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RESEARCH INTERESTS

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

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] Z. Wu, **Y. Sun**, A. Matlock, J. Liu, L. Tian, and U. S. Kamilov, "SIMBA: Scalable Inversion in Optical Tomography using Deep Denoising Priors." arXiv:1911.13241. **preprint**

[2] 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**

[3] 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.

[4] **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%**

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

[6] **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.

[7] **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**]

[8] 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.

[9] **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.

[10] **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**]

[11] **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*

TECHNICAL SKILLS

- Two years of experience in machine learning, numerical analysis, and statistical modeling.
- Proficient with deep learning frameworks: Pytorch, TensorFlow, and Matlab.
- Proficient with programming languages: Python and Java.

PROFESSIONAL SERVICES

- Reviewer of IEEE International Conference on Acoustics, Speech and Signal Processing (ICASSP)
- 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)
- Max Torop (M.S. CSE)
- Zihui Wu (B.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)