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Zhe Zhu

Education

- 2007.9–2011.6 ★ **Bachelor’s Degree, School of Computer Science – Wuhan University**
Supervisor: Prof.Zhiyong Yuan and Prof. Aiguo Yao
Dissertation: Server-side implementation of a sketch based image montage system(**outstanding dissertation**)
- 2011.9–2017.1 ★ **PhD, Department of Computer Science and Technology – Tsinghua University**
Supervisor: Prof.Shimin Hu
Research Interest: Computer Graphics and Computer Vision
Dissertation: Image Enhancement and Analysis for Street Views (**outstanding graduates in Beijing**)

Experience

- 2016.6–2016.9 ★ **Intern Researcher, Adobe Research, San Jose, CA, USA**
Supervisor: Dr Brian Price and Dr Scott Cohen
- 2017.2–2019.11 ★ **Postdoc Associate, Duke University, Durham, NC, USA**
Supervisor: Dr Maciej A Mazurowski and Dr. Mustafa R. Bashir MD
- 2019.11–present ★ **Senior Research Associate, Duke University, Durham, NC, USA**
Supervisor: Dr Maciej A Mazurowski and Dr. Mustafa R. Bashir MD

List of Publications

Selected Paper

10. *Traffic-Sign Detection and Classification in the Wild.*
Zhe Zhu, Dun Liang, Songhai Zhang, Xiaolei Huang, Baoli Li, Shi-Min Hu, *IEEE Conference on Computer Vision and Pattern Recognition* , 2016. 2110-2118.
9. *3-Sweep: Extracting Editable Objects from a Single Photo.*
Tao Chen, **Zhe Zhu**, Ariel Shamir, Shi-Min Hu, Daniel Cohen-Or, *ACM Transactions on Graphics (TOG)*. 2013. Vol. 32. No. 6. (SIGGRAPH Asia 2013).
8. *Extracting 3D Objects from Photographs Using 3-Sweep.*
Tao Chen, **Zhe Zhu**, Shi-Min Hu, Daniel Cohen-Or, Ariel Shamir, *Communications of the ACM*,2016, Vol. 59 No. 12, Pages 121-129.

7. *Faithful Completion of Images of Scenic Landmarks using Internet Images*
Zhe Zhu, Hao-Zhi Huang, Zhi-Peng Tan, Kun Xu, Shi-Min Hu, *IEEE Transactions on Visualization and Computer Graphics*, 2016. Volume 22. Issue 8. pp 1945 - 1958.
6. *A Comparative Study of Algorithms for Realtime Panoramic Video Blending.*
Zhe Zhu, Jiaming Lu, Songhai Zhang, Ralph Martin, Hantao Liu, Shi-Min Hu, *IEEE Transactions on Image Processing*, vol. 27, no. 6, pp. 2952-2965, June 2018.
5. *A Metric for Video Blending Quality Assessment*
Zhe Zhu, Hantao Liu, Jiaming Lu, and Shi-Min Hu, *IEEE Transactions on Image Processing*, 2019.
4. *An Optimization Approach for Localization Refinement of Candidate Traffic Signs .*
Zhe Zhu, Jiaming Lu, Ralph Martin, Shi-Min Hu, *IEEE Transactions on Intelligent Transportation Systems*, 2017, Vol 18, No. 11, pp 3006-3016.
3. *Computational Design of Transforming Popup Books.*
Nan Xiao, **Zhe Zhu**, Ralph Martin, Kun Xu, Jiaming Lu, Shi-Min Hu, *ACM Transactions on Graphics*, 37, 1, Article 8 (January 2018), 14 pages.
2. *Hierarchical Convolutional Neural Networks for Segmentation of Breast Tumors in MRI with Application to Radiogenomics*
Jun Zhang, Ashirbani Saha, **Zhe Zhu**, Maciej Mazurowski, *IEEE transactions on medical imaging*, Volume 38, Issue 2, Pages 435-447, 2019/2.
1. *Mask embedding for Realistic High-resolution Medical Image Synthesis*
Yinhao Ren, **Zhe Zhu**, Yinzhou Li, Dehan Kong, Lars J. Grimm, Jeffrey R. Marks, Joseph Lo, *MICCAI* 2019.

Other Paper

14. *A Large Chinese Text Dataset in the Wild*
Tai-Ling Yuan, **Zhe Zhu**, Kun Xu, Cheng-Jun Li, Tai-Jiang Mu, Shi-Min Hu, *Journal of Computer Science and Technology*, Volume 34, Issue 3, Pages 509-521, 2019/5/1.
13. *Deep Learning for identifying radiogenomic associations in breast cancer*
Zhe Zhu, Ehab Albadawy, Ashirbani Saha, Jun Zhang, Michael R Harowicz, Maciej A Mazurowski, *Computers in biology and medicine*, 2019/4/25.
12. *3D Modeling and Motion Parallax for Improved Videoconferencing.*
Zhe Zhu, Ralph R. Martin, Robert Pepperell, Alistair Burleigh, *Computational Visual Media*, 2016. Volume 2. Issue 2. pp 131 - 142.
11. *Panorama Completion for Street Views.*
Zhe Zhu, Ralph R. Martin, and Shi-Min Hu, *Computational Visual Media*, 2015. Vol.1. No.1.
10. *Deep learning analysis of breast MRIs for prediction of occult invasive disease in ductal carcinoma in situ*
Zhe Zhu, Michael Harowicz, Jun Zhang, Ashirbani Saha, Lars J Grimm, E Shelley Hwang, Maciej A Mazurowski, *Computers in Biology and Medicine*, 115, 103498, 2019.
9. *Deep convolutional neural network applied to the liver imaging reporting and data system (LI-RADS) version 2014 category classification: a pilot study.*
Rikiya Yamashita, Amber Mittendorf, **Zhe Zhu**, Kathryn J Fowler, Cynthia S Santillan, Claude B Sirlin, Mustafa R Bashir, Richard KG Do, *Abdominal Radiology*, 2019.
8. *A Three-Stage Real-time Detector for Traffic Signs in Large Panoramas*
Yizhi Song, Ruochen Fan, Sharon Huang, **Zhe Zhu**, Ruofeng Tong, *Computational Visual Media Conference* 2019.

7. *Breast cancer molecular subtype classification using deep features: preliminary results*
Zhe Zhu, Ehab Albadawy, Ashirbani Saha, Jun Zhang, Michael R. Harowicz, Maciej A. Mazurowski, *SPIE Medical Imaging*, 2018.
6. *Deep learning-based features of breast MRI for prediction of occult invasive disease following a diagnosis of ductal carcinoma in situ: preliminary data*
Zhe Zhu, Michael R. Harowicz, Jun Zhang, Ashirbani Saha, Lars J. Grimm, Shelley Hwang, Maciej A. Mazurowski, *SPIE Medical Imaging*, 2018.
5. *Breast Tumor Segmentation in DCE-MRI Using Fully Convolutional Networks with an Application in Radiogenomics*
 Jun Zhang, Ashirbani Saha, **Zhe Zhu**, Maciej A. Mazurowski, *SPIE Medical Imaging*, 2018.
4. *Breast Mass Detection in Mammography and Tomosynthesis via Fully Convolutional Network-based Heatmap Regression*
 Jun Zhang, Elizabeth Hope Cain, Ashirbani Saha, **Zhe Zhu**, Maciej A. Mazurowski, *SPIE Medical Imaging*, 2018.
3. *Convolutional Encoder-Decoder for Breast Mass Segmentation in Digital Breast Tomosynthesis*
 Jun Zhang, Sujata V. Ghate, Lars J. Grimm, Ashirbani Saha, Elizabeth Hope Cain, **Zhe Zhu**, Maciej A. Mazurowski, *SPIE Medical Imaging*, 2018.
2. *Avoiding Bleeding in Image Blending*
 Minxuan Wang, **Zhe Zhu**, Songhai Zhang, Ralph Martin, Shi-Min Hu, *IEEE International Conference on Image Processing (ICIP)*, 2017.
1. 基于 GPU 加速的实时 4K 全景视频拼接
 卢嘉铭, 朱哲, *计算机科学*, 44(8), 18-21, 2017.

Paper under Review

2. *Mask Embedding in conditional GAN for Guided Synthesis of High Resolution Images*
 Yinhao Ren, **Zhe Zhu**, Yinzhou Li, Joseph Lo, *arXiv:1907.01710*.
1. *Model-Guided 3D Stitching for Video Fusion*
 Zhong Zhou, Ming Meng, Yi Zhou, **Zhe Zhu**, Jingdi You, submitted to *IEEE Transactions on Visualization and Computer Graphics*.

Academic Service

Reviewers for:

IEEE Transactions on Visualization and Computer Graphics

IEEE Transactions on Image Processing

Journal of Computer Science and Technology

Computer & Graphics

CVPR 2019

ICCV 2019

CVPR 2020

AAAI 2020

IEEE Signal Processing Letters

Computational Visual Media

Visual Computer

Patents

Method, device and computer-readable storage medium for panoramic image completion - US9165338B2

Tsinghua University, Tencent

Kun Xu, Jianyu Wang, Baoli Li, Haifeng Deng, Zhe Zhu

Digital Image Processing through use of an Image Repository - US20180286023A1

Adobe Inc.

Zhe Zhu, Scott D. Cohen, Brian L. Price

Digital image processing including refinement layer, search context data, or DRM - US10169549B2

Adobe Inc.

Zhe Zhu, Scott D. Cohen, Brian L. Price

Texture mapping method for solid of revolution - 201310446992.6

Tsinghua University

Shimin Hu, Tao Chen, Zhe Zhu

Modeling method for solid of revolution - 201310446573.2

Tsinghua University

Shimin Hu, Tao Chen, Zhe Zhu

Image processing method and device - 201410081866.X

Tencent

Shimin Hu, Jianyu Wang, Haifeng Deng, Kun Xu, Zhe Zhu

Image correction method and device - 201510003719.5

Tencent

Shimin Hu, Tianyi Gui, Zhe Zhu

Panorama completion method and device - 201310019530.6

Tencent, Tsinghua University

Kun Xu, Jianyu Wang, Baoli Li, Haifeng Deng, Zhe Zhu

Line segment matching method and device - 201510532135.7

Tsinghua University

Shimin Hu, Zhe Zhu

Image registration method and device - 201510532152.0

Tsinghua University

Shimin Hu, Zhe Zhu

An optimization approach for localization refinement of candidate traffic signs - 201611170043.X

Tsinghua University

Shimin Hu, Zhe Zhu, Jiaming Lu

Professional Skills

Skilled in C++, Python, Matlab

Familiar with JAVA and C#

Awards

National Scholarship, 2008

Samsung Scholarship, 2009

Kodak Scholarship, 2010

Outstanding Graduates in Beijing, 2017

First Prize of Science and Technology Award of Chinese Institute of Electronics, 2017

Personal Interests

Traditional Chinese culture

Outdoor activity