WANG, ZIHAO

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EDUCATION

Northwestern University 2015 - present
Ph.D. in Computer Science, anticipated 06/2020 *Evanston, IL*

Qualifier: Computational video sensing for space-time resolution enhancement
Committee: Oliver Cossairt (advisor), Aggelos Katsaggelos, Roarke Horstmeyer, Dikpal Reddy

Zhejiang University 2011 - 2015
Chu Ko-chen Honors College *Hangzhou, China*
B.S. in Optical Science and Engineering
GPA: 3.9/4

INDUSTRIAL EXPERIENCE

Apple Inc. 01/2019 - 05/2019
Engineering intern, Dr. Xiaokai Li *Cupertino, CA*

· Panel Process and Optics team.

Light Labs Inc. 04/2017 - 08/2017
Research intern, Dr. Dikpal Reddy *Palo Alto, CA*

· Contributed to the deployment of color calibration software. Improved color rendering performance.
· Homography estimation with radial distortion.

RESEARCH EXPERIENCE

Northwestern University 09/2015-present
Graduate research assistant, Dr. Oliver Cossairt *Evanston, IL*

· Programming practices in Python & MATLAB for image processing.
· Theoretical & algorithmic knowledge in image formation, computer vision, optimization (compressed sensing, machine learning), etc.
· Hardware experience in optical imaging system designs, e.g. digital holography, coded exposure technique, projector-camera system, microscopy etc.

Microsoft Research 06/2018 - 09/2018
Research intern, Dr. Sing Bing Kang & Dr. Sudipta Sinha *Redmond, WA*

· Designed a privacy-preserving action recognition framework using a lens-free coded aperture camera.
· Enhanced skills in C++ programming; Gained knowledge in deep learning and action recognition.

Massachusetts Institute of Technology 02/2015 - 05/2015
Visiting undergraduate student, Dr. George Barbastathis *Cambridge, MA*

· Developed a Hamiltonian ray-tracing algorithm for GRadient INdex (GRIN) lens simulation
· Leveraged Wigner distribution function for scattering modulation.

Zhejiang University 03/2012 - 01/2015
Undergraduate research assistant, Dr. Ming Ronnier Luo *Hangzhou, China*

· Designed psychophysical experiments for surface appearance studies, i.e. gloss, glint, coarseness.
· Gained experience in BRDF data acquisition and statistical analysis.

SELECTED AWARDS & SCHOLARSHIPS

Conference Travel Grant, EECS & The Graduate School, Northwestern University ($ 900) 2017
CKC-Harvard-MIT undergraduate thesis fellowship, Zhejiang University ($ 10,000) 2014-2015
Excellent Student Awards, Zhejiang University 2011-2013

TEACHING

EECS 395/495 Intro to Computational Photography (TA) Fall 2016
EECS 110 Intro to Python (TA) Winter 2017, 2018

COMPUTER SKILLS

Development Python, C/C++, Javascript, WebGL
Analytics Mathworks MATLAB, IBM SPSS
Graphics Adobe Illustrator/Photoshop, Autodesk 3Ds Max

SERVICE & ACTIVITIES

Leadership Member of Computer Science PhD Student Advocacy Council (CSPAC), Northwestern University 2017; Founder of Special Interest Group in Chinese Theater (SIGTheater)
Student volunteer IEEE International Conference on Computational Photography (ICCP) 2016, 2017; Color Technology for Museum Applications Workshop 2014; CIE Lighting Quality and Energy Efficiency 2012
Reviewer *OSA*: Optics Express, Applied Optics, Journal of the Optical Society of America A; *IEEE*: Transactions on Computational Imaging; *IS&T* Journal of Imaging Science and Technology

PUBLICATIONS

Refereed Journals

1. **Computational multifocal microscopy** K. He, Z. Wang, X. Huang, X. Wang, S. Yoo, P. Ruiz, I. Gdor, A. Selewa, N. J Ferrier, N. Scherer, M. Hereld, A. Katsaggelos, O. Cossairt, Biomedical Optics Express 9, 6477-6496 (2018) (doi: 10.1364/BOE.9.006477)

2. **Gloss evaluation from soft and hard metrologies** Z. Wang, L. Xu, Y. Hu, F. Mirjalili, and M. R. Luo, J. Opt. Soc. Am. A 34, 1679-1686 (2017) (doi: 10.1364/JOSAA.34.001679)

3. **Subsampled phase retrieval for temporal resolution enhancement in lensless on-chip holographic video** D. Ryu, Z. Wang, K. He, G. Zheng, R. Horstmeyer, and O. Cossairt, Biomedical Optics Express 8, 1981-1995 (2017) (doi: 10.1364/BOE.8.001981)

4. **Compressive holographic video** Z. Wang, L. Spinoulas, K. He, L. Tian, O. Cossairt, A. K. Katsaggelos, and H. Chen, Optics Express 25, 250-262 (2017) (doi: 10.1364/OE.25.000250)

5. **Looking into special surface effects: glint impression and diffuse coarseness** Z. W. Wang, M. R. Luo, Coloration Technology, 132: 153-161 (2016) (doi: 10.1111/cote.12203)

Conference Proceedings

1. **Dictionary-based phase retrieval for space-time super resolution using lens-free on-chip holographic video** Z. Wang, Q. Dai, D. Ryu, K. He, R. Horstmeyer, A. Katsaggelos, O. Cossairt, in OSA Imaging and Applied Optics Congress, 2017. (Oral presentation, June 27, San Francisco, USA)

2. **4D tracking of biological samples using lens-free on-chip in-line holography** Z. Wang, D. Ryu, K. He, O. Cossairt, A. Katsaggelos, in Digital Holography & 3-D Imaging, 2017. (Oral presentation, May 30, Jeju Island, South Korea)

3. **High-speed holographic imaging using compressed sensing and phase retrieval** Z. Wang, D. Ryu, K. He, R. Horstmeyer, A. Katsaggelos, O. Cossairt, in SPIE DCS 10222-15, 2017. (Oral presentation, Apr. 9 , Anaheim, USA)