

Duan Gao (高端)

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Education

- [2017.9 ~ 2022.6] Tsinghua University, Ph.D., Computer Science
Advised by Prof. Kun Xu
Research interests: Computer Graphics (Appearance modeling, physically-based rendering and neural rendering)
- [2012.9 ~ 2017.6] Nanjing University, B.A., Computer Science
Advised by Prof. Jie Guo
Research interests: Computer Graphics
 - 2012.9 ~ 2014.9, Nanjing University, Life Science
 - 2014.9 ~ 2017.6, Nanjing University, Computer Science

Experience

- 3D Generation Algorithm Engineer @X Square Robot, 2025 ~ Present
3D generation algorithm engineering and system development for embodied robotics applications.
- Principal Engineer, Top Minds(天才少年) @Huawei Cloud, Media Innovation Lab, 2022 ~ 2025
Generative 3D digital humans, Diffusion-based Physically-based material generation, AIGC-3D, Differentiable rendering.
- Research intern @Microsoft Research Asia, Internet Graphics Group, 2019 ~ 2020
Neural relighting research with Dr. Guojun Chen, Dr. Yue Dong and Dr. Xin Tong.
- Research intern @Tencent AI Lab, 2019.7 ~ 2019.8
3D face related research with Dr. Haozhi Huang.
- Research intern @Microsoft Research Asia, Internet Graphics Group, 2018 ~ 2019
Appearance modeling research with Dr. Yue Dong and Dr. Xin Tong.
- Research intern @Megvii(Face++), 2017.7 ~ 2017.9

Facial recovery and rendering research with Dr. Liqian Ma.

Selected Awards

2022

- Huawei Top Minds Program(华为天才少年)
- Outstanding Graduate of Beijing
- Outstanding Doctoral Graduate, Department of computer science and technology, Tsinghua University

2021

- Style3D Graduate Fellowship (10 winners annually)
- First Prize Award for Presentation at the Inaugural Journal of Image and Graphics (JIG) Graduate Academic Forum
- Fall Comprehensive Scholarship, Tsinghua University

2019 and before

- “Star of Tomorrow” Intern Award, Microsoft Research Asia, 2019
- National Encouragement Scholarship, 2015
- National Encouragement Scholarship, 2013

Publications

1. ControlFace: Few-Shot 3D Face Generation via a Controllable Diffusion Model Guided by Text and Images
IEEE International Conference on Multimedia & Expo (ICME), 2025 (CCF B)
Jinfu Wei, Zheng Zhang, Qinchuan Zhang, Ran Liao and Duan Gao
2. DreamPBR: Text-driven Generation of High-resolution SVBRDF with Multi-modal Guidance
IEEE International Conference on Multimedia & Expo (ICME), 2025 (CCF B)
Linxuan Xin, Zheng Zhang, Zhiyi Pan, Jinfu Wei, Duan Gao, Wei Gao
3. UniFaceGAN: High-Quality 3D face Editing with a Unified Latent Space
IEEE International Conference on Acoustics, Speech and Signal Processing (ICASSP), 2025 (CCF B)
Jinfu Wei, Zheng Zhang, Ran Liao and Duan Gao

4. Neural Global Illumination: Interactive Indirect Illumination Prediction under Dynamic Area Lights
IEEE Transactions on Visualization and Computer Graphics (TVCG), 2022 (CCF A)
Duan Gao, Haoyuan Mu, Kun Xu
5. Deferred Neural Lighting: Free-viewpoint Relighting from Unstructured Photographs
ACM Transactions on Graphics (Proceedings of SIGGRAPH Asia 2020) (CCF A)
Duan Gao, Guojun Chen, Yue Dong, Pieter Peers, Kun Xu, Xin Tong
6. Deep Inverse Rendering for High-resolution SVBRDF Estimation from an Arbitrary Number of Images
ACM Transactions on Graphics (Proceedings of SIGGRAPH 2019) (CCF A)
Duan Gao, Xiao Li, Yue Dong, Pieter Peers, Kun Xu, Xin Tong
7. High-frequency Face Estimation from a Single Image
CCF CAD&CG), 2019
Duan Gao, Kun Xu

Patents

1. A Rendering Method, Apparatus, Device Cluster, Storage Medium, and Program Product
CN121767201A, 2026.03.31
Zheng Zhang, **Duan Gao**, Yuan Gao
2. A material map generation method and device and computing device
CN120726206A, 2025.09.30
Duan Gao, Linxuan Xin, Zheng Zhang
3. A method, system and related equipment for adjusting three-dimensional model
CN120219679A, 2025.06.28
Duan Gao, Zheng Zhang, Yuan Gao, Jinfu Wei
4. Data processing method and data processing device
CN119963699A, 2025.05.09
Duan Gao, Zheng Zhang
5. Rendering method and device
CN116266376A, 2023.06.30
Duan Gao, Kun Xu, Chengyu Gu, Jingtang Liao

6. Three-dimensional face model construction method and device, computer equipment and storage medium

CN110675413B, 2020-11-13

Duan Gao, Shilong Zhou, Yonggen Ling, Haozhi Huang, Shi-Min Hu, Kun Xu, Wei Liu

7. Face image data acquisition method and face image data acquisition device

CN108876891B, 2021-12-28

Liqian Ma, **Duan Gao**

8. Face image synthesis method and device

CN107644455B, 2022-02-22

Liqian Ma, **Duan Gao**

Academic Services (review)

- CCF-A: SIGGRAPH 2022/2025, SIGGRAPH Asia 2023/2025
- CCF-B: Eurographics(EG), Pacific Graphics(PG), The Visual Computer, Journal of Computer-Aided Design & Computer Graphics (JCAD), etc.