

Mingming HE

E-MAIL: hmm.lillian@gmail.com

WEBSITE: www.mingminghe.com

RESEARCH INTERESTS

Computational Photography, Video & Image Processing, Visual Synthesis such as 2D & 3D Face Manipulation, 3D Neural Field Editing, and Relighting.

EDUCATION

HONG KONG UNIVERSITY OF SCIENCE AND TECHNOLOGY

Ph.D. Computer Science & Engineering

GPA: 4.00 / 4.33

Thesis: Synthesizing Images and Videos from Large-Scale Datasets

Hong Kong, China

Jan 2015 – Nov 2018

ZHEJIANG UNIVERSITY

M.S. Computer Application Science

GPA: 3.94 / 4.00

Thesis: GPU-Based Deep Image Rendering & Compositing System

Hangzhou, Zhejiang. China

Sep 2011 – Mar 2014

ZHEJIANG UNIVERSITY

B.E. Digital Media Technology

GPA: 3.82 / 4.00 **RANK:** 1

Hangzhou, Zhejiang. China

Sep 2007 – Jul 2011

SIMON FRASER UNIVERSITY

Full-time Exchange Student in Interactive Arts & Technology

GPA: 4.04 / 4.33

Vancouver, Canada

Sep 2009 – Apr 2010

PROFESSIONAL EXPERIENCES

NETFLIX EYELINE STUDIOS

Senior Research Scientist

Los Angeles, CA, USA

Jan 2023 – Present

NETFLIX

Senior Research Scientist

Los Angeles, CA, USA

Jun 2022 – Present

USC INSTITUTE FOR CREATIVE TECHNOLOGIES

Postdoctoral Scholar - Research Associate

Los Angeles, CA, USA

Mar 2019 – Dec 2021

MICROSOFT RESEARCH ASIA

Research Intern

Beijing, China

Feb 2017 – Jan 2018

RESEARCH PUBLICATIONS

- **DiffRelight: Diffusion-Based Facial Performance Relighting** 2024
*Mingming He**, Pascal Clausen*, Ahmet Levent Taşel*, Li Ma*, Oliver Pilarski*, Wenqi Xian, Laszlo Rikker, Xueming Yu, Ryan Burgert, Ning Yu, and Paul Debevec (*Equal contribution).
ACM SIGGRAPH Asia (Conference Paper), 2024.
- **Chat2Layout: Interactive 3D Furniture Layout with a Multimodal LLM** 2024
Can Wang, Hongliang Zhong, Menglei Chai, Mingming He, Dongdong Chen, and Jing Liao.

arXiv, 2024.

- **Mesh-Guided Neural Implicit Field Editing** 2023
Can Wang, **Mingming He**, Menglei Chai, Dongdong Chen, and Jing Liao.
arXiv, 2023.
- **AvatarCraft: Transforming Text into Neural Human Avatars with Parameterized Shape and Pose Control** 2023
Ruixiang Jiang, Can Wang, Jingbo Zhang, Menglei Chai, **Mingming He**, Dongdong Chen, and Jing Liao.
IEEE International Conference on Computer Vision (ICCV), 2023.
- **Nerf-Art: Text-Driven Neural Radiance Fields Stylization** 2023
Can Wang, Ruixiang Jiang, Menglei Chai, **Mingming He**, Dongdong Chen, and Jing Liao.
IEEE IEEE Transactions on Visualization and Computer Graphics (TVCG), 2023.
- **Water Simulation and Rendering from a Still Photograph** 2022
Ryusuke Sugimoto, **Mingming He**, Jing Liao, and Pedro V. Sander.
ACM SIGGRAPH Asia (Conference Paper), 2022.
- **CLIP-NeRF: Text-and-Image Driven Manipulation of Neural Radiance Fields** 2022
Can Wang, Menglei Chai, **Mingming He**, Dongdong Chen, and Jing Liao.
IEEE Conference on Computer Vision and Pattern Recognition (CVPR), 2022.
- **Cross-Domain and Disentangled Face Manipulation with 3D Guidance** 2022
Can Wang, Menglei Chai, **Mingming He**, Dongdong Chen, and Jing Liao.
IEEE Transactions on Visualization and Computer Graphics (TVCG), 2022.
- **DenseGAP: Graph-Structured Dense Correspondence Learning with Anchor Points** 2022
Zhengfei Kuang, Jiaman Li, **Mingming He***, Tong Wang, and Yajie Zhao (*Corresponding author).
International Conference on Pattern Recognition (ICPR), 2022.
- **DisUnknown: Distilling Unknown Factors for Disentanglement Learning** 2021
Sitao Xiang, Yuming Gu, Pengda Xiang, Menglei Chai, Hao Li, Yajie Zhao, and **Mingming He*** (*Corresponding author).
IEEE International Conference on Computer Vision (ICCV), 2021.
- **Exemplar-Based 3D Portrait Stylization** 2021
Fangzhou Han, Shuquan Ye, **Mingming He**, Menglei Chai, and Jing Liao.
IEEE Transactions on Visualization and Computer Graphics (TVCG), 2021.
- **Efficient Semantic Image Synthesis via Class-Adaptive Normalization** 2021
Zhentao Tan, Dongdong Chen, Qi Chu, Menglei Chai, Jing Liao, **Mingming He**, Lu Yuan, Gang Hua and Nenghai Yu.
IEEE Transactions on Pattern Analysis and Machine Intelligence (TPAMI), 2021.
- **Dynamic Facial Asset and Rig Generation from a Single Scan** 2020
Jiaman Li, Zhengfei Kuang, Yajie Zhao, **Mingming He**, Karl Bladin, and Hao Li.
ACM Transactions on Graphics (TOG), SIGGRAPH ASIA 2020.
- **One-Shot Identity-Preserving Portrait Reenactment** 2020
Sitao Xiang, Yuming Gu, Pengda Xiang, **Mingming He***, Koki Nagano, Haiwei Chen, and Hao Li (*Project leader).
arXiv, 2020.
- **Protecting World Leaders Against Deep Fakes** 2019
Shruti Agarwal, Hany Farid, Yuming Gu, **Mingming He**, Koki Nagano, and Hao Li.
IEEE Conference on Computer Vision and Pattern Recognition (CVPR) Workshops, 2019.
- **Gated Context Aggregation Network for Image Dehazing and Deraining** 2019
Dongdong Chen, **Mingming He**, Qingnan Fan, Jing Liao, Liheng Zhang, Dongdong Hou, Lu Yuan, and Gang Hua.
IEEE Workshop on Applications of Computer Vision (WACV), 2019.

- **Deep Exemplar-based Video Colorization** 2019
Bo Zhang, Mingming He, Jing Liao, Pedro V. Sander, Lu Yuan, Amine Bermak, and Dong Chen. IEEE Conference on Computer Vision and Pattern Recognition (CVPR), 2019.
- **Progressive Color Transfer with Dense Semantic Correspondences** 2019
Mingming He, Jing Liao, Dongdong Chen, Lu Yuan, and Pedro V. Sander. ACM Transactions on Graphics (TOG), SIGGRAPH 2019 Presentation.
- **Deep Exemplar-based Colorization** 2018
Mingming He, Dongdong Chen*, Jing Liao, Pedro V. Sander, and Lu Yuan (*Equal contribution). ACM Transactions on Graphics (TOG), SIGGRAPH 2018.*
- **Gigapixel Panorama Video Loops** 2017
Mingming He, Jing Liao, Pedro V. Sander, and Hugues Hoppe. ACM Transactions on Graphics (TOG), SIGGRAPH 2018 Presentation.

ENGINEERING PROJECTS

- **GPU-Based Deep Image Rendering & Compositing System | M.S. Graduation Project** 2013
 - A deep image rendering and compositing system
 - Excellent Graduate Graduation Thesis of Zhejiang University
 - Compressed deep images on demand with Adaptive Transparency Buffer
 - Proposed a ray tracing algorithm for high quality DOF in deep image space
 - Proposed an adaptive time sampling method for real-time post-processed motion blur
 - Implemented fog effects with procedural noise and light beams in deep image space
- **RenderAnts Pro, GPU-Based Photorealistic Rendering Engine | Team Project** 2011 – 2013
 - A feature-film rendering system that runs entirely on GPU
 - Outstanding Contribution Award by GAPS on the contribution to RenderAnts Pro
 - Developed and designed the friendly interaction systems and editing tools (material system, material library, and image preview)
 - Processed complex front-end data and built an inter-process communication module
 - Developed Maya, MotionBuilder, Shave and Deadline plug-ins
 - Integrated Python scripting system to simplify the maintenance

PATENT

WO2020005650 - Image Colorization Based On Reference Information 2020

TEACHING EXPERIENCES

Teaching Assistant, Game Programming, HKUST 2016
 Teaching Assistant, Introduction to Computing with Excel VBA, HKUST 2015
 Teaching Assistant, The Basic of Computer Science, Zhejiang University 2012

HONORS

Outstanding Graduates of Zhejiang University Awarded on Graduate Period 2014
 Second-Class Scholarship for Outstanding Graduate Students (30%) 2012
 Jiang Zhen New Graduate Scholarship for Excellent Freshmen (5%) 2011

Outstanding Graduates of Zhejiang University Awarded on Undergraduate Period	2011
2K Games Scholarship for Outstanding Students	2011
National Scholarship for Students with Outstanding Merits	2010
First-Class Scholarship for Outstanding Students (3%)	2010
Second-Class Scholarship for Outstanding Students (8%)	2009

PROFESSIONAL ACTIVITIES

TECHNICAL PAPERS COMMITTEE MEMBER

ACM SIGGRAPH Asia 2024, ACM SIGGRAPH 2022, ACM SIGGRAPH Asia 2021.

REVIEWER

ACM SIGGRAPH, ACM SIGGRAPH Asia, IEEE TPAMI, IEEE CVPR, IEEE TVCG, IEEE TMM, IEEE TIP, IEEE SMCA, IEEE Access, JCGT, IJCAI, IEEE CGA, PG.

TOPIC EDITOR

Frontiers in Computer Science

INTERNATIONAL EXPERIENCES

Student Volunteer, International Conference on Service Science 2010, China	2010
Freshman Scholarship Program, 2007 Session of the Crimson Summer Exchange, China	2007