

Supplementary Material for Large Pose 3D Face Reconstruction from a Single Image via Direct Volumetric CNN Regression

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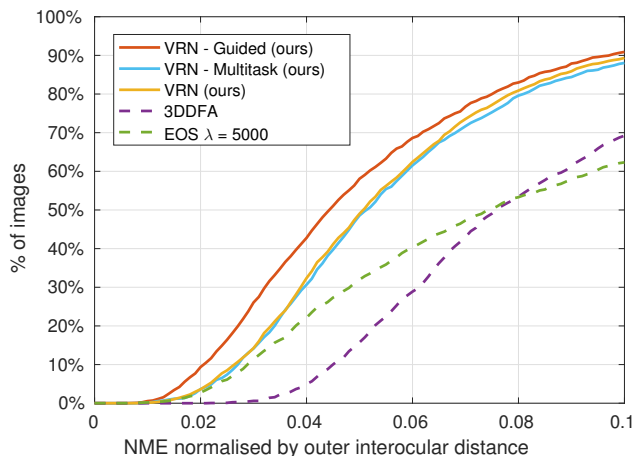


Figure 1: NME-based performance on the in-the-wild AFLW2000-3D dataset, where ICP has been used to remove the rigid transformation. The proposed *Volumetric Regression Networks*, and EOS and 3DDFA are compared.

1. Results with ICP Registration

We present results where ICP has been used not only to find the correspondence between the groundtruth and predicted vertices, but also to remove the rigid transformation between them. We find that this offers a marginal improvement to all methods. However, the relative performance remains mostly the same between each method. Results on AFLW2000 [5], BU4DFE [3] and Florence [1] can be seen in Figs. 1, 2 and 3 respectively. Numeric results can be found in Table 1.

2. Results on 300VW

To demonstrate that our method can work in unconstrained environments and video, we ran our *VRN - Guided* method on some of the more challenging Category C

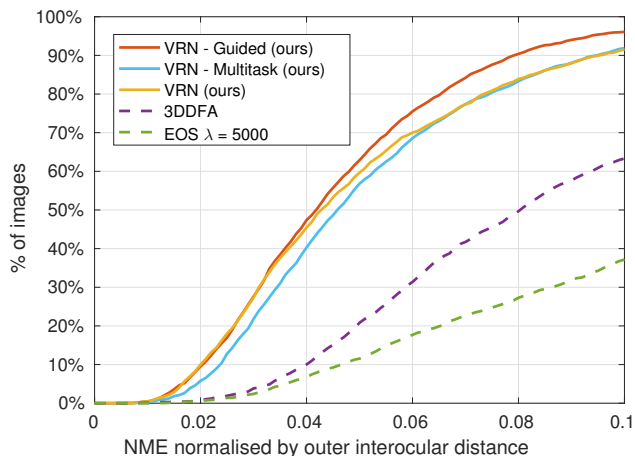


Figure 2: NME-based performance on our large pose and expression renderings of the BU4DFE dataset, where ICP has been used to remove the rigid transformation. The proposed *Volumetric Regression Networks*, and EOS and 3DDFA are compared.

Table 1: Reconstruction accuracy on AFLW2000-3D, BU4DFE and Florence in terms of NME where ICP has been used to remove the rigid transformation. Lower is better.

Method	AFLW2000	BU4DFE	Florence
VRN	0.0605	0.0514	0.0470
VRN - Multitask	0.0625	0.0533	0.0439
VRN - Guided	0.0543	0.0471	0.0429
3DDFA [5]	0.1012	0.1144	0.0784
EOS [2]	0.0890	0.1456	0.1200

footage from the 300VW [4] dataset. These videos are challenging usually for at least one of the following reasons: large pose, low quality video, heavy motion blurring and

