



GEOAI ***Reimagined***

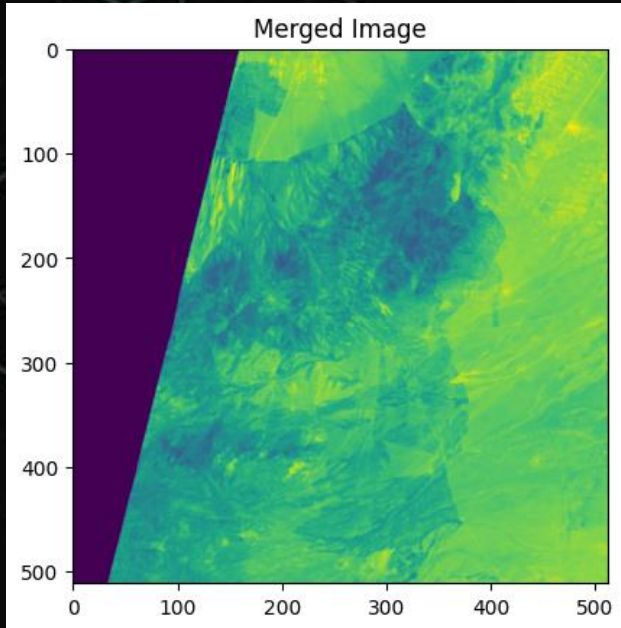
Prepared by AI enthusiasts

Abstract

- Aim is to build a web application that uses an AI Geospatial Foundational Model
- The Model must be fined tuned to help in disaster rescue operations & detection of tornados, Burn scars, etc..
- Using Population distribution day to help the rescue operation to focus on the disaster that has higher density population
- A smart approach of labeling data of Tornados & Hurricanes that only requires few hours to get more than enough data for training

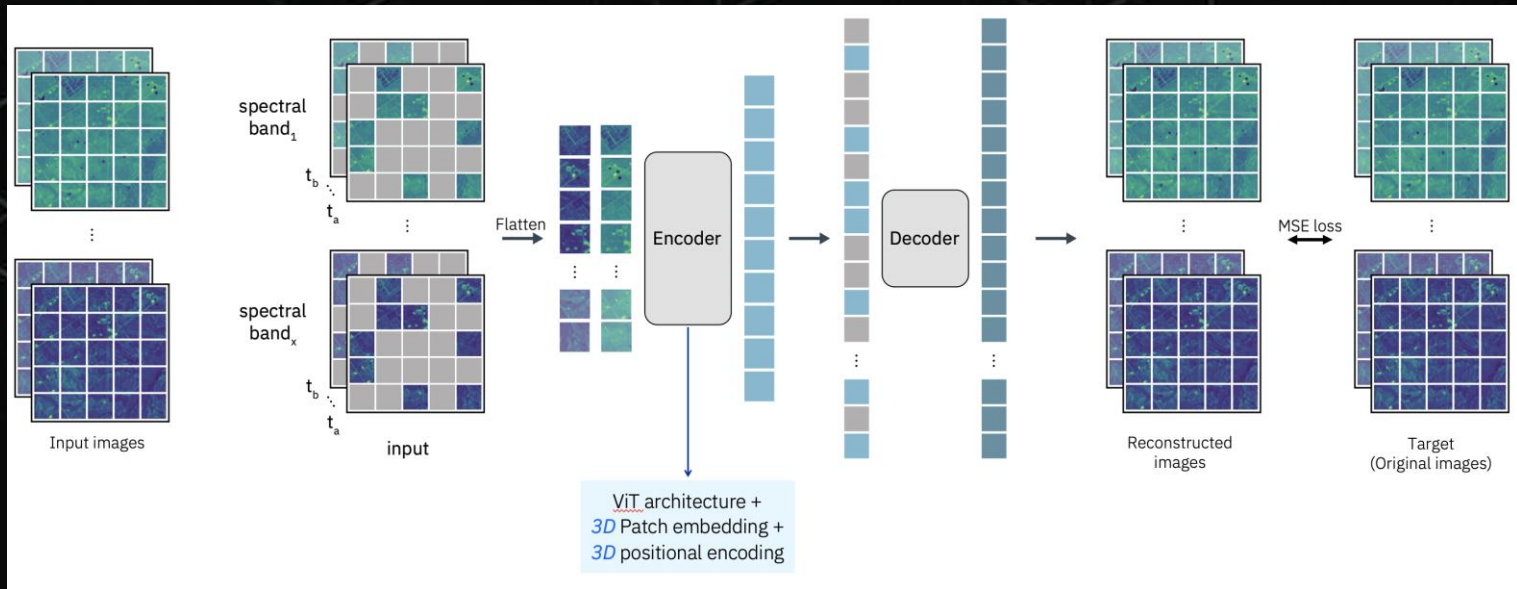
Data Acquiring & Preprocessing

- We used HLSS30 & HSL30 data for burn scars & tornados
- Data set contained merged & masked values:



Pretrained Model:

- We used Prithvi-100
- Model uses visual transformers architecture
- It takes the input flatten then pass it to an encoder then to a decoder then it will reconstruct the image.



Fine Tunning Model

- Loaded Pretrained Model
- We Apply transfer Learning
- Defined Fine-tuned model architecture:
 - Backbone (takes in geospatial image data and processes it to extract meaningful features.)
 - Neck (a ConvTransformerTokensToEmbeddingNeck.)
 - Decode Head (Fully Convolution Network & Produces segmentation Masks)
- We thought about freeze

Deploying

GEOAI Challenge Foundational Model

AI The Power to Change the World.

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