

# Zhihong Zhang

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## Education

**Tsinghua University, Department of Automation**

PHD STUDENT IN CONTROL SCIENCE AND ENGINEERING

Beijing, China

2019 - present

**Xidian University, School of Electronics Engineering**

BACHELOR OF ELECTRONICS AND INFORMATION ENGINEERING

Xi'an, China

2015 - 2019

## Research Interests

**Computational Imaging:** Combine optical imaging systems and computer vision algorithms (optimization, deep learning, etc.) to bridge the gap between image acquisition, image processing, and image understanding, and realize a performance boost compared with optics-only or algorithm-only methods. Specifically, I focus on snapshot compressive imaging, coded exposure imaging, low-light imaging, and relevant low-level vision tasks including deblurring, denoising, etc.

## Publications

### RESEARCH ARTICLES (†Equal contributions)

- [1] **Zhihong Zhang**, Yuxiao Cheng, Liheng Bian, Jinli Suo, and Qionghai Dai. INFWIDE: Image and Feature Space Wiener Deconvolution Network for Non-blind Image Deblurring in Low-Light Conditions. *IEEE Transactions on Image Processing* (2023).
- [2] **Zhihong Zhang**<sup>†</sup>, Bo Zhang<sup>†</sup>, Xin Yuan<sup>†</sup>, Siming Zheng, Xiongfei Su, Jinli Suo, David Brady, and Qionghai Dai. From Compressive Sampling to Compressive Tasking: Retrieving Semantics in Compressed Domain with Low Bandwidth. *Photonix* (2022).
- [3] **Zhihong Zhang**, Kaiming Dong, Jinli Suo, and Qionghai Dai. Deep coded exposure: End-to-end co-optimization of flutter shutter and deblurring processing for general motion blur removal. *Photonics Research* (2023).
- [4] **Zhihong Zhang**<sup>†</sup>, Chao Deng<sup>†</sup>, Yang Liu, Xin Yuan, Jinli Suo, and Qionghai Dai. Ten-Mega-Pixel Snapshot Compressive Imaging with A Hybrid Coded Aperture. *Photonics Research* (2021).
- [5] **Zhihong Zhang**, Jinli Suo, and Qionghai Dai. Denoising of event-based sensors with deep neural networks. *Photonics Asia* (2021).
- [6] **Zhihong Zhang**, Runzhao Yang, Yuxiao Cheng, Jinli Suo, and Qionghai Dai. Lightweight High-Speed Photography Built on Coded Exposure and Implicit Neural Representation of Videos. *International Journal of Computer Vision* (Under review) (2024).
- [7] **Zhihong Zhang**<sup>†</sup>, Siming Zheng<sup>†</sup>, Jinli Suo, Xin Yuan, Min Qiu, Guohai Situ, David J. Brady and Qionghai Dai. A Decade Review of Video Compressive Sensing: Roadmap to Practical Applications. *Engineering* (Under review) (2024).
- [8] Weihang Zhang, **Zhihong Zhang**, Liheng Bian, Haoqian Wang, Jinli Suo, and Qionghai Dai. High axial resolution single molecule localization under dense excitation with a multi-channel deep U-Net. *Optics Letters* (2021).
- [9] Yuxiao Cheng, Runzhao Yang, **Zhihong Zhang**, Jinli Suo, and Qionghai Dai. A Mutually Boosting Dual Sensor Computational Camera for High Quality Dark Videography. *Information Fusion* (2023).
- [10] Bo Zhang<sup>†</sup>, Xin Yuan<sup>†</sup>, Chao Deng, **Zhihong Zhang**, Jinli Suo, and Qionghai Dai. End-to-end snapshot compressed super-resolution imaging with deep optics. *Optica* (2022).
- [11] Runzhao Yang, Xiaolong Wu, **Zhihong Zhang**, Fabian Zhang, Tingxiong Xiao, Zongren Li, Kunlun He, and Jinli Suo. DVI: A Derivative-based Vision Network for INR. *European Conference on Computer Vision (ECCV)* (Under review) (2024).

## Honors and Awards

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**Honors:** Outstanding Bachelor's Thesis of Xidian University (2019), Outstanding Graduate of Xidian University (2019), Outstanding Student of Xidian University (2016, 2017 & 2018)

**Scholarships:** Second-class Scholarship of Tsinghua University(2021, 2022 & 2023), National Scholarship (2017), National Endeavor Scholarship (2016 & 2018), First-class Scholarship for Freshmen (2015).

**Competitions:** Second Prize in the 15-th "Challenge Cup" Technological Innovation Competition (2017), Gold Award and Best Popularity Award in the 3-rd China College Students' "Internet +" Innovation and Entrepreneurship Competition (top 5, 2017), First Prize in Shaanxi Province "FLTRP Cup" English Reading Contest (top 10, 2017)

## Academic Service

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**Reviewer:** IEEE Transactions on Circuits and Systems for Video Technology (TCSVT), Photonics Research (PR), Optics Express (OE), Optics Letters (OL), The Journal of the Optical Society of America A (JOSA A).