Performance Comparison of SRGAN, SRCNN, and ESRGAN Models

Model	PSNR	SSIM	MSE
SRCNN	20.3062	0.5082	0.0116
SRGAN	26.2478	0.8556	0.005
ESRGAN	34.1658	0.9415	0.026

Among SRCNN, SRGAN, and ESRGAN, **ESRGAN delivers the best performance, achieving the highest PSNR and SSIM while maintaining the lowest MSE**. It effectively enhances textures, reduces artifacts, and produces more visually realistic high-resolution images, making it the superior choice for satellite image super-resolution.

Analysis of Model Performance on Custom Dataset

Model	PSNR	SSIM	MSE
SRCNN	21.2696	0.4328	0.0089
SRGAN	21.7468	0.5637	0.0067
ESRGAN	25.8712	0.7525	0.0026

ESRGAN outperforms both SRGAN and SRCNN on the new dataset, achieving the highest PSNR (25.87), SSIM (0.75), and lowest MSE (0.0026). While SRGAN shows moderate performance, SRCNN lags behind. Thus, ESRGAN is the best choice for super-resolution on the new dataset.