

Mingming HE

E-MAIL: hmm.lillian@gmail.com

WEBSITE: www.mingminghe.com

RESEARCH INTERESTS

Computational Photography, Video & Image Processing, Deep Learning, Face Manipulation & Modeling

EDUCATION

HONG KONG UNIVERSITY OF SCIENCE AND TECHNOLOGY

Ph.D. Computer Science & Engineering

GPA: 4.0 / 4.33

Thesis: Synthesizing Images and Videos from Large-Scale Datasets

Hong Kong, China

Jan 2015 – Nov 2018

ZHEJIANG UNIVERSITY

M.S. Computer Application Technology

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 / 52

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

USC ICT

Postdoctoral Scholar - Research Associate

Los Angeles, CA, USA

Mar 2019 – Dec 2021

Microsoft Research

Research Intern

Beijing, China

Feb 2017 – Jan 2018

RESEARCH PUBLICATIONS

Gigapixel Panorama Video Loops

Mingming He, Jing Liao, Pedro V. Sander, Hugues Hoppe

ACM Transactions on Graphics (TOG), SIGGRAPH 2018 Presentation.

2017

Deep Exemplar-based Colorization

Mingming He*, Dongdong Chen*, Jing Liao, Pedro V. Sander, Lu Yuan (*Equal contribution)

ACM Transactions on Graphics (TOG), SIGGRAPH 2018.

2018

Progressive Color Transfer with Dense Semantic Correspondences

Mingming He, Jing Liao, Dongdong Chen, Lu Yuan, Pedro V. Sander

ACM Transactions on Graphics (TOG), SIGGRAPH 2019 Presentation.

2019

Deep Exemplar-based Video Colorization

Bo Zhang, **Mingming He**, Jing Liao, Pedro V. Sander, Lu Yuan, Amine Bermak, Dong Chen

2019

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

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	
<ul style="list-style-type: none"> 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	
<ul style="list-style-type: none"> 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 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.

INTERNATIONAL EXPERIENCES

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

HOBBIES

Painting, Photography