# Synthetic to Authentic:

## Transferring Realism to 3D Face Renderings for Boosting Face Recognition

Parsa Rahimi

# Why we are here?

- Gathering **Large Identity Labeled** face images required for training Face Recognition (FR) systems is **difficult**.
    - **Tens of thousands** of identities
    - Each **10** to **100** number of variations

- It is rigged with **privacy** and **ethical** concerns
- Synthetic Data for **LLMs**, Computer Vision and …

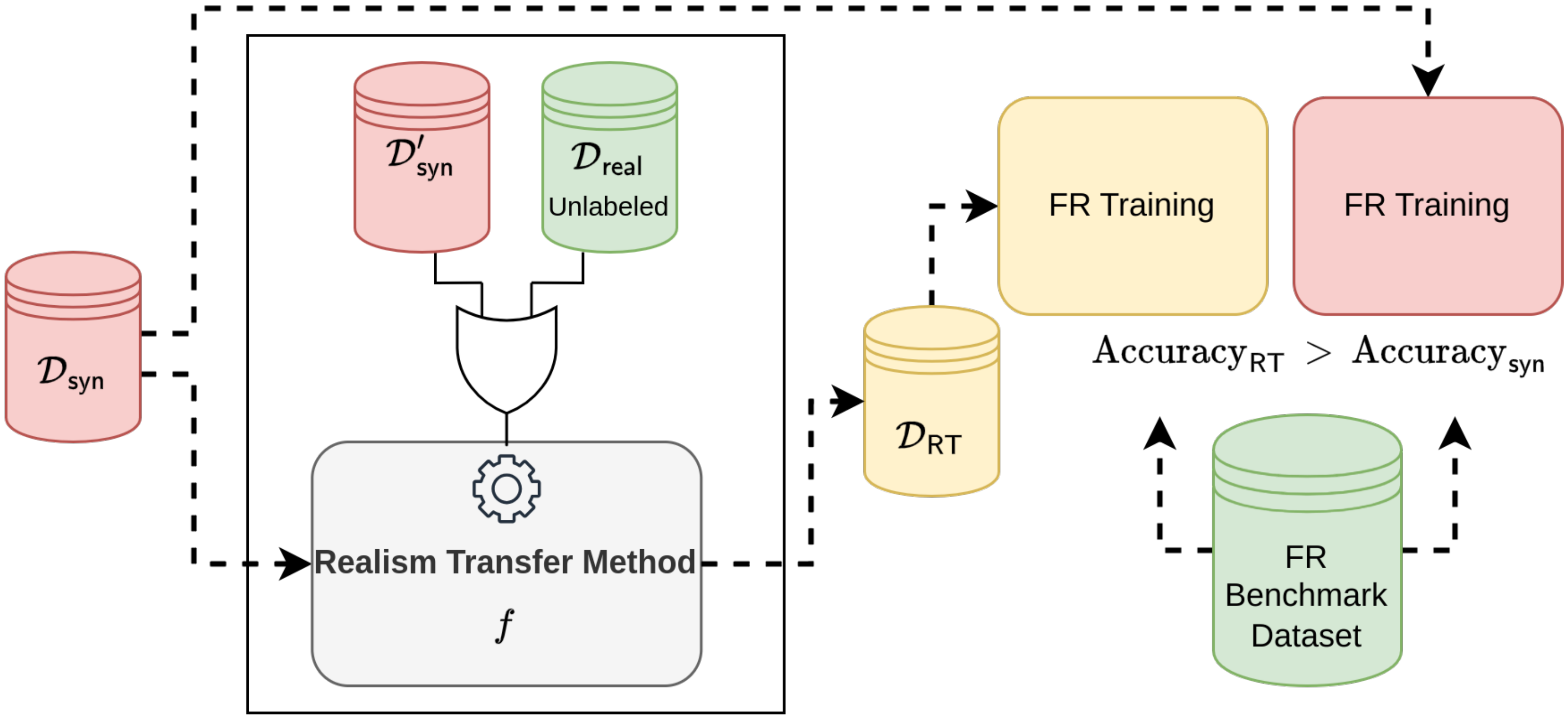
Rahimi, Parsa, et al. 'Synthetic to Authentic: Transferring Realism to 3D Face Renderings for Boosting Face Recognition'. *European Conference on Computer Vision Workshops*, 2024.

# 3D-Rendered Face Dataset for FR

- DigiFace1M contains ~1.2M images of 110k identities randomly accessorized and rendered in different lighting, expressions, and poses.

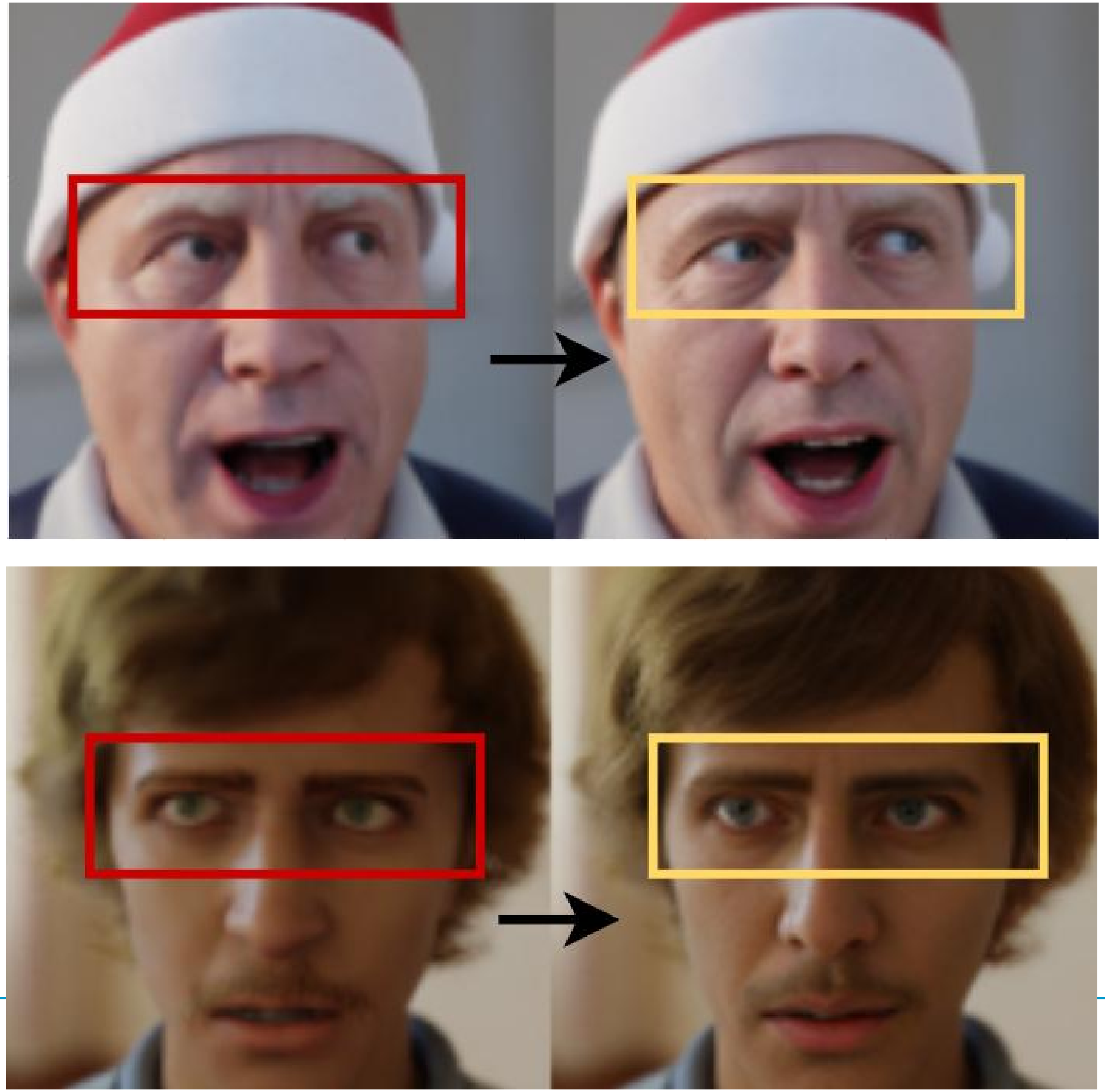
Bae, Gwangbin, et al. "Digiface-1m: 1 million digital face images for face recognition." Proceedings of the IEEE/CVF Winter Conference on Applications of Computer Vision. 2023.

# Overview



$\mathcal{D}'_{\text{syn}}$
$\mathcal{D}_{\text{real}}$
Unlabeled
$\mathcal{D}_{\text{syn}}$
Realism Transfer Method
$f$
$\mathcal{D}_{\text{RT}}$
FR Training
FR Training
$\text{Accuracy}_{\text{RT}} > \text{Accuracy}_{\text{syn}}$
FR
Benchmark
Dataset

# Closer Look



# Thank you!