MVGamba: Unify 3D Content Generation as State Space Sequence Modeling

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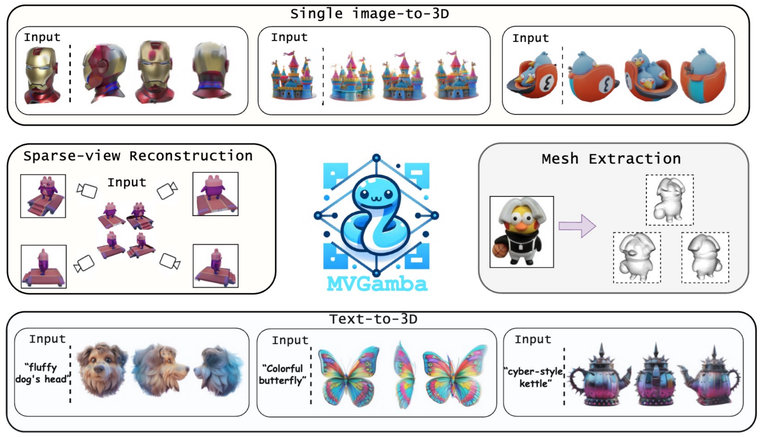
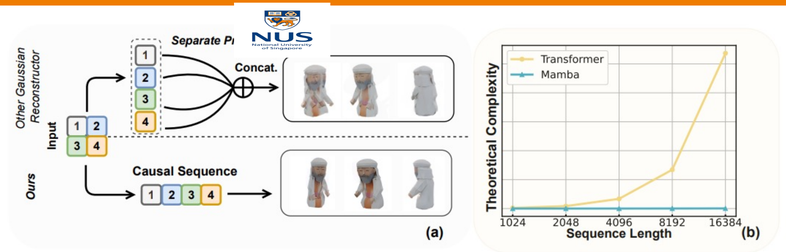
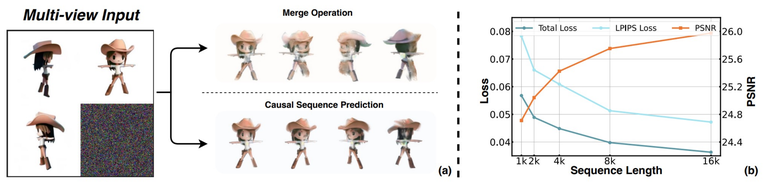
MVGamba



Motivation





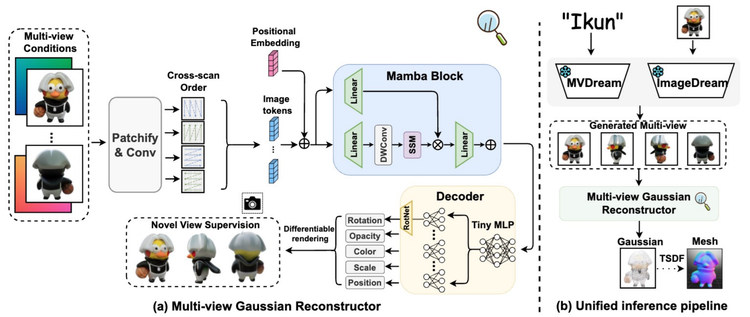
1. Previous works inevitably compromise the integrity of *multi-view information propagation* to manage *computational costs*.

2. The imperfect generation of multi-view images might be unavoidable bottom neck.

3. The computationally efficiency as well as Gaussian representation is far from perfect.

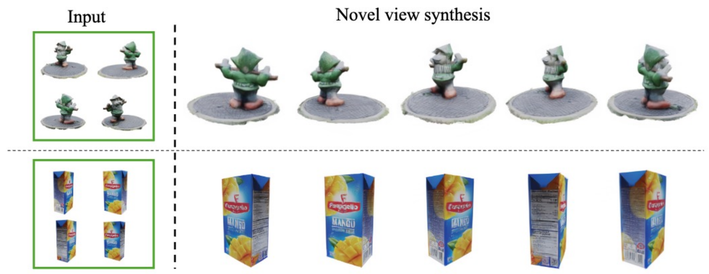
The crux is to generate the integrity of multi-view information while efficiently generating a sufficiently long sequence of Gaussians.

Methods



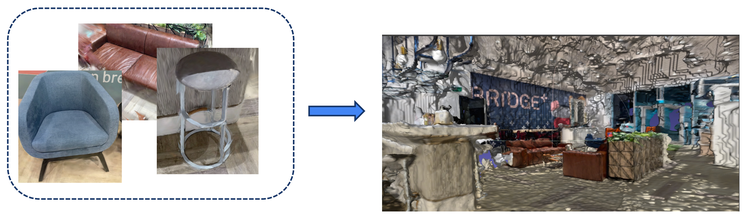
Experiement

Sparse-view Reconstruction



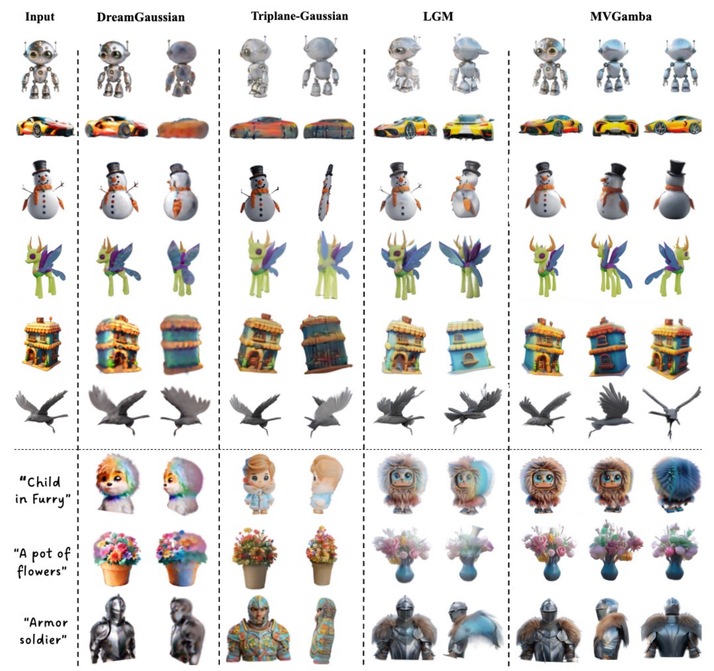
Method	#views	PSNR↑	LPIPS↓	SSIM↑	INF. Time↓	CD↓	VIoU↑
SparseGS [81]	16	22.19	0.162	0.775	34s	-	-
SparseNeuS [80]	16	23.17	0.130	0.814	6s	0.0566	0.3479
LGM [19]	4	24.20	0.112	0.845	0.07s	0.0198	0.4410
MVGamba	4	**26.25**	**0.069**	**0.881**	**0.03s**	**0.0132**	**0.4829**

Engine-friendly Interaction

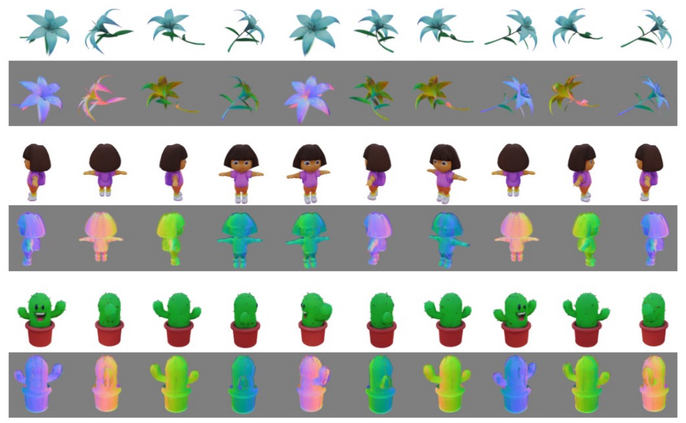


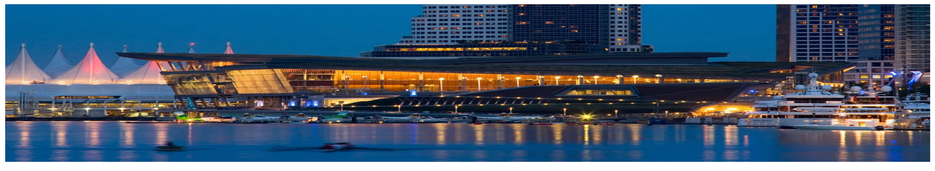
Experiement

Image / Text-to-3D Generation



Normal Map Generation





QR Code to Github Link:

QR Code to Paper Link: