Yunfan Liu

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EDUCATION

University of Chinese Academy of Sciences **Aug. 2019 – July 2023 (Expected)**

- **Ph.D.**, School of Artificial Intelligence GPA: 87/100
- **Thesis:** Towards Data and Knowledge-driven Face Image Editing, **Advisor:** Prof. Tieniu Tan

University of Michigan, Ann Arbor **Aug. 2015 – April 2017**

- **M.S.**, Department of Electronic Engineering and Computer Science GPA: 3.80/4.00

Tsinghua University **Aug. 2011 – July 2015**

- **B.Eng.**, Department of Electronic Engineering GPA: 91/100

WORK EXPERIENCE

Institute of Automation, Chinese Academy of Sciences **May 2017 – July 2019**

- Investigated the GAN-based face age editing problem, and outcomes have been accepted by CVPR and AAAI.
- Developed a real-time face detection and facial landmark localization application on Android based on ncnn framework.
- Coauthored documents for the Science and Technology Program of Beijing and National Key R&D Program of China.

SELECTED PUBLICATION

- **Yunfan Liu**[*], Qi Li[*], and Zhenan Sun. Attribute-aware face aging with wavelet-based generative adversarial networks. In *IEEE/CVF Conference on Computer Vision and Pattern Recognition* (**CVPR**), 2019. (**CCF-A Conference**)
- Qi Li[*], **Yunfan Liu**[*], and Zhenan Sun. Age progression and regression with spatial attention modules. In *Proceedings of the AAAI Conference on Artificial Intelligence* (**AAAI, Oral**), 2020. (**CCF-A Conference,** *Responsibility: proposing solution, establishing framework, debugging program, writing manuscript*)
- **Yunfan Liu**, Qi Li, Zhenan Sun, Tieniu Tan. A^3GAN: An Attribute-Aware Attentive Generative Adversarial Network for Face Aging. In *IEEE Transactions on Information Forensics and Security* (**TIFS**), 2021. (**JCR-1 Journal**)
- **Yunfan Liu**, Qi Li, Qiyao Deng, Zhenan Sun. Towards Spatially Disentangled Manipulation of Face Images with Pre-trained StyleGANs. *Submitted to IEEE Transactions on Circuits and Systems for Video Technology* (**TCSVT**), 2022. (**JCR-1 Journal**, **Major Revision**)
- **Yunfan Liu**, Qi Li, Qiyao Deng, Zhenan Sun. GAN-based Facial Attribute Manipulation: A Survey. *Submitted to IEEE Transactions on Pattern Analysis and Machine Intelligence* (**TPAMI**), 2022. (**JCR-1 Journal, In Peer Review**)

SELECTED RESEACH PROJECTS

Facial Attribute Manipulation based on Generative Adversarial Networks (GANs)

- Proposed a GAN-based model for age progression, which involves attribute annotations to improve perceptual consistency.
- Built a face age editing model based on spatial attention mechanism, which enables accurate manipulation of input images.
- Developed an algorithm based on pre-trained style-based generators for facial attribute editing on high-resolution images.
- Authored a systematic and comprehensive literature review on existing GAN-based facial attribute manipulation methods.

One-shot Face Re-enactment based on Dense Correspondence Field Estimation

- Designed a module for 3DMM parameter fitting, which enables the decomposition of face shape, expression, and texture.
- Developed a dense correspondence estimation module to approach face re-enactment results by warping input images.
- Conducted experiments on datasets including FF++, VoxCeleb, and Celeb-DF to verify the effectiveness of our method.

Face Anonymization based on Identity Information Distillation

- Investigated existing studies on face anonymization, and summarize main ideas as well as important issues to be solved.
- Designed an identity information distillation method to extract representative features for eliminating personal characteristic.

RELEVANT INFORMATION

- **Academic Service:** Reviewer for CVPR, ECCV, AAAI, TIFS, and TCSVT
- **Technical Skill:** Proficient with Python (PyTorch) and MATLAB; familiar with C/C++
- **English Usage:** TOFEL: 114/120 (Speaking: 28/30); GRE: Verbal 161 (88%) + Quantitative 170 (97%) + AW 3.5 (42%)