

# CS 661: Big Data Visual Analytics: Assignment-4

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## 1 Comparative Study Table

Table 1: SNR and reconstruction time for different sampling percentages and methods

Sampling Percentage		Nearest		Linear	
		SNR	Time (s)	SNR	Time (s)
1%	Trial 1	33.73967	5.99321	38.47859	18.19247
	Trial 2	33.92375	6.14955	38.66258	18.59318
3%	Trial 1	35.23020	7.54586	39.89064	122.78452
	Trial 2	35.16665	7.13364	39.86394	108.59994
5%	Trial 1	35.79817	8.93774	40.55588	303.45171
	Trial 2	35.78080	7.70473	40.55275	285.56336

Table 1 Shows the signal-to-noise ratio (SNR) and reconstruction time for different sample percentages. As expected, the SNR value increases as the sample percentage is increased, indicating that the quality of the reconstructed image is higher when more data points are used. However, the reconstruction time also increases as the sample percentage is increased, which is a tradeoff between quality and speed.

## 2 Vizulization of dataset: Original and Reconstructed

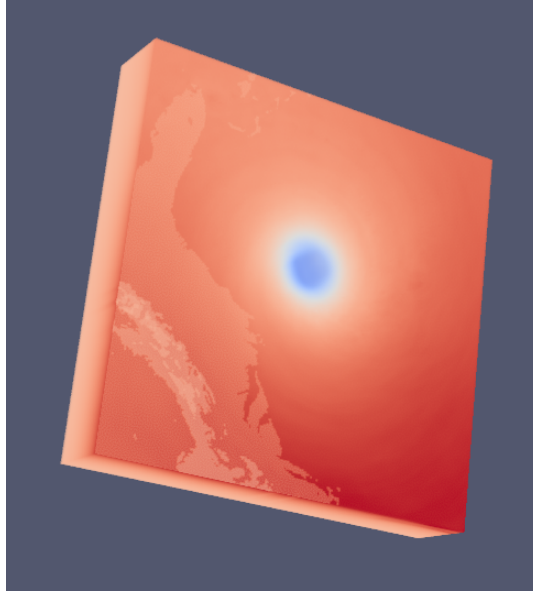


Figure 1: Original Dataset

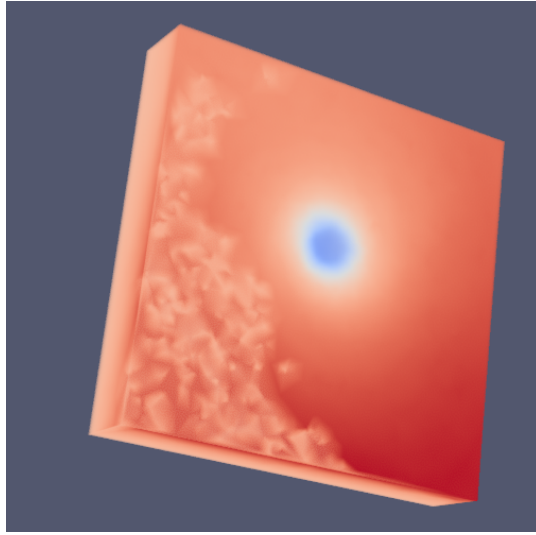


Figure 2: Linear Reconstructed Dataset: 1% sampled

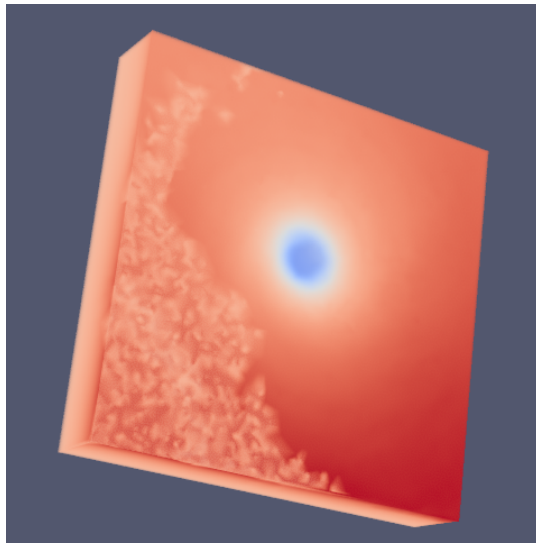


Figure 3: Linear Reconstructed Dataset: 3% sampled

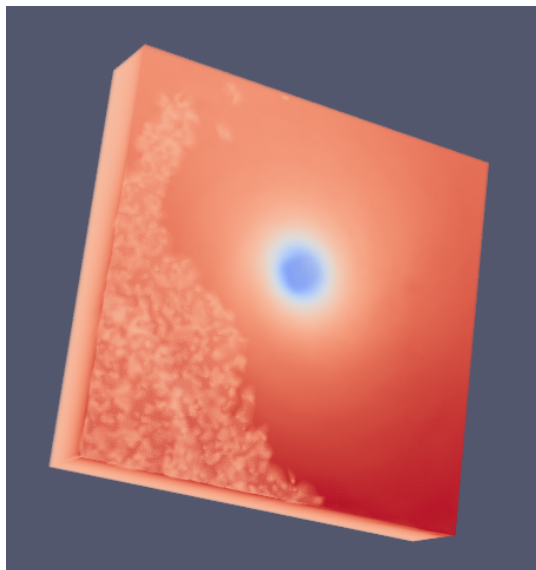


Figure 4: Linear Reconstructed Dataset: 5% sampled

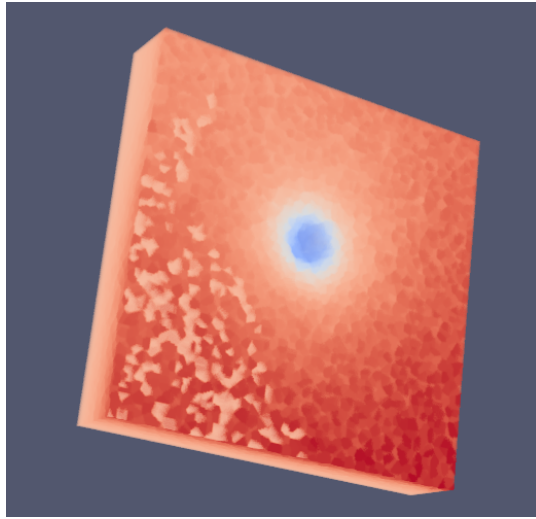


Figure 5: Nearest Reconstructed Dataset: 1% sampled

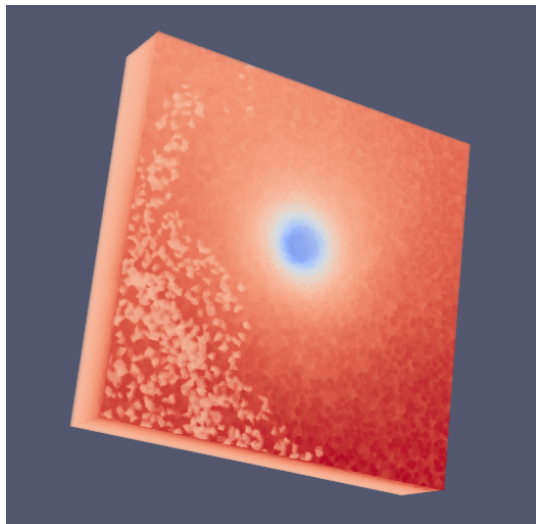


Figure 6: Nearest Reconstructed Dataset: 3% sampled

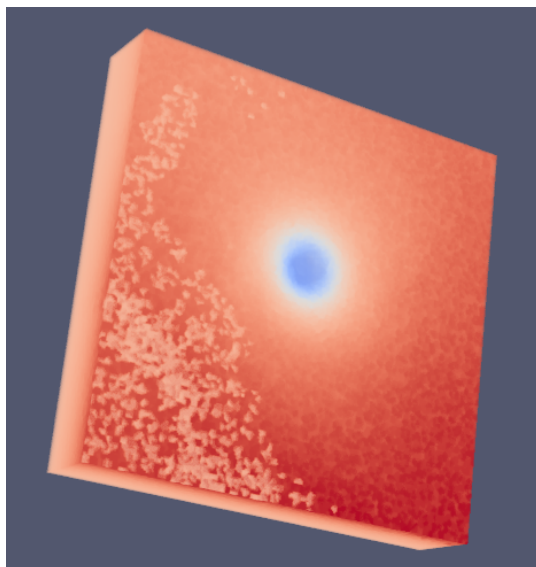


Figure 7: Nearest Reconstructed Dataset: 5% sampled