ZIHAO W. WANG

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Personal website ◇ Google scholar ◇ Graduation: July 2020 ◇ Last updated: March 14, 2020

EDUCATION

Northwestern University 2015 - 2020
Ph.D. in Computer Science (computer vision and machine learning) *Evanston, IL*

Thesis: Synergy of physics and learning based models in computational imaging and displays
Advisor: Dr. Oliver Cossairt
Experience: 3D holographic imaging and display, event-based imaging and vision.

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

Thesis: Hamiltonian ray tracing for gradient index lens. (completed at MIT)
Experience: color science, human visual perception, BRDF

INTERNSHIPS

Peking University & Pengcheng Labs 06/2019 - 09/2019
Research intern, Dr. Boxin Shi *Shenzhen, China*

· Developed a novel algorithm for high speed video frame synthesis using an event camera.
· Skilled in camera calibration, dataset collection, deep residual learning model design and refinement.

Apple Inc. 01/2019 - 05/2019
Display engineering intern, Incubation *Cupertino, CA*

· Studied the human perception of depth.
· Developed and prototyped 3D light field display.

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

· Designed a privacy-preserving action recognition system using a lens-free coded aperture camera.
· Implemented and evaluated different deep learning models, *e.g.* VGG-16, C3D, I3D.

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

· Contributed to the deployment of color calibration software. Improved color rendering performance.

SELECTED AWARDS & SCHOLARSHIPS

CKC-Harvard-MIT undergraduate thesis fellowship, Zhejiang University ($ 10,000) 2014-2015
Excellent Student Awards, Zhejiang University 2011-2013

COMPUTER SKILLS

Programming Python, Tensorflow, Keras, C/C++
Analytics MATLAB
Graphics Adobe Illustrator/Photoshop/After Effects/Premiere Pro, Unity

TEACHING

EECS 395/495 Intro to Computational Photography (TA) — Fall 2016
EECS 110 Intro to Python (TA) — Winter 2017, 2018
ELEC_ENG 395/495: Computational Photography Seminar (guest lecturer) — Winter 2020

PUBLICATIONS

Conference proceedings

3. **Joint filtering of intensity images and neuromorphic events for high-resolution noise-robust imaging** ZW. Wang, P. Duan, O. Cossairt, A. Katsaggelos, T. Huang, B. Shi, The IEEE Conference on Computer Vision and Pattern Recognition (CVPR), June 2020. (22% acc. rate)

2. **Event-driven video frame synthesis** ZW. Wang, W. Jiang, K. He, B. Shi, A. Katsaggelos, O. Cossairt, The IEEE International Conference on Computer Vision (ICCV) Workshops, November 2019. (Oral presentation)

1. **Privacy-preserving action recognition using coded aperture videos** ZW. Wang, V. Vineet, F. Pittaluga, S. Sinha, O. Cossairt, SB. Kang, The IEEE Conference on Computer Vision and Pattern Recognition (CVPR) Workshops, June 2019. (Oral presentation.)

Journals

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

4. **Gloss evaluation from soft and hard metrologies** Z. Wang, L. Xu, Y. Hu, F. Mirjalili, and MR. 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** Z. Wang, D. Ryu, K. He, G. Zheng, R. Horstmeyer, and O. Cossairt, Biomedical Optics Express 8, 1981-1995 (2017) (doi: 10.1364/BOE.8.001981)

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

1. **Looking into special surface effects: glint impression and diffuse coarseness** ZW. Wang, MR. Luo, Coloration Technology, 132: 153-161 (2016) (doi: 10.1111/cote.12203)

SERVICE & ACTIVITIES

Leadership Founding member of CSPAC, Northwestern University 2017; Founder of a Chinese theatre club at Northwestern University (SIGTheater)

Volunteer IEEE International Conference on Computational Photography (ICCP) 2016, 2017

Reviewer *OSA*: Optics Letters, Optics Express, Applied Optics, JOSA A, Continuum; *IEEE*: Transactions on Computational Imaging; *IS&T*: Journal of Imaging Science and Technology