Yu Sun

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RESEARCH INTERESTS

Sparsity and Compressive Sensing, Optimization, Large-scale Optimization, Deep Learning, Machine Learning, Computational Imaging.

EDUCATION

Washington University in St. Louis, St. Louis, MO   Aug. 2018 – Expected 2022
Ph.D. student in Computer Science
Advisor: Prof. Ulugbek Kamilov

Washington University in St. Louis, St. Louis, MO   Aug. 2015 – May. 2018
M.S. in Data Analytics & Statistics
M.S. in Computer Science & Engineering

Sichuan University, Chengdu, China   Sep. 2011 – Jun. 2015
B.S. in Electronic and Information Engineering
Advisor: Prof. Qinggong Guo

PUBLICATIONS

[1] G. Song, **Y. Sun**, J. Liu, and U. S. Kamilov, "A New Recurrent Plug-and-Play Prior Based on the Multiple Self-Similarity Network." arXiv:1907.11793. **preprint**

[2] J. Liu, **Y. Sun**, and U. S. Kamilov, "Infusing Learned Priors into Model-Based Multispectral Imaging," IEEE International Workshop on Computational Advances in Multi-Sensor Adaptive Processing (**CAMSAP 2019**), in press.

[3] **Y. Sun**, J. Liu, and U. S. Kamilov, "Block Coordinate Regularization by Denoising," Proc. Ann. Conf. Neural Information Processing Systems (**NeurIPS 2019**), in press. **Acceptance rate: 1428/6743 = 21%**

[4] Z. Wu, **Y. Sun**, J. Liu, and U. S. Kamilov, "Online Regularization by Denoising with Application to Phase Retrival," Proc. Workshop on Learning Computational Imaging, **ICCV 2019**, in press. [**Oral**]

[5] **Y. Sun**, B. Wohlberg, and U. S. Kamilov, "An Online Plug-and-Play Algorithm for Regularized Image Reconstruction." **IEEE Trans. Comput. Imag.**, vol.5, no.3, pp.395-408, September 2019. **Top 10 popular paper.**

[6] **Y. Sun**, S. Xu, Y. Li, L. Tian, B. Wohlberg, and U. S. Kamilov, "Regularized Fourier Ptychography using an Online Plug-and-Play Algorithm," Proc. IEEE Int. Conf. Acoustics, Speech and Signal Process. (**ICASSP 2019**), pp.7665-7669. [**Oral**]

[7] J. Liu, **Y. Sun**, X. Xu, and U. S. Kamilov, "Image Restoration using Total Variation Regularized Deep Image Prior," Proc. IEEE Int. Conf. Acoustics, Speech and Signal Process. (**ICASSP 2019**), pp.7715-7719.

[8] **Y. Sun**, B. Wohlberg, and U. S. Kamilov, "Plug-In Stochastic Gradient Method," Proc. International Biomedical and Astronomical Signal Processing Frontiers Workshop (**BASP 2019**), p.75.

[9] **Y. Sun** and U. S. Kamilov, "Stability of Scattering Decoder For Nonlinear Diffractive Imaging," Proc. 4th International Traveling Workshop on Interactions between Sparse models and Technology (**iTWIST 2018**), p.31. [**Oral**]

[10] **Y. Sun**, Z. Xia, and U. S. Kamilov, "Efficient and accurate inversion of multiple scattering with deep learning," **Optics Express**, vol.26, no.11, pp.14678-14688, May 2018.

APPLICABLE COURSEWORK

- *Sparse Modeling for Imaging and Vision*
- *Machine Learning*
- *Probability and Stochastic Process*
- *Algorithms for Nonlinear Optimization*
- *Bayesian Methods in Machine Learning*
- *Topology*
- *Optimization*
- *Stochastic Process*
- *Real Analysis*

PROFESSIONAL SERVICES

- Reviewer of IEEE Transaction on Computational Imaging (TCI)

- Reviewer of SPIE Journal on Electronic Imaging (JEI)

- Student Member, IEEE (2018-present)

TEACHING SERVICE

As Course Teaching Assistant:

- CSE 585T Sparse Model for Imaging, Wash U. 2018 Fall.

- ESE 415 Optimization, Wash U. 2018 Spring.

- CSE 427S Cloud Computing and Big Data Application, Wash U. 2016 Fall, 2017 Spring, 2017 Fall.

SUPERVISED STUDENTS

Current Students (Co-advised with Prof. Kamilov):

- Weijie Gan (M.S. CSE)
- Zihui Wu (B.S. CSE)
- Max Torop (M.S. CSE)
- Mingyang Xie (B.S. CSE)

Past Students (Co-advised with Prof. Kamilov):

- Shiqi Xu (M.S. ESE, 2019), *Now Ph.D. student at Duke U.*
- Zach Pewitt (M.S. ESE, 2018), *Now at Boeing*
- Jialong Zhang (M.S. ESE, 2018)
- Chunyuan Li (M.S. CSE, 2018)
- Jiaming Liu (M.S. ESE, 2018), *Now Ph.D. student at Wash U.*
- Josehp Han (M.S. ESE, 2018), *Now at Deloitte*
- Fangying Zhai (M.S. ESE, 2018)