

Compressed NeRF Architecture with Tensor Networks

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Neural Radiance Field (NeRF) is a well-known 3D reconstruction method capable of generating novel views of a target scene. NeRF model often employs a neural network trained by captured images to represent a 3D scene as a continuous function that maps a 3D coordinate and a view direction to color and density. In this work, we examine the potential of NeRF acceleration by replacing the MLP layers of a standard NeRF architecture with Matrix Product Operators (MPO). We show that our preliminary experiments with NeRF-MPO, our NeRF variant, can efficiently reduce model size with comparable performance, indicating the prospect of applying tensor networks to NeRF.

Primary authors: FUJIWARA, Haruo (Hakuhodo DY Holdings Inc.); NAGAI, Ryutaro (blueqat inc.); KATO, Hiroshi (Hakuhodo DY Holdings Inc.); MINATO, Yuichiro (blueqat inc.)

Presenters: FUJIWARA, Haruo (Hakuhodo DY Holdings Inc.); NAGAI, Ryutaro (blueqat inc.); KATO, Hiroshi (Hakuhodo DY Holdings Inc.)

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