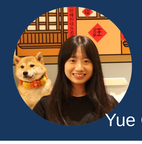
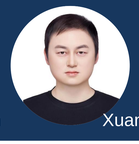
UV Volumes for Real-time Rendering of Editable Free-view Human Performance


Yue Chen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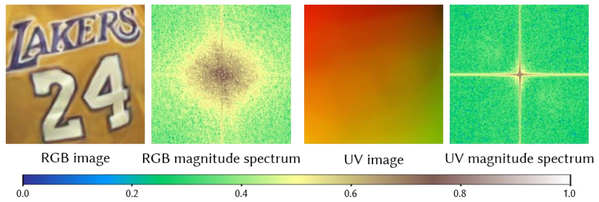
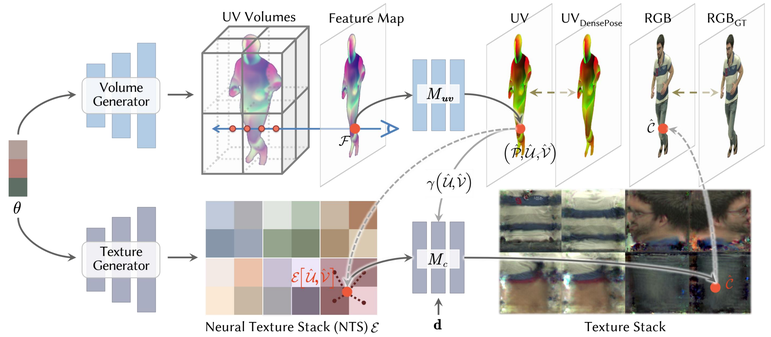
Motivation



- ✓ Modelling low-frequency UV in 3D
- ✓ Detailing high-frequency RGB in 2D
- ✓ Achieving real-time rendering and texture editing

Our Method



Decompose a dynamic human into 3D UV Volumes and a 2D texture

- **3D UV branch**: render a ray in UV volumes to get a UV coordinate
- **2D Texture branch**: query Neural Texture Stack to predict RGB

Texture Editing

UV Supervision

Given *noisy UV and semantic labels*, we can recover *proper UV volumes* under *photometric constraints*.

Dynamic Novel View Synthesis

https://fanegg.github.io/UV-Volumes/

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