ZHIHAO XIA

Computer Science and Engineering Department, Washington University in St. Louis

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RESEARCH INTERESTS

My research interests include physics-based computer vision, 3D vision, computational photography. I am particularly interested in reasoning different aspects of visual appearance (geometry, light, colors, etc) from images.

EDUCATION

Washington University in St. Louis   *Sep 2017 - Present*
Ph.D. in Computer Science & Engineering
Advisor: Ayan Chakrabarti

University of Science and Technology of China   *Sep 2013 - Jun 2017*
B.S. in Computer Science, School of the Gifted Young
Ranking: 2/18
Honor: National Scholarship (Top 2%)

EXPERIENCE

Adobe Research   May 2019 - Aug 2019
Research Intern   *CA, USA*

· Mentors: Federico Perazzi, Michael Gharbi, Kalyan Sunkavalli
· Propose Basis Prediction Networks for burst denoising.
· Transfer the research during internship to products, along with a patent and a research paper (both in submission).

Washington University in St. Louis   Sep 2017 - Present
Research Assistant   *MO, USA*

· Exploiting the statistical structure of natural images and scenes for visual inferrence.
· Unsupervised learning by exploiting the inherent structure of the data and natural images.
· 3D modeling: Generating and exploiting probabilistic monocular depth estimates with VAE.

King Abdullah University of Science and Technology   Jan 2017 - May 2017
Visiting Student Researcher   *Jeddah, SAU*

· Recognition of polyadenylation signal (PAS) in human and mouse genes with CNN.
· Address data insufficiency with transfer learning.

National University of Singapore   July 2016 - Nov 2016
Visiting Student Researcher   *Singapore*

· Investigate the evolution of Internet topology with machine learning.
· Model data with Multiple Hidden Markov Chains.

University of Science and Technology of China   June 2015 - June 2016
Undergraduate Research Assistant   *Hefei, China*

· Topic diffusion analytics in social media based on machine learning.
· Learning from real data including texts and pictures.

PUBLICATION

Zhihao Xia, Federico Perazzi, Michael Gharbi, Kalyan Sunkavalli, Ayan Chakrabarti. "Basis Prediction Networks for Effective Burst Denoising with Large Kernels", *in submission*.

Zhihao Xia, Patrick Sullivan, Ayan Chakrabarti. "Generating and Exploiting Probabilistic Monocular Depth Estimates", *in submission*.

Zhihao Xia and Ayan Chakrabarti, "Identifying Recurring Patterns with Deep Neural Networks for Natural Image Denoising", *WACV*, 2020.

Zhihao Xia and Ayan Chakrabarti. "Training Image Estimators without Image Ground-Truth", *NeurIPS*, 2019 **(spotlight)**

Zhihao Xia, Yu Li, Bin Zhang, Yuhui Hu, Wei Chen and Xin Gao. "DeeReCT-PolyA: a robust and generic deep learning method for PAS identification", *Bioinformatics*, 2018.

Sun, Yu, **Zhihao Xia** and Ulugbek S. Kamilov. "Efficient and accurate inversion of multiple scattering with deep learning", *Optics express* 26(11): 14678-14688, 2018.

SKILLS

Proficient	Python, Tensorflow
Experienced	C/C++, Matlab, PyTorch