Yichun Shi

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Industry Experience

Senior Research Scientist, Generative AI, ByteDance (Tiktok) 2021 - Present

- Co-lead the project on unified image editing, where we developed the first generic editing model that is applied in multiple ByteDance apps.
- Initiated the project on 3D generation, where I first proposed multi-view diffusion models for 3D generation that has been widely used in current 3D generation models.
  - https://mv-dream.github.io
  - https://image-dream.github.io
- Various research projects and products on image synthesis, editing, image-to-video generation.

Computer Vision | Generative Model | AIGC

Research Intern, NEC Lab of America May 2019 - Aug 2019

Developing a universal face representation model that could be used to recognize unconstrained faces.

Face Recognition | Data Augmentation | Representation Learning

Research Intern, Visa Inc. May 2018 - Aug 2018

Research on document face recognition.

Image Synthesis | Pattern Recognition

Education

Ph.D. Computer Science 2016 - 2021

Michigan State University
Supervisor : Anil K. Jain

B.S. Computer Science 2012 - 2016

Shanghai Jiao Tong University
IEEE Honored Class

Publications

[1] G. Song, H. Xu, J. Liu, T. Zhi, **Y. Shi**, J. Zhang, Z. Jiang, J. Feng, S. Sang, and L. Luo, "Agilegan3d : Few-shot 3d portrait stylization by augmented transfer learning," in *CVPR Workshops*, 2024.

[2] Y. Gu, H. Xu, Y. Xie, G. Song, **Y. Shi**, D. Chang, J. Yang, and L. Luo, "Diffportrait3d : Controllable diffusion for zero-shot portrait view synthesis," in *CVPR*, 2024.

[3] Y. Xie, H. Xu, G. Song, C. Wang, **Y. Shi**, and L. Luo, "X-portrait : Expressive portrait animation with hierarchical motion attention," in *SIGGRAPH*, 2024.

[4] F. Yang, J. Zhang, **Y. Shi**, B. Chen, C. Zhang, H. Zhang, X. Yang, J. Feng, and G. Lin, "Magic-boost : Boost 3d generation with mutli-view conditioned diffusion," *arXiv:2404.06429*, 2024.

[5] M. Hui, S. Yang, B. Zhao, **Y. Shi**, H. Wang, P. Wang, Y. Zhou, and C. Xie, "Hq-edit : A high-quality dataset for instruction-based image editing," *arXiv:2404.09990*, 2024.

[6] S. Kim, K. Li, X. Deng, **Y. Shi**, M. Cho, and P. Wang, "Enhancing 3d fidelity of text-to-3d using cross-view correspondences," in *CVPR*, 2024.

[7] J. Ye, P. Wang, K. Li, **Y. Shi**, and H. Wang, "Consistent-1-to-3 : Consistent image to 3d view synthesis via geometry-aware diffusion models," in *3DV*, 2024.

[8] P. Wang and **Y. Shi**, "Imagedream : Image-prompt multi-view diffusion for 3d generation," *arXiv:2312.02201*, 2023.

[9] **Y. Shi**, P. Wang, J. Ye, L. Mai, K. Li, and X. Yang, "MVDream : Multi-view diffusion for 3d generation," *ICLR*, 2024.

[10] S. An, H. Xu, **Y. Shi**, G. Song, U. Y. Ogras, and L. Luo, "Panohead : Geometry-aware 3d full-head synthesis in 360deg," in *CVPR*, 2023.

[11] S. Chen, K. Zhang, **Y. Shi**, H. Wang, Y. Zhu, G. Song, S. An, J. Kristjansson, X. Yang, and M. Zwicker, "Panic-3d : Stylized single-view 3d reconstruction from portraits of anime characters," in *CVPR*, 2023.

[12] G. Song, H. Xu, J. Liu, T. Zhi, **Y. Shi**, J. Zhang, Z. Jiang, J. Feng, S. Sang, and L. Luo, "Agilegan3d : Few-shot 3d portrait stylization by augmented transfer learning," *arXiv:2303.14297*, 2023.

[13] J. Zhang, Z. Jiang, D. Yang, H. Xu, **Y. Shi**, G. Song, Z. Xu, X. Wang, and J. Feng, "Avatargen : a 3d generative model for animatable human avatars," in *ECCV Workshops*, 2023.

[14] H. Xu, G. Song, Z. Jiang, J. Zhang, **Y. Shi**, J. Liu, W. Ma, J. Feng, and L. Luo, "Omniavatar : Geometry-guided controllable 3d head synthesis," in *CVPR*, 2023.

[15] L. Zhang, X. Lei, **Y. Shi**, H. Huang, and C. Chen, "Federated learning for iot devices with domain generalization," *IEEE Internet of Things Journal*, 2023.

[16] J. Sun, X. Wang, **Y. Shi**, L. Wang, J. Wang, and Y. Liu, "Ide-3d : Interactive disentangled editing for high-resolution 3d-aware portrait synthesis," *ACM Transactions on Graphics (TOG)*, 2022.

[17] **Y. Shi**, X. Yang, Y. Wan, and X. Shen, "Semanticstylegan : Learning compositional generative priors for controllable image synthesis and editing," in *CVPR*, 2022.

[18] X. Zhou, X. Lei, C. Yang, **Y. Shi**, X. Zhang, and J. Shi, "Handling data heterogeneity in federated learning via knowledge fusion," *arXiv:2207.11447*, 2022.

[19] **Y. Shi**, D. Aggarwal, and A. K. Jain, "Lifting 2d stylegan for 3d-aware face generation," in *CVPR*, 2021.

[20] **Y. Shi** and A. K. Jain, "Boosting unconstrained face recognition with auxiliary unlabeled data," in *CVPR Workshops*, 2021.

[21] **Y. Shi**, X. Yu, K. Sohn, M. Chandraker, and A. K. Jain, "Towards universal representation learning for deep face recognition," in *CVPR*, 2020.

[22] S. Gong, **Y. Shi**, and A. Jain, "Low quality video face recognition : Multi-mode aggregation recurrent network (marn)," in *CVPR Workshops*, 2019.

[23] **Y. Shi** and A. K. Jain, "Probabilistic face embeddings," in *ICCV*, 2019.

[24] S. Gong, Y. Shi, N. D. Kalka, and A. K. Jain, "Video face recognition : Component-wise feature aggregation network (c-fan)," in *ICB*, 2019.

[25] **Y. Shi**, D. Deb, and A. K. Jain, "Warpgan : Automatic caricature generation," in *CVPR*, 2019.

[26] **Y. Shi** and A. K. Jain, "Docface+ : Id document to selfie matching," *Trans. on Biometrics, Behavior, and Identity Science (T-BIOM)*, 2019.

[27] D. Deb, S. Wiper, S. Gong, **Y. Shi**, C. Tymoszek, A. Fletcher, and A. K. Jain, "Face recognition : Primates in the wild," in *Conf. on Biometrics Theory, Applications and Systems (BTAS)*, 2019.

[28] **Y. Shi** and A. K. Jain, "Docface : Matching id document photos to selfies," in *Conf. on Biometrics Theory, Applications and Systems (BTAS)*, 2019.

[29] **Y. Shi** and A. Jain, "Improving face recognition by exploring local features with visual attention," in *ICB*, 2018.

[30] **Y. Shi**, C. Otto, and A. K. Jain, "Face clustering : representation and pairwise constraints," *Trans. on Information Forensics and Security (TIFS)*, 2018.

Academic Service

I have served as a reviewer for CVPR, ICCV, SIGGRAPH, AAAI, WACV, TPAMI, TIP, TVCG, TIFS, Signal Processing, etc.