

# HeadEvolver: Text to Head Avatars via Expressive and Attribute-Preserving Mesh Deformation

## Supplementary Material

The supplementary material includes additional generation results and showcases applications such as text-guided geometry and texture editing. Our demonstration video includes more details and animated examples.

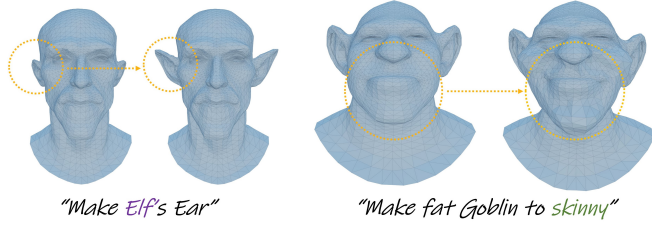


Figure 12. Examples of local geometry editing. Our framework uses per-vertex segmentation information (Figure 8), enabling text-based mesh editing to alter avatars' local features.



Figure 13. Example of attribute inheritance from FLAME [30]. If the input template mesh is from 3DMMs [4], users could manipulate the deformed mesh freely via morphable attributes such as expression and shape parameters.



Figure 14. More qualitative comparisons with recent methods that do not employ mesh representations for avatar generation.

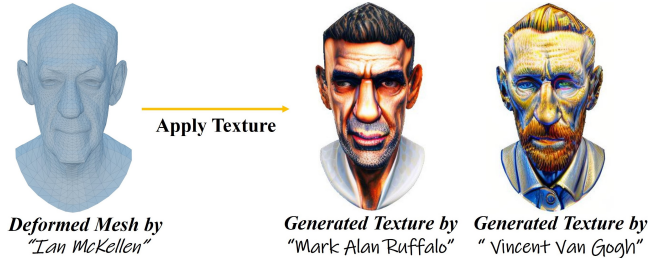


Figure 15. Examples of texture transfer. Since the UV coordinates of the input template mesh are well preserved, various generated texture maps can be directly applied to the generated mesh.



Figure 16. Example of text-based texture editing. With extra text prompts, our method supports texture editing in partial regions.

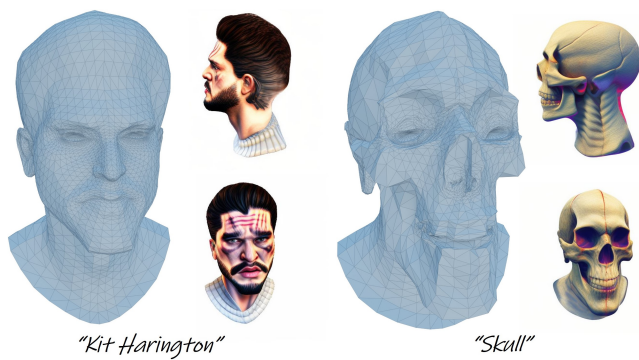


Figure 17. More representative generation results.

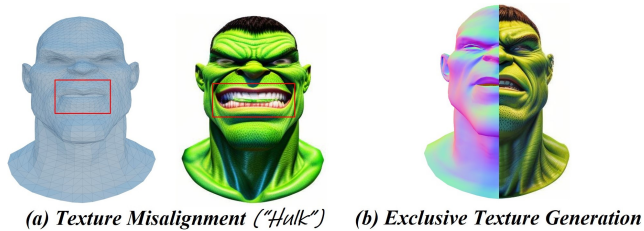


Figure 18. A limitation of our method. For exaggerated figures like “Hulk”, (a) though it does not impact further applications too much shown in Figure 1(c), perfect geometry-texture alignment is not guaranteed. (b) By fixing the geometry and solely applying texture optimizations, this artifact can be alleviated (e.g., Tex-Gen [22]).



Figure 19. Generated head avatars that can be manipulated (e.g., accessories) in graphics software without mesh post-processing.



Figure 20. Our deformation-based framework offers effective geometry consistency for further 3D applications.