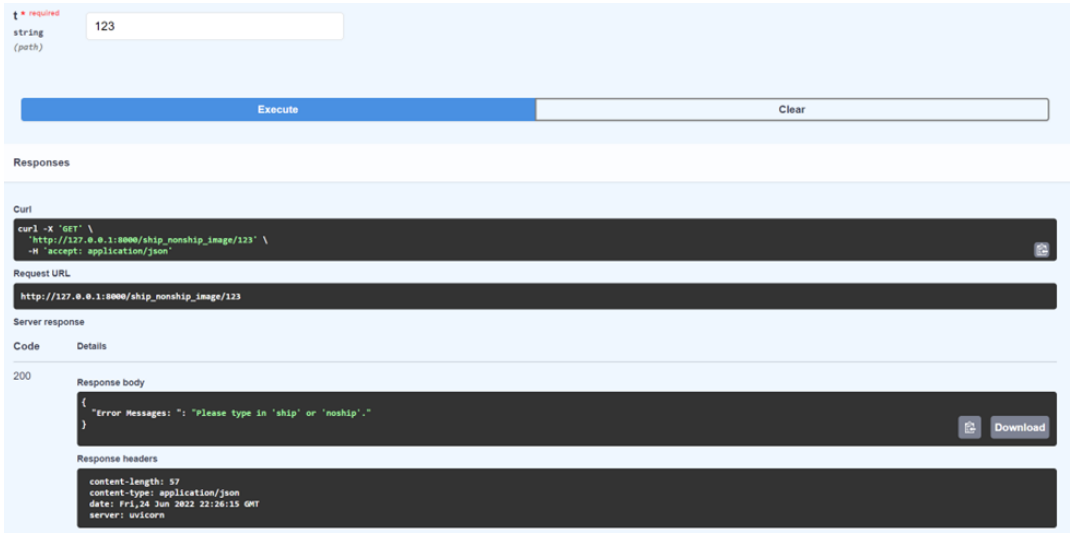
Function Name: search_ship

Purpose	This function's purpose is to return an image array with or without a ship.
URL	https://airbus-detection-data-services.herokuapp.com/ship_nonship_image
Input	‘ship’ or ‘noship’
Output	The array for the image with or without ship correspondingly
Error Handling	"Error Messages: ": "No such file name! Please enter a valid image name!"

Examples:
Input: ship
Output:



Input: 123
Output:

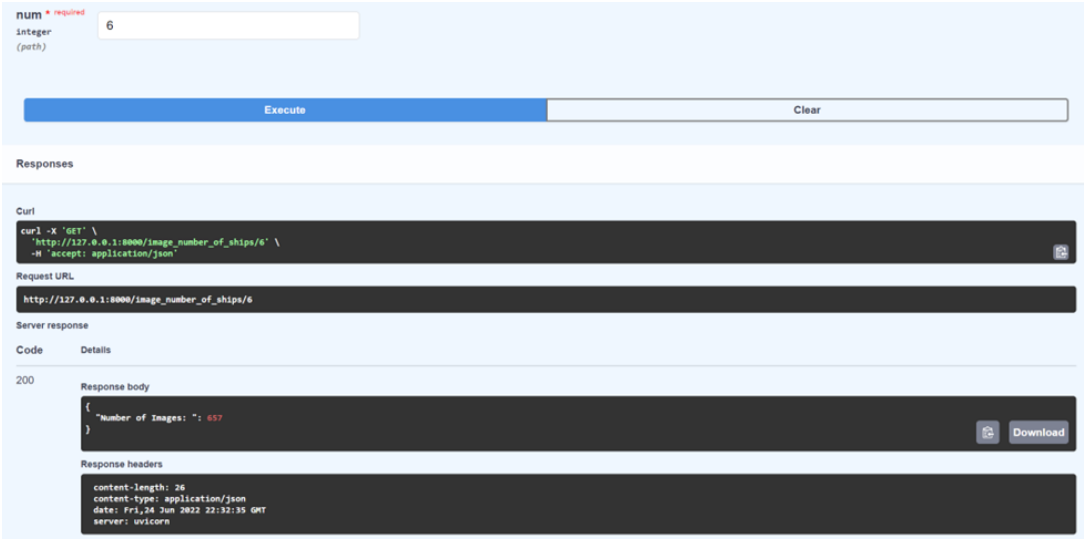


Function 4: Get the Number of images that has certain number of ships

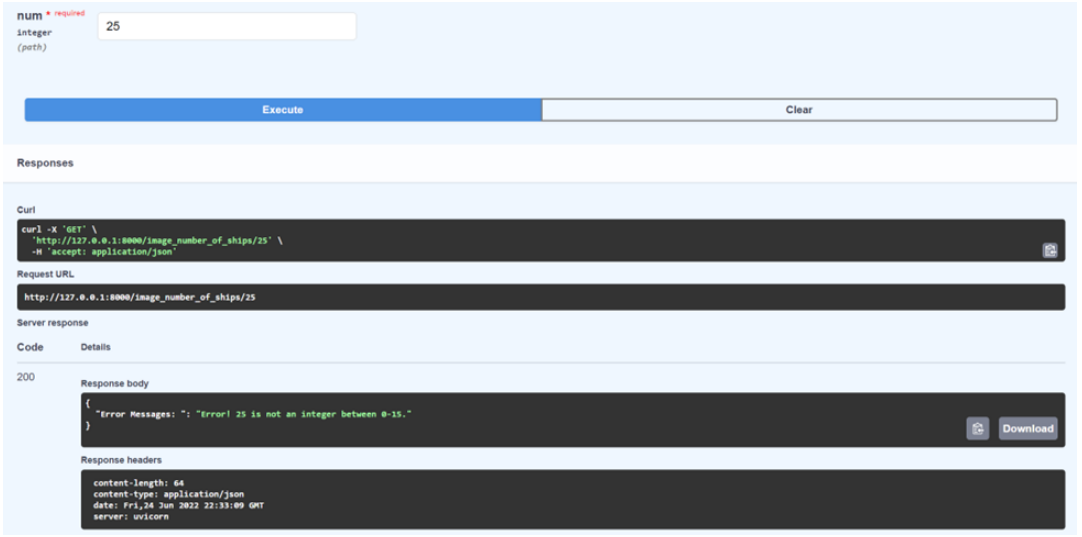
Function Name: image_num_ships

Purpose	This function's purpose is to find out how many images in our dataset has certain number of ships.
URL	https://airbus-detection-data-services.herokuapp.com/image_number_of_ships
Input	An integer number
Output	How many images in our dataset has this certain number of ships
Error Handling	"Error Messages: ": "Error! " + str(num) + " is not an integer between 0-" + str(m) + "."

Examples:
Input: 6
Output:



Input: 25
Output:

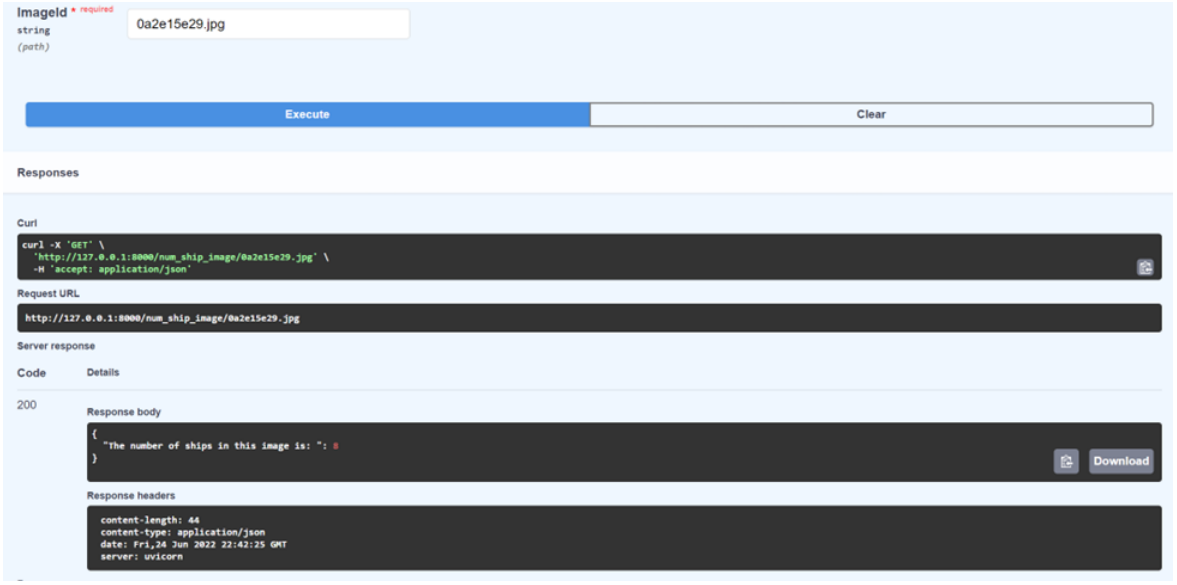


Function 5: Get the number of ships in a certain image

Function Name: num_ship_in_image

Purpose	This function's purpose is to find out the num of ship(s) in an image.
URL	https://airbus-detection-data-services.herokuapp.com/num_ship_image
Input	Any image file name in the dataset
Output	How many ships are there in this image.
Error Handling	If the name of the image file is invalid, return "No such file name! Please enter a valid image name!"

Examples:
Input: 0a2e15e29.jpg
Output:



Input: 123
Output: