Domain Adaptable Deep Learning Models for Energy Infrastructure Detection using Synthetic Data Generation

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1 Energy Infrastructure Detection

Energy infrastructure mapping is vital for well-informed policy decisions in expanding energy access off of existing infrastructure. However, data on such infrastructure can be scarce. Our project aims to detect and map multiple energy infrastructures through publicly available satellite imagery globally.

2 Domain Adaptation Problem

Computer vision techniques struggle when applied across satellite imagery from diverse geographies that vary in color, vegetation, terrain, etc.

3 Proposed Solution: Synthetic Data Generation

Synthetic data generation with synthetic image blender GP-GAN.

4 Selected Results from Wind Turbines Experiment

Synthetic data generation significantly improves energy infrastructure detection when it is cost-prohibitive to collect more real data.

5 For more information, visit our website

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