

Ecomapper

Meeting 02/10

Model	Clip Score	SSIM	PSNR	LPIPS	FID	Inception Score (mean)	Inception Score (std)
SD3 Imbalanced Wrong Caption	0.290	0.2418832284	8.6556229	0.7633999	168.8898773	3.76454806	0.302766501
SD3 Imbalanced Fixed Caption	0.304	0.328172835	9.47356796	0.71210012	139.3476257	3.6910235	0.3005520
SD3 Balanced 512	0.29	0.310347629	9.85603109	0.7169389	164.895584	3.39953851	0.281120657
SD3 Balanced 1024	0.33	0.331559507	12.4900626	0.68293419	102.7566757	4.1193780	0.233114704
SD3 Balanced 1024 V2	0.32	0.348295492	12.7912842	0.67232294	91.5763168	4.32873058	0.372051298
DiffSAT	0.296	0.322568	9.7554602	0.817574	175.6401062	6.3856706	0.4420668
DiffSAT Country	0.298	0.31427230	9.7979315	0.8099282	175.205413	6.7164258	0.5849442
SD3 Standard	0.318	0.155673729	8.87171326	0.7877193	158.596664	3.839457	0.48739615

Metrics:

Inception Score (IS):

- **Purpose:** Measures the quality and diversity of generated images.
- **Limitations:** IS doesn't compare the generated images to real images; it only measures diversity and clarity.

Fréchet Inception Distance (FID):

- **Purpose:** Measures the similarity between generated images and real images.
- **Advantages:** FID is generally considered more robust because it compares generated images to real ones and accounts for both quality and diversity more effectively.

Structural Similarity Index (SSIM)

- **Purpose:** Measures perceived quality between two images based on structural information.
- **Advantages:** More aligned with human visual perception than PSNR, making it better for tasks where perceptual similarity is important.

Peak Signal-to-Noise Ratio (PSNR)

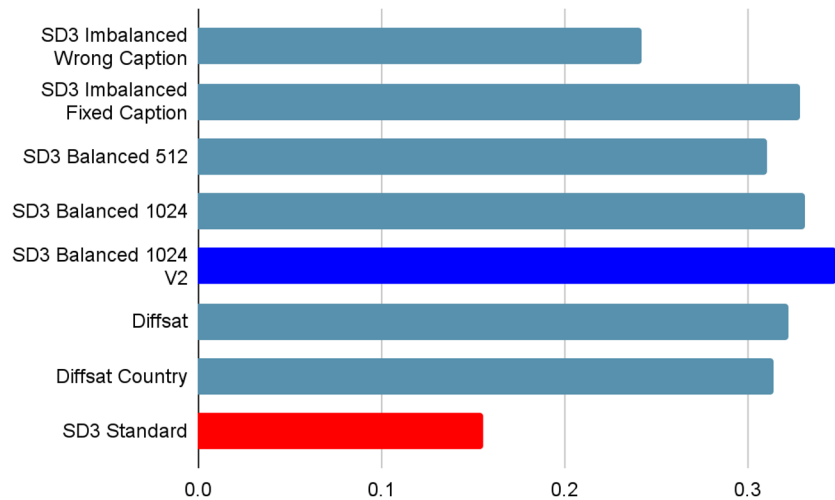
- **Purpose:** Measures the fidelity or quality of images by comparing pixel-level differences.
- **How it works:** PSNR is computed from the mean squared error (MSE) between the original and generated images. A higher PSNR indicates better image quality, meaning fewer distortions.

Learned Perceptual Image Patch Similarity (LPIPS)

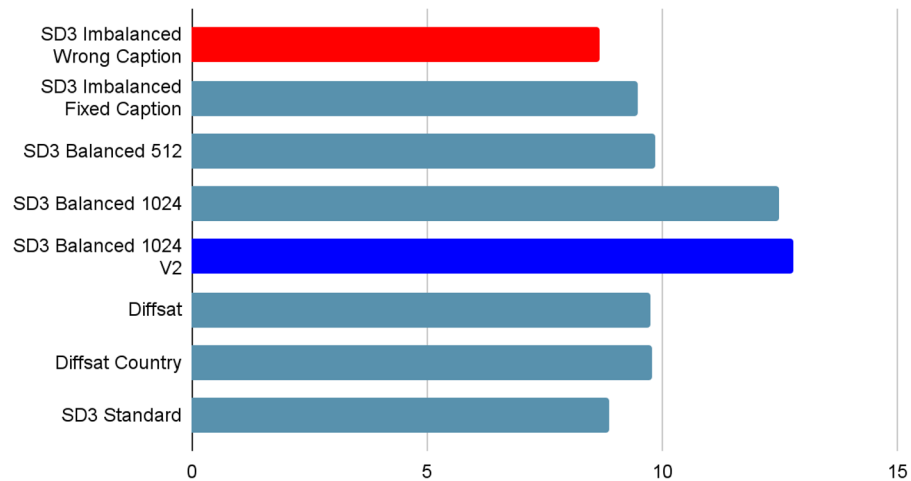
- **Purpose:** Measures perceptual similarity between two images.
- **Limitations:** Not as interpretable as metrics like PSNR or SSIM since it relies on neural network features, which can vary across networks.

Our results are much better than the baseline methods

SSIM

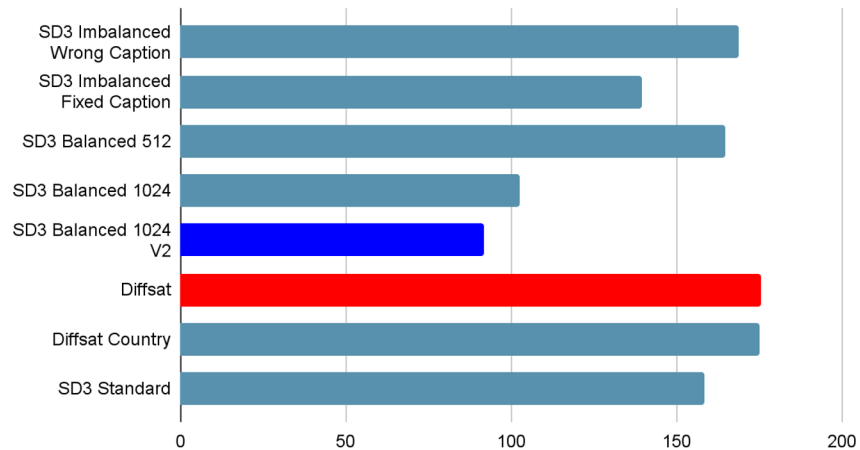


PSNR

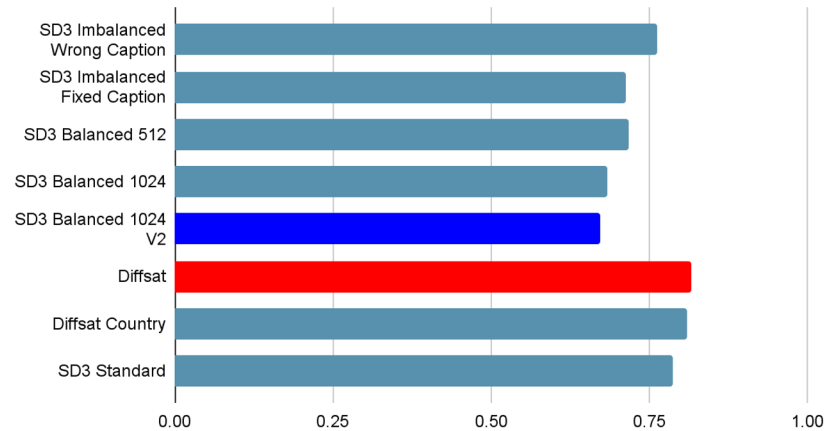


Our results are much better than the baseline methods

FID



LPIS



"prompt_short": "a satellite image of Open Shrublands in Eastern Cape, South Africa on September, 2017",

"prompt_long": "a satellite image of Open Shrublands in Eastern Cape, South Africa on September, 2017. The average temperature over the last month was 16.67 C with an average precipitation of 0.87 mm and an average daily solar radiation of 19.49 kWh/m2"

Ground Truth

1024_v1

1024_v2

