Hongrui Cai

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Email: hrcai AT mail.ustc.edu.cn **GitHub**: github.com/RainbowRui **Homepage**: rainbowrui.github.io

Research Interests

Computer Vision & Graphics: 3D geometry processing, point cloud processing, image and video generation.

Education

University of Science and Technology of China Hefei, China
Ph.D. in 3D Vision Sep. 2021 – Present
Mentors: Prof. Juyong Zhang.

University of Science and Technology of China Hefei, China
M.S. in Data Science Sep. 2019 – Jul. 2021
Mentors: Prof. Juyong Zhang. GPA: **3.85**/4.3

South China University of Technology Guangzhou, China
B.S. in Mathematics and Applied Mathematics Sep. 2015 – Jun. 2019
Ranking: **1**/46. GPA: **92.15**/100

Papers

X. Huang, **H. Cai**, D. Liang, J. Zhang, J. Jia, (2022). CariPainter: Sketch Guided Interactive Caricature Generation. Under Review.

W. Feng, **H. Cai**, J. Hou, B. Deng, J. Zhang, (2022). Differentiable Deformation Graph based Neural Non-rigid Registration. Under Review.

W. Feng, J. Li, **H. Cai**, X. Luo, J. Zhang, (2022). Neural Points: Point Cloud Representation with Neural Fields. *IEEE Conference on Computer Vision and Pattern Recognition* **(CVPR 2022)**.

H. Cai, Y. Guo, Z. Peng, J. Zhang, (2021). Landmark Detection and 3D Face Reconstruction for Caricature using a Nonlinear Parametric Model. *Graphical Models* **(GMOD)**.

W. Feng, J. Zhang, **H. Cai**, H. Xu, J. Hou, H. Bao, (2021). Recurrent Multi-view Alignment Network for Unsupervised Surface Registration. *IEEE Conference on Computer Vision and Pattern Recognition* **(CVPR 2021)**.

Y. Guo, J. Zhang, Y. Chen, **H. Cai**, Z. Huang, B. Deng, (2021). Real-Time Face View Correction for Front-Facing Cameras. *Computational Visual Media* **(CVM)**.

Projects

Real-Time Face View Correction for Front-Facing Cameras

Horizontal project — Sep. 2019 – Oct. 2020

Propose a fully automatic face view correction system based on a single RGB camera to solve video calling problems such as ”upward nose” and ”big face” caused by the disparity between camera location and face orientation.

Selected Honors

- Excellent Undergraduate Student, by SCUT — 2019
- Excellent Undergraduate Thesis Award, by SCUT — 2019
- First-Class Academic Scholarships for Postgraduates, by USTC — 2019 - 2021

Academic Talks

- Oral presentation in CVM 2021 — Apr. 2021