

# MINGMING HE (贺明明)

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## RESEARCH INTERESTS

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Computational Imaging, Video Processing, Image-based Rendering, Deep Learning, HCI

## EDUCATION

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Jan 2015-      **Hong Kong University of Science and Technology**, *Hong Kong, China*  
Nov 2018      Ph.D. in the Department of Computer Science & Engineering  
                 Advisor: Pedro V. Sander    CGA: 4.00 / 4.3  
  
Sep 2011-      **Zhejiang University**, *Hangzhou, China*  
March 2014      M.S. in Computer Application Technology in the College of Computer Science and Technology  
                 Advisor: Kun Zhou    GPA: 3.94 / 4.0  
  
Sep 2007-      **Zhejiang University**, *Hangzhou, China*  
Jul 2011      B.E. in Digital Media Technology in the College of Computer Science and Technology  
                 GPA: 3.82 / 4.0    Rank: 1 / 52  
  
Sep 2009-      **Simon Fraser University**, *Vancouver, Canada*  
Apr 2010      Full-time Exchange Student in School of Interactive Arts & Technology  
                 GPA: 4.04 / 4.33

## INTERNSHIP EXPERIENCE

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Sep 2017-      **Microsoft Research**, *Beijing, China*  
Jan 2018      Mentors: Jing Liao & Lu Yuan

## PROJECTS

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Sep 2017 -      **Deep Exemplar-based Colorization | *Research Project***  
Jan 2018      - *The first deep learning approach for exemplar-based colorization*  
                 ·A learning based method to learn how to select, propagate, and predict colors from a given reference  
                 ·A new image retrieval algorithm to select reference image automatically  
                 ·Extension to video colorization  
  
Feb 2017 -      **Progressive Color Transfer with Dense Semantic Correspondences | *Research Project***  
Oct 2017      - *A new algorithm for color transfer between images that have perceptually similar semantic structures*  
                 ·A new “neural color transfer” method, which jointly optimizes matching in deep feature domain and local color transfer in image domain  
                 ·A new local color transfer model to avoid local structural distortions and global incoherency  
                 ·Extension to one-to-many color transfer to avoid content mismatching between images  
  
May 2015 -      **Gigapixel Panorama Video Loops | *Research Project***  
May 2016      - *The first technique to create wide-angle, high-resolution looping panoramic videos*  
                 ·A combinatorial optimization to determine the source video and looping parameters  
                 ·A complicated pipeline for gigapixel-sized looping panoramas integrating a set of components related to panorama stitching  
                 ·Designed an interactive viewer for users to explore freely and edit locally

- Jun 2013 - **GPU-based Deep Image Rendering &Compositing System | *Graduation Project***  
 Dec 2013 *-A deep image rendering and compositing system integrating multiple deep image post-processing techniques and rendering algorithms entirely on GPU*
- 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
- Excellent Graduate Graduation Thesis of Zhejiang University*
- Sep 2011- **RenderAnts Pro, GPU-based Photorealistic Rendering Engine | *Team Project***  
 Aug2013 *-A feature-film rendering system that runs entirely on GPU, and I have finished:*
- 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
- Outstanding Contribution Award by GAPS on the contribution to RenderAnts Pro*

## PUBLICATIONS

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### Gigapixel Panorama Video Loops

Mingming He, Jing Liao, Pedro V. Sander, Hugues Hoppe  
 ACM Transactions on Graphics 37(1), 3:1-3:15 (SIGGRAPH 2018 presentation)

### Deep Exemplar-based Colorization

Mingming He\*, Dongdong Chen\*, Jing Liao, Pedro V. Sander, Lu Yuan (\*Joint first authors)  
 ACM Transactions on Graphics (SIGGRAPH 2018)

### Progressive Color Transfer with Dense Semantic Correspondences

Mingming He, Jing Liao, Dongdong Chen, Lu Yuan, Pedro V. Sander  
 (accepted by ACM Transactions on Graphics)

## TEACHING EXPERIENCE

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

## INTERNATIONAL EXPERIENCE

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

## HONORS

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- Mar 2014 •Outstanding Graduates of Zhejiang University Awarded on Graduate Period  
 Dec 2012 •Second-Class Scholarship for Outstanding Graduate Students (30%)  
 Dec 2011 •Jiang Zhen New Graduate Scholarship for Excellent Freshmen (5%)  
 Apr 2011 •Outstanding Graduates of Zhejiang University Awarded on Undergraduate Period  
 Apr 2011 •2K Games Scholarship for Outstanding Students  
 Dec 2010 •National Scholarship for Students with Outstanding Merits (2%)  
 Dec 2010 •First-Class Scholarship for Outstanding Students (3%)  
 Dec 2009 •Second-Class Scholarship for Outstanding Students (8%)