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Learning to Take Directions One Step at a Time

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Taking Directions

FORWARD



BACKWARD

Video From a Motion Stroke Sequence



Proposed Framework



Proposed Framework



Proposed Framework



Results



Qualitative comparison with Hao et al. (2018) on the Robot Push dataset



Degradation in PSNR and SSIM over sequence length compared to Hao et al. (2018)

Generalization To Longer Sequences



The frames inside the yellow boundary are predicted beyond the training regime with 16 frames.

Motion Smoothness

	walking		jogging		running		det.
	mean	std	mean	std	mean	std	rate
Denton et al. [15]	7.5	10.0	9.9	11.9	10.7	11.5	54.2
Ours	7.4 7.2	9.1 7 . 7	10.1 8.2	9.1	8. 7 9.2	9.9 10.5	54.9 87.1
Ground truth	4.3	5.7	5.3	5.8	7.4	6.8	100.0

We compute the rel. mean Euclidean distance (%) and std. between pose joints in consecutive frames as metrics for smoothness and compare with with Denton et al. (2018) and Li et al. (2018).

Additional Resources

Paper

https://www.cvg.unibe.ch/media/publications/pdf/hu-icpr2020-directions.pdf

Supplementary material

https://www.cvg.unibe.ch/media/publications/pdf/hu-icpr2020-supplement.pdf

Code

https://github.com/HuQyang/learning-direction