

# Learning Dynamic Tetrahedra for High-Quality Talking Head Synthesis

## Supplementary Material

### 1. Limitations

As an original work, Dytet does face several challenges, such as effectively representing fine-grained textures like hairs and handling the driving of large deformations. These warrant the need for further research.

### 2. More Ablation

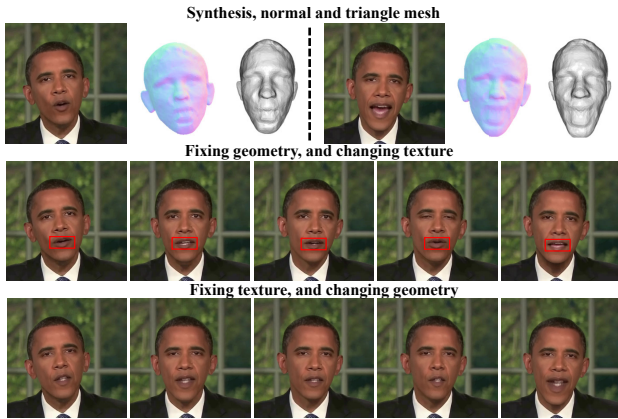


Figure 1. Effects of dynamic texture and geometry.

**Analyzing effects of dynamic texture and geometry on mouth movement.** We provide a comprehensive analysis in Fig. 1. From the meshes and images, it is evident that the geometry dictates the mouth boundary and size, while the dynamic texture primarily enhances the intricate details of the inner mouth, such as teeth and tongue. This design addresses the limitations of triangle meshes in representing complex topology and fine details.

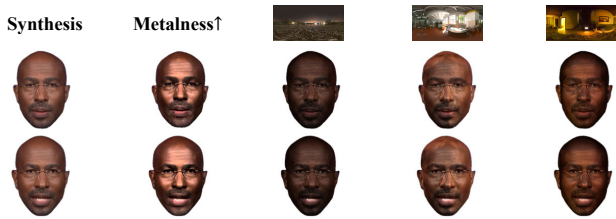


Figure 2. Editing material metalness, and relighting heads.

**Analyzing the material export and relighting abilities.** Thanks to the utilization of PBR materials and lighting models, editing talking heads becomes straightforward. As shown in Fig. 2, we can easily impart a metallic luster to heads by adding a positive value to the exported metalness factors, and relight heads using arbitrary HDRi maps.

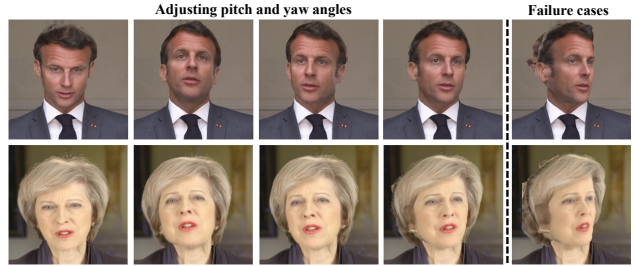


Figure 3. Novel view synthesis with poses beyond dataset.

**Analyzing the capability of novel view synthesis.** DynTet exhibits nice performance on this task. As depicted in Fig. 3, by first identifying the extreme Euler angles in the dataset, DynTet can generate realistic and consistent heads even when angles are beyond them. However, as the training data primarily includes frontal faces, artifacts may arise when generating the back of the head.

### 3. Supplementary Video

We provide comprehensive video results. Please refer to [https://youtu.be/Hahv5jy2w\\_E](https://youtu.be/Hahv5jy2w_E).