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Teaching Artificial Intelligence (AI) to Recognize Methane Seeps in Water Column Data

Introduction

This past spring, I worked with Dr. Skarke, Surabhi Gupta, and members of the computer engineering department to help teach an AI to recognize methane seeps in water column data. My main role was providing the data to use to teach the AI. Teaching AI to recognize these seeps will help save researchers a lot of time looking through this data as they will not have to go through thousands of individual images looking for these seeps.

Methods

My role in this project was going through thousands of individual images of water column data myself and manually selecting methane seeps using MATLAB. I would scan these images for the seeps. Once I found one, I would use the MATLAB program provided for me to use a box to select where the seep feature was located in the image. Selecting these features would allow the AI to learn what it is looking for in the data. This helped teach me to be familiar with analyzing water column data, using MATLAB, and understanding a little bit more about AI.

Example Image

This image below shows what the water column data that is being analyzed looks like.

