Mingming HE

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RESEARCH INTERSTS

Computational Photography, Visual Synthesis, Video & Image Processing, and Face Manipulation.

EDUCATION

HONG KONG UNIVERSITY OF SCIENCE AND TECHNOLOGY — **Hong Kong, China**
Ph.D. Computer Science & Engineering — *Jan 2015 – Nov 2018*
GPA: 4.0 / 4.33
Thesis: Synthesizing Images and Videos from Large-Scale Datasets

ZHEJIANG UNIVERSITY — **Hangzhou, Zhejiang. China**
M.S. Computer Application Technology — *Sep 2011 – Mar 2014*
GPA: 3.94 / 4.00
Thesis: GPU-Based Deep Image Rendering & Compositing System

ZHEJIANG UNIVERSITY — **Hangzhou, Zhejiang. China**
B.E. Digital Media Technology — *Sep 2007 – Jul 2011*
GPA: 3.82 / 4.00 **RANK:** 1

SIMON FRASER UNIVERSITY — **Vancouver, Canada**
Full-time Exchange Student in Interactive Arts & Technology — *Sep 2009 – Apr 2010*
GPA: 4.04 / 4.33

PROFESSIONAL EXPERIENCES

USC ICT — **Los Angeles, CA, USA**
Postdoctoral Scholar - Research Associate — *Mar 2019 – Dec 2021*

MICROSOFT RESEARCH ASIA — **Beijing, China**
Research Intern — *Feb 2017 – Jan 2018*

RESEARCH PUBLICATIONS

- **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 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*

HOBBIES

Painting, Photography