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AI Generated Content

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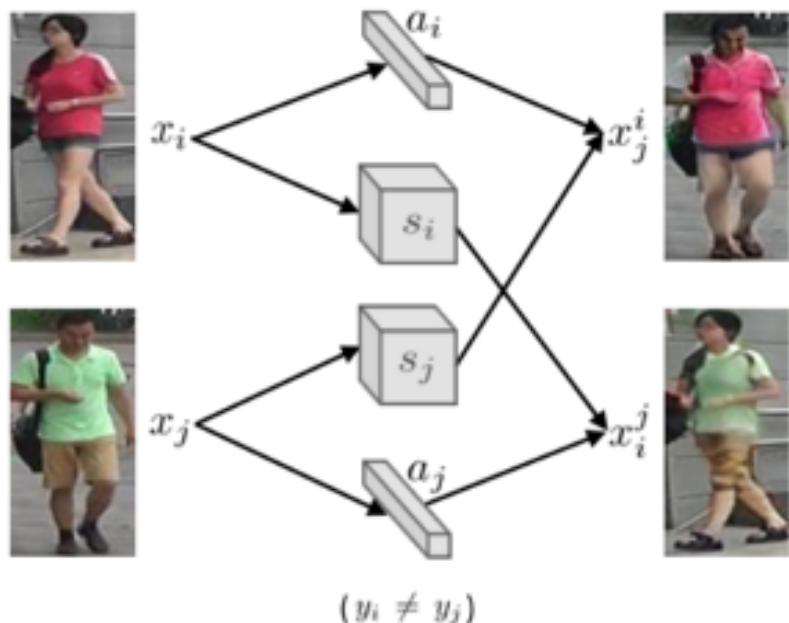
Three core directions

- 1.Image Generation**
- 2.Video Generation**
- 3.3D Generation**



Pedestrian Generation

[Question-driven]: In the field of security, due to the difficulty of privacy policy and annotation, it is impossible to collect enough data to train the model. The difficulty lies in diversity and authenticity.

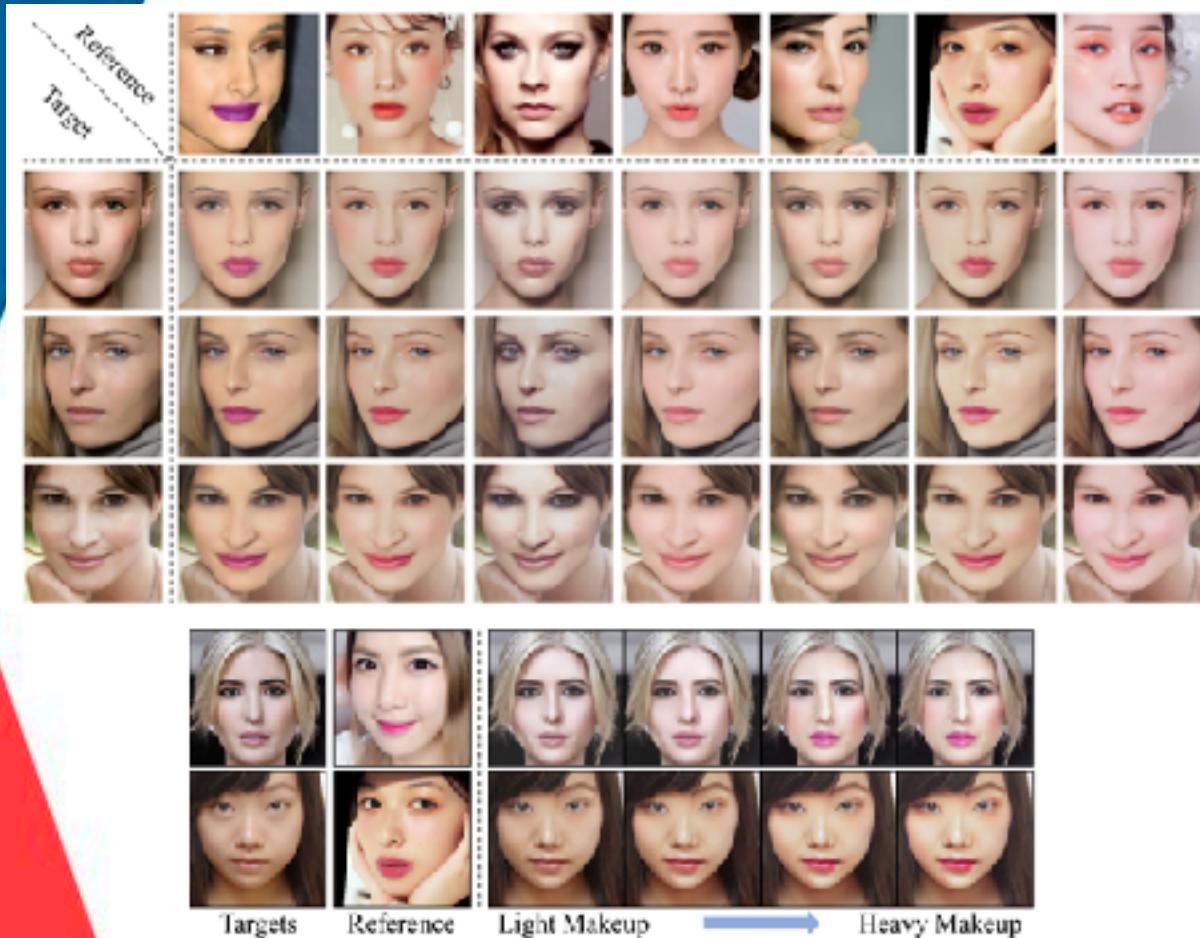


“New” Image Generation (CVPR’19)



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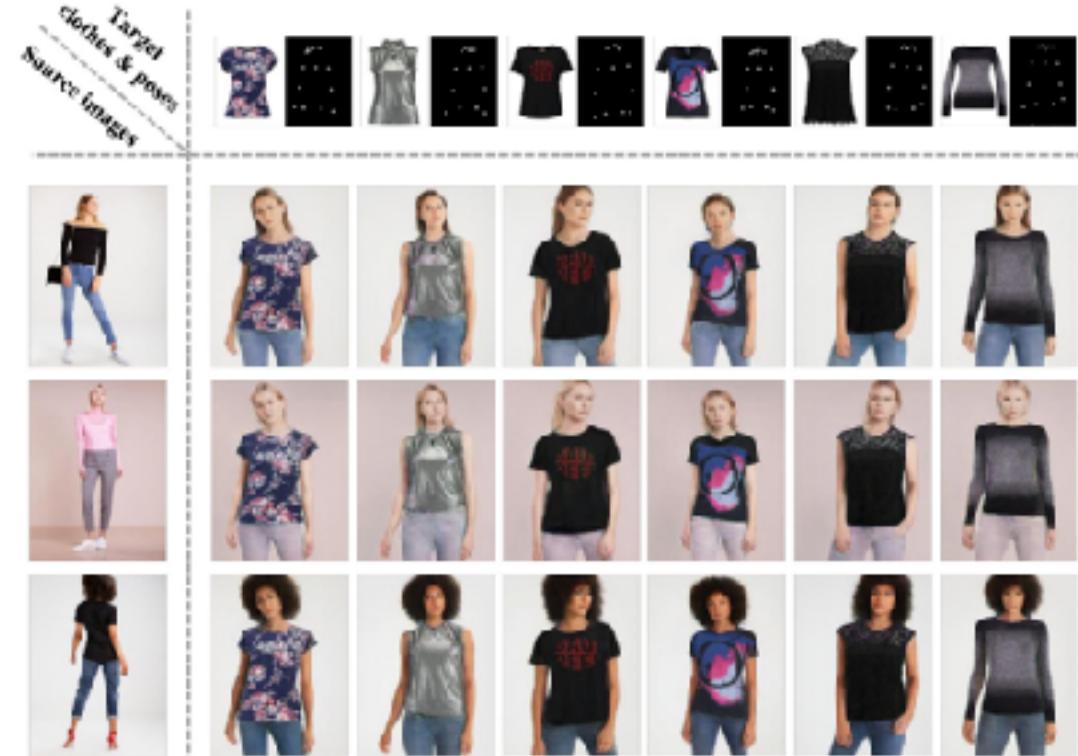
Swap Generation



Automatic Makeup (IJCAI'20)

Real-World Automatic Makeup via Identity Preservation Makeup Net. IJCAI'20

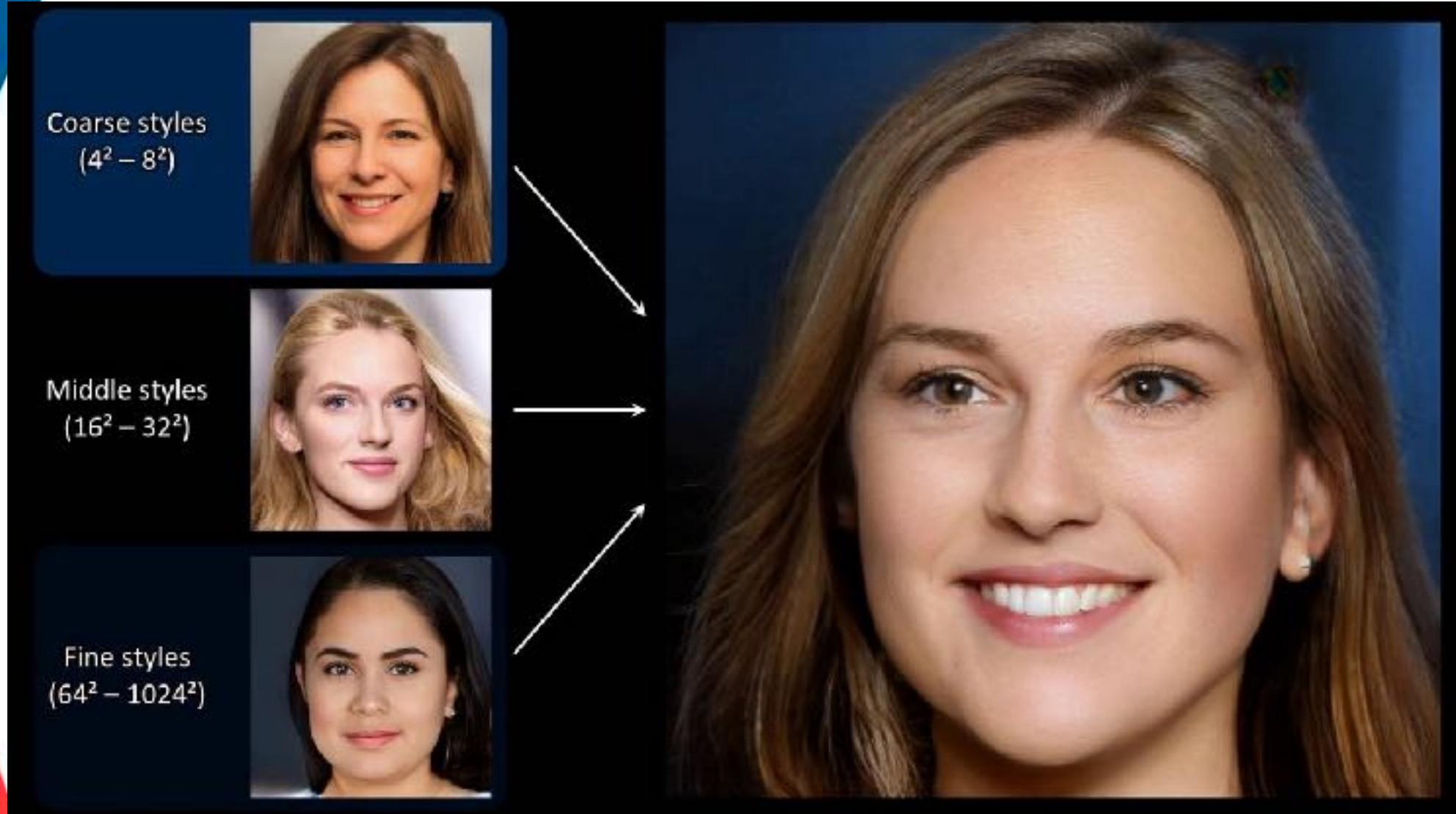
Spg-vton: Semantic prediction guidance for multi-pose virtual try-on. TMM'22



Virtual Try-on (TMM'22)



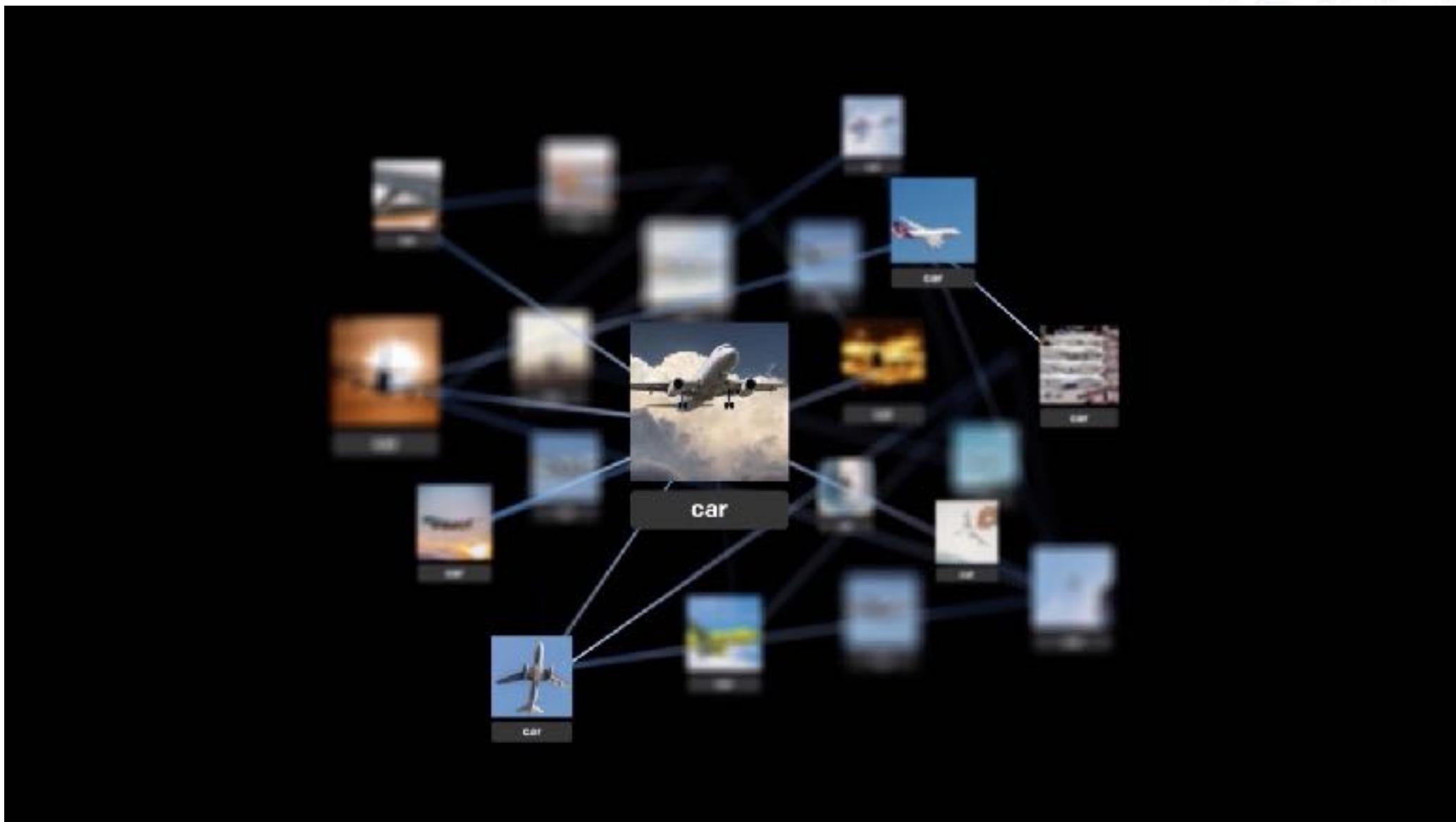
Fine-grained Face Generation





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Three core directions

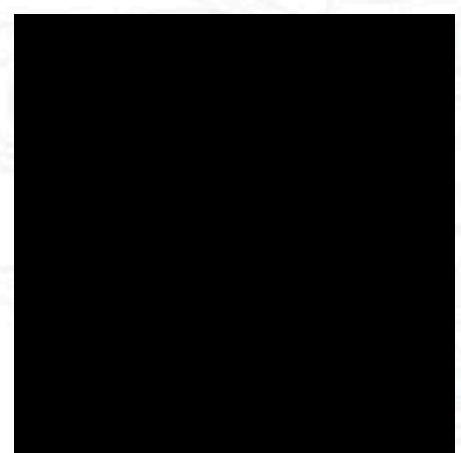
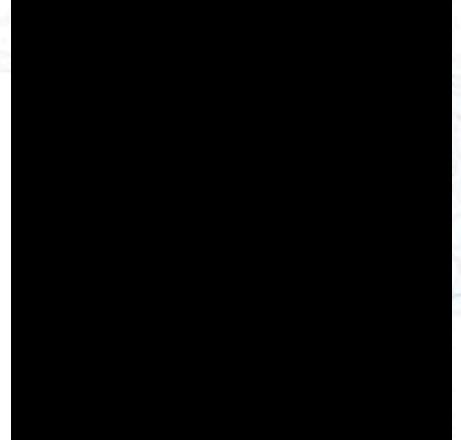
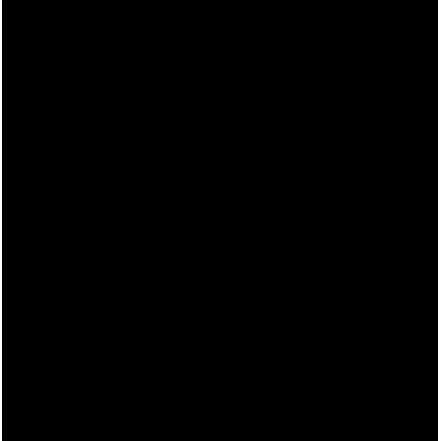
- 1.Image Generation**
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- 3.3D Generation**





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Art Generation



Domain-Agnostic Neural Oil Painting via Normalization Affine Test-Time Adaptation. ACM MM'25



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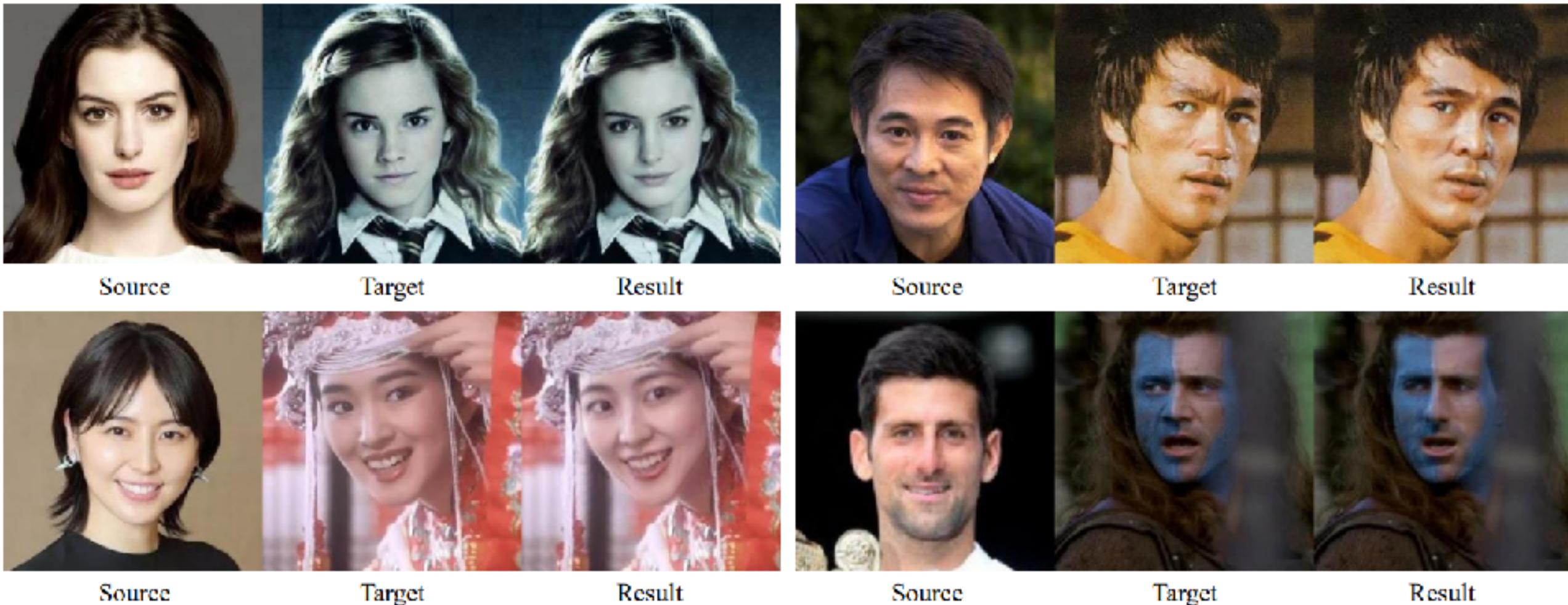
Video Generation (More Images)





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Video Generation (More Images)





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Video Generation





Video Generation





Video Generation

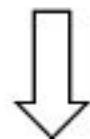
Source Image



Driving Video



+



TPSMM



Ours



Sign Lanugage (TOMM'24)



Video Generation

Drone-view videos for matching with satellite and street-view images.





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Video Generation





Midjourney - v1

Wan 2.5 (by Alibaba)

<https://www.youtube.com/watch?v=E9PvSelO5NY>

<https://www.youtube.com/watch?v=E7eWvr-RvwM>

(2 minutes for 1 video)

<https://create.wan.video/>



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3D Object Generation

Using text / 2D to generate 3D object prototype.



Text-driven 3D Generation (2023)

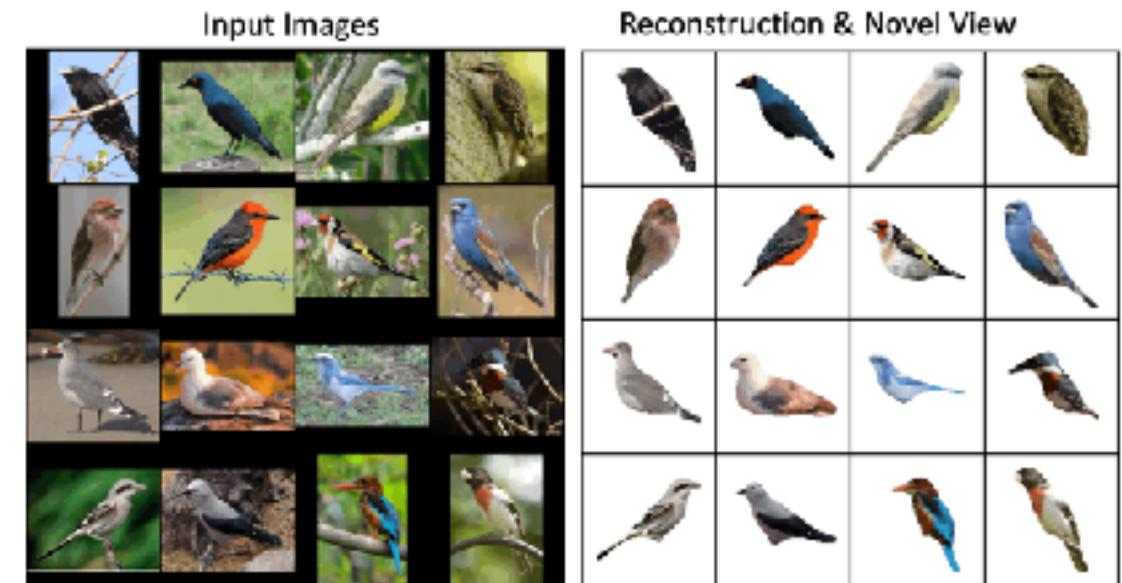


Image-driven 3D reconstruction (2022)

Progressive Text-to-3D Generation for Automatic 3D Prototyping. ArXiv'23

3D Magic Mirror: Clothing Reconstruction from a Single Image via a Causal Perspective. ArXiv'22



Point-E



"a dog wearing a red santa hat"



"a multi-layered rainbow pumpkin"



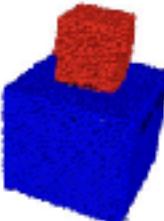
"an elaborate french cake"



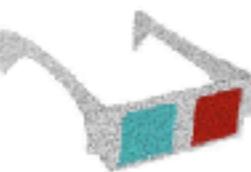
"a traffic cone"



"a vase of purple flowers"



"a small red cube is sitting on top of a huge blue cube, red on top, blue on bottom"



"a pair of 3D glasses, left lens is red right is blue"



"an mondo chair, a chair imitating an avocado"



"a pair of purple headphones"



"a yellow rubber duck"



"a red mug filled with coffee"



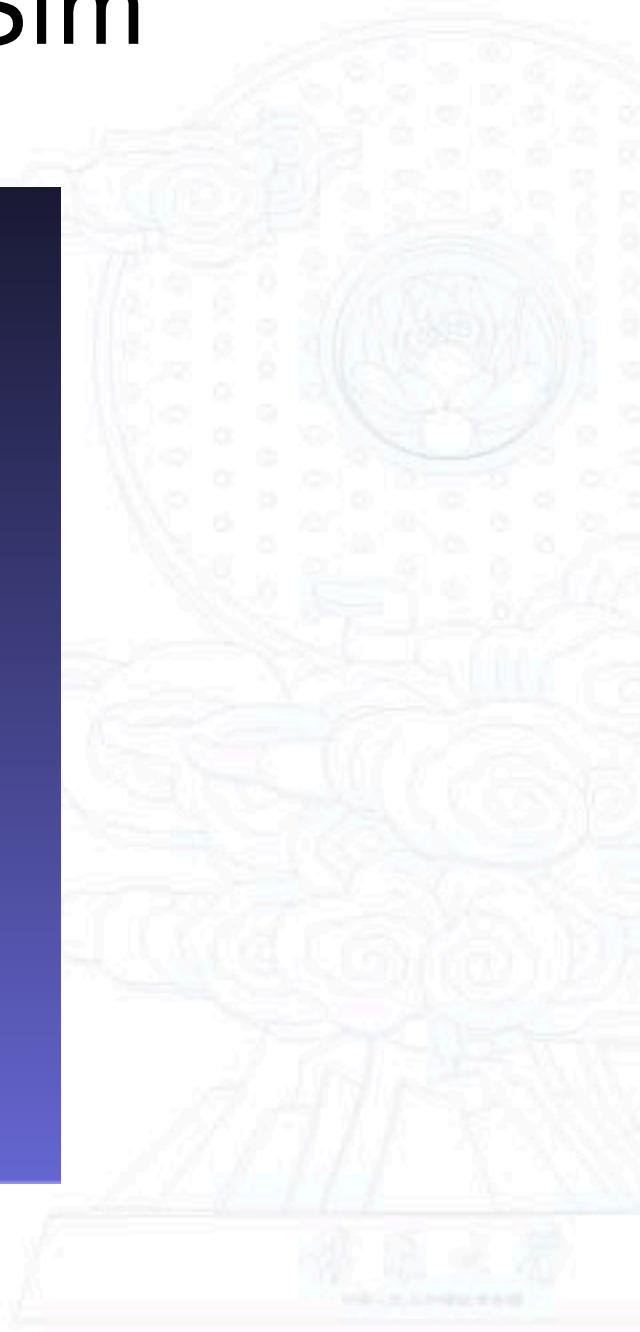
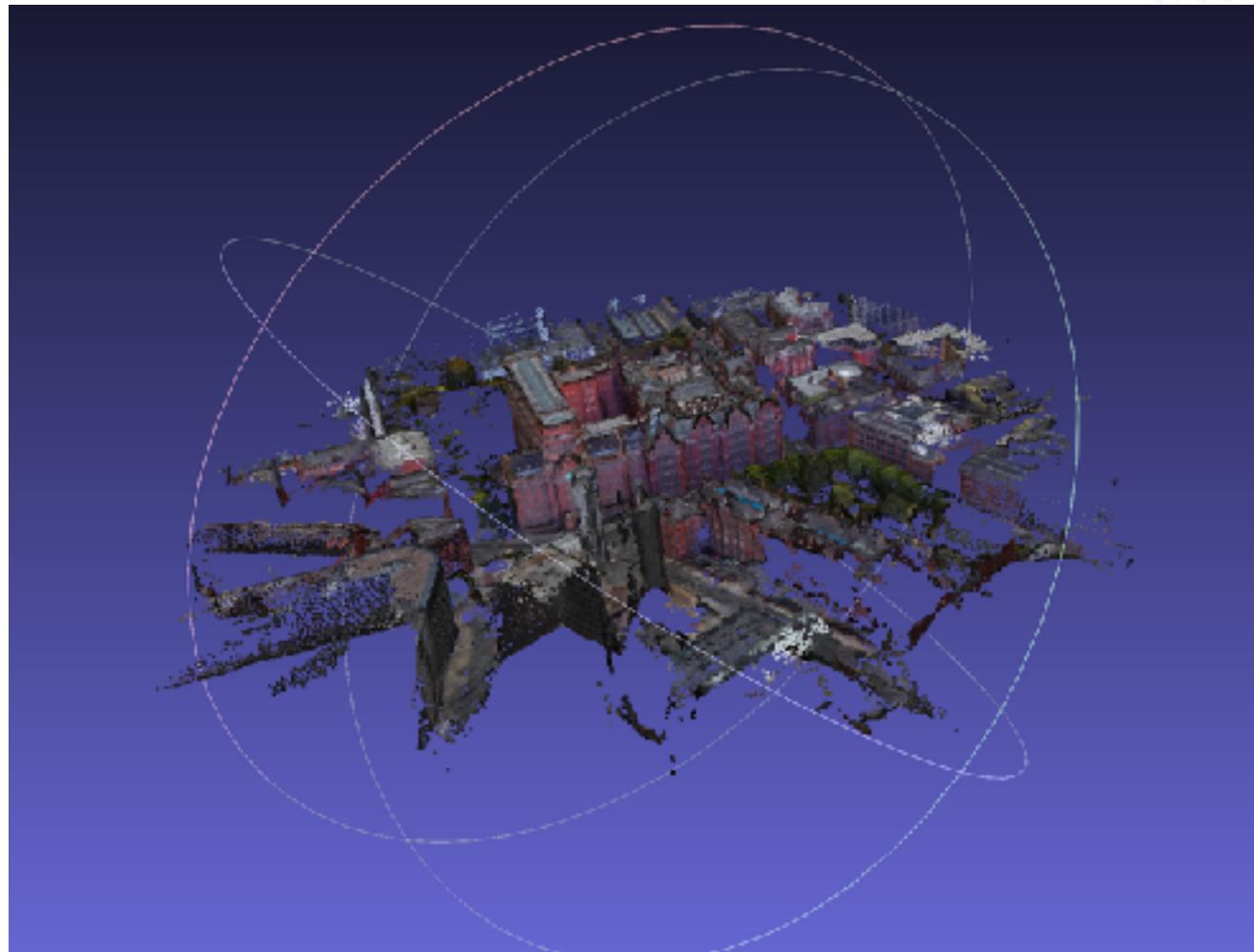
"a humanoid robot with a round head"





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Scene Reconstruction via Sfm





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Discussion: Memorize or Generate?



If they can create some new unrealistic things

Size



Rene Magritte, *The Listening Room*

Interposition



Position, Probability, Size





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AI can write poems

AI want to write poems

Are different!



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Thank You!

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