

How would you resolve the issue of identifying NO2 plumes?

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Using students for manual labeling data 😊

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Use an unsupervised learning technique to cluster images from dataset, then classify the clusters as plumes.

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Let the neural network create its own categories. Don't train it with plumes, just use it as a classifier and check out the results.

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Add temporal aspect and use repeat criteria in a certain area. So follow certain area over time rather.

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Using knowledge about the area of the image (e.g. is there a power plant nearby or not)

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1

Use an algorithm based on some distance metric. For example, individual tree detection algorithms use the Hausdorff distance to separate the trees in lidar data

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By visual inspection of satellite imagery

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Off site testing

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Be more specific about what is happening on the ground to which kind of plume I am looking for and feed this also to the neural network.

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perhaps combining different bands somehow(?)

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Convolutional Neural Networks

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There is a technology called hyperspectral imaging satellites. AFAIK you can use that to detect the specific substance and not only color / form of plume.

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Only classify those points where clear evidence of NO₂ plumes is known.