Xiao Wang

Staff Research Scientist
Oak Ridge National Laboratory

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Skills and Research Interests

high performance computing, artificial intelligence, computational imaging, biomedical physics

Education

2012–2017	Ph.D., Electrical and Computer Engineering, Purdue University
	Thesis Title: High Performance Tomography
	Advisors: Charles A. Bouman and Samuel P. Midkiff
2012–2016	M.S.E.E, Electrical and Computer Engineering, Purdue University
2009–2012	B.A., Computer Science, Saint John's University (MN)
2009–2012	B.A., Mathematics, Saint John's University (MN)

Postdoc and Fellowship

2017–2021	Postdoc, Medical Imaging, Boston Children's Hospital
2017–2021	Research Fellow, Radiology, Harvard Medical School
	Advisor: Simon Warfield

Honors and Awards

2024 Top Supercomputing Achievement Award, HPCWire Editor's Choice Awards

2024 Finalist for ACM Gordon Bell Prize for Climate Modeling

2023 Senior Member of the IEEE

2022 Winner for American Association for Physicists in Medicine (AAPM) Truth CT Grand Challenge

2018 Young Investigator Award from the Society for Pediatric Radiology (SPR)

2017 Finalist for ACM Gordon Bell Prize

2016 Travel Awards for PPoPP 2016, ICASSP 2016, SC15

2015 Bronze Medal for ACM Student Research Competition (SC Conference)

Professional Employment

2024–current, Affiliated Faculty, Data Science & Engineering Program, The University of Tennessee Knoxville

2021–current, Staff Research Scientist, Oak Ridge National Laboratory

2017–2021, Postdoc Research Fellow, Radiology (Advisor: Simon Warfield), Harvard Medical School, Harvard University

2016–2017, Computer Engineer Intern, High Performance Imaging LLC, West Lafayette, IN

2012–2017, Research Assistant, Electrical and Computer Engineering, Purdue University

2012–2014, Research Assistant, Physics Department, Purdue University

2010–2011, Assistant Head to Computer Science Teaching Assistants, Computer Science Department, St. John's University (MN)

Research Grants

[1] Principal Investigator: **Xiao Wang**.
Co-Investigators: Isaac Lyngaas, Hong-Jun Yoon, Aristeidis Tsaris, Anika Tabassum, Maliha Hossain.
"Energy-Efficient Training for Large-Scale Vision Transformer Foundation Models".
DOE Laboratory Directed Research and Development (LDRD) AI Initiative Program, 10/01/24-09/30/26, $1,500,000.

[2] Principal Investigator: Amir Ziabari.
Co-Investigators: Aniket Pramanik, Patxi Fernandez, Shruti Kulkarni, Singanallur Venkatakrishnan, **Xiao Wang**, Muralikrishnan Gopalakrishnan Meena,.
"DiffusiveINR: Energy-Efficient Foundation Models for 3D Inverse Scientific Imaging Problems".
DOE Laboratory Directed Research and Development (LDRD) AI Initiative Program, 10/01/24-09/30/26, $1,000,000.

[3] Principal Investigator: Dan Lu.
Co-Investigators: Dali Wang, Siyan Liu, Aristeidis Tsaris, **Xiao Wang**, Jong Youl Choi, Xiaoying Shi, Ming Fan.
"ORBIT: AI Foundation Model for Earth System Modeling".
DOE Laboratory Directed Research and Development (LDRD) AI Initiative Program, 10/01/24-09/30/26, $1,000,000.

[4] Principal Investigator: **Xiao Wang**.
Co-Investigators: Isaac Lyngaas, Aristeidis Tsaris, Maliha Hossain, Hong-jun Yoon.
"Massively Parallel and Sustainable Computing for Large-Scale Transformer".
DOE Laboratory Directed Research and Development AI Initiative Program, 10/01/23-09/30/24, $250,000.

[5] Principal Investigator: **Xiao Wang**.
Co-Investigators: Murali Gopalakrishnan, Isaac Lyngaas, Singanallur Venkatakrishnan, Amir Ziabari, Anuj Kapadia.
"Advanced Tomographic Imaging Method for Multi-Material Decomposition and Artifact

Removal".
DOE Laboratory Directed Research and Development Seed Funding, 03/01/23-11/30/23, $190,000.

[6] Principal Investigator: **Xiao Wang**.
"Rapid and Deep Learned Material Decomposition Engine for CT Beam Hardening Artifacts Removal".
Oak Ridge National Laboratory NIH Program Development Funding, 07/01/22-09/30/22, $\$25,000$.

[7] Principal Investigator: Jacob Hinkle.
Co-Investigators: **Xiao Wang**, Debangshu Mukherjee, Olga Ovchinnikova, Aristeidis Tsaris, Mark Oxley.
"Exascale Manifold-Constrained Space-Time Ptychographic Reconstruction".
DOE Laboratory Directed Research & Development AI Initiative, 10/01/21-09/30/22, $\$350,000$.

[8] Principal Investigator: **Xiao Wang**.
Co-investigators: Simon Warfield, Robert MacDougall, Patrick Johnston, Amy Danehy, and Yanbo Zhang.
"High Performance Engine for Dose-Reduced CT Imaging System".
Society for Pediatric Radiology Young Investigator Research Grant, 7/1/2018-7/1/2019, $\$30,000$.

Computing Allocation

[1] Principal Investigator: Amir Ziabari.
Co-PI: Muralikrishnan Gopalakrishnan Meena, Patxi Fernandez-Zelaia, **Xiao Wang**, Singanallur Venkatakrishnan, Aniket Pramanik.
"DiffusiveINR: A Foundation Model for 3D Inverse Scientific Imaging Problems".
National Artificial Intelligence Research Resource Pilot (NAIRR) Allocation, 11/01/24-10/31/24, 180,000 allocation node hours on Nvidia cloud cluster.

[2] Principal Investigator: Aristeidis Tsaris.
Co-PI: **Xiao Wang**, Siyan Liu, Jong-Youl Choi, Ming Fan, Wei Zhang, Moet Ashfaq, Dan Lu, Ashwin Aji, Prasanna Balaprakash, Isaac Lyngaas.
"ORBIT: AI Foundation Model for Earth System Modeling".
DOE The Innovative and Novel Computational Impact on Theory and Experiment (INCITE) program, 1/01/25-12/31/25, 230,000 allocation node hours on Frontier supercomputer.

[3] Principal Investigator: Yuankai Huo.
Co-PI: Bennett Landman, Mary Ellen Koran, Braadley Malin, Daniel Moyer, Shunxing Bao, Anuj Kapadia, **Xiao Wang**, Muralikrishnan Gopalakrishnan Meena, Isaac Lyngaas.
"Securing Healthcare Privacy: Rendering Large-Scale Unlearnable Medical Imaging Data To Prevent Data Leaks".
National Artificial Intelligence Research Resource Pilot (NAIRR) Allocation, 05/01/24-12/31/24, 100,000 allocation node hours on Summit supercomputer.

[4] Principal Investigator: Evan Calabrese.
Co-PI: Isaac Lyngaas, **Xiao Wang**, Muralikrishnan Gopalakrishnan Meena, Yuankai Huo, G. Allan Johnson, Robert W. Williams, Thomas Beck.
"Extreme Resolution Brain Image Segmentation".

DOE The Innovative and Novel Computational Impact on Theory and Experiment (INCITE) program, 1/01/24-12/31/24, 250,000 allocation node hours on Frontier supercomputer.

[5] Principal Investigator: John Gounley.
Co-Investigators: Andrew Blanchard, Mayanka Chandra Shekar, Shang Gao, Heidi Hanson, Isaac Lyngaas, **Xiao Wang**, J. Robert Michael, Chris Stanley, Hong-Jun Yoon.
"Privacy-preserving Transformer models for clinical natural language processing".
DOE ASCR Leadership Computing Challenge, 06/01/22-05/30/23, 300,000 node hours on Summit Supercomputer.

[6] Principal Investigator: **Xiao Wang**.
"Fast Magnetic Resonance Imaging Data Acquisition And Accurate Neural Circuits Mapping".
National Energy Research Scientific Computing Center (NERSC), Contract No. DE-AC02-05CH11231, 01/08/18-1/13/20, 1,000,000 allocated computing hours on Cori KNL Supercomputer.

[7] Principal Investigator: **Xiao Wang**.
"Consensus Equilibrium Method for Extreme-Scale CT Image Reconstruction".
National Energy Research Scientific Computing Center (NERSC), Contract No. DE-AC02-05CH11231, 03/08/18-1/13/20, 30,190,000 allocated computing hours on Cori KNL Supercomputer.

Postdocs Currently Being Mentored:

[1] Maliha Hossain (Oak Ridge National Laboratory)

PhD Students Currently Being Mentored:

[1] Doga Topcicek (Data Science & Engineering, University of Tennessee Knoxville)

[2] Md Safaiat Hossain (Data Science & Engineering, University of Tennessee Knoxville)

Research Interns Currently Being Mentored:

[1] Clive Baker (Computer Science, Western Governors University)

Publications at Highly Selective Computer Science Conferences

[1] Chen, C., Selvan, S., **Wang, X**, and Wahib, M. (2025). Tap: Temporal adaptive patching for transformer models on video action recognition. Under review at The IEEE/CVF Conference on Computer Vision and Pattern Recognition (CVPR)

[2] Zhang, E., Chen, P., Lyngaas, I., Zhong, R., Wu, D., **Wang, X**, Munetomo, M., and Wahib, M. (2025). Sap: Symmetrical adaptive patching with pretrained vision transformer encoder for high-resolution medical segmentation. Under review at The IEEE/CVF Conference on Computer Vision and Pattern Recognition (CVPR)

[3] **Wang, X**, Liu, S., Tsaris, A., Choi, J.-Y., Aji, A., Fan, M., Zhang, W., Yin, J., Ashfaq, M., Lu, D., and Balaprakash, P. (2024). Orbit: Oak ridge base foundation model for earth system predictability. In *The International Conference for High Performance Computing, Networking, Storage,*

and Analysis, SC '24, pages 1–12. Association for Computing Machinery. **Finalist for 2024 ACM Gordon Bell Prize for Climate Modeling.**

[4] Zhang, E., Lyngaas, I., Chen, P., **Wang, X**, Igarashi, J., Huo, Y., Wahib, M., and Munetomo, M. (2024). Adaptive patching for high-resolution image segmentation with transformers. In *The International Conference for High Performance Computing, Networking, Storage, and Analysis*, SC '24, pages 1–12, New York, NY, USA. Association for Computing Machinery

[5] Wu, D., Meng, J., Zhu, W., Deng, M., **Wang, X**, Tao, L., Wahib, M., and Wei, Y. (2024b). autogemm: Pushing the limits of irregular matrix multiplication on arm architectures. In *The International Conference for High Performance Computing, Networking, Storage, and Analysis*, SC '24, pages 1–12, New York, NY, USA. Association for Computing Machinery

[6] Wu, D., Chen, P., **Wang, X**, Lyngaas, I., Miyajima, T., Endo, T., Matsuoka, S., and Wahib, M. (2024a). Real-time high-resolution x-ray computed tomography. In *Proceedings of the 38th ACM International Conference on Supercomputing*, ICS '24, page 110–123, New York, NY, USA. Association for Computing Machinery

[7] Dash, S., Lyngaas, I. R., Yin, J., Wang, X., Egele, R., Ellis, J. A., Maiterth, M., Cong, G., Wang, F., and Balaprakash, P. (2024). Optimizing distributed training on frontier for large language models. In *ISC High Performance 2024 Research Paper Proceedings (39th International Conference)*, pages 1–11

[8] Song, S. L. and etc. (2023). Deepspeed4science initiative: Enabling large-scale scientific discovery through sophisticated ai system technologies

[9] **Wang, X**, Lyngaas, I., Tsaris, A., Chen, P., Dash, S., Shekar, M. C., Luo, T., Yoon, H.-J., Wahib, M., and Gouley, J. (2023b). Ultra-long sequence distributed transformer

[10] Zhang, L., Wahib, M., Chen, P., Meng, J., **Wang, X**, Endo, T., and Matsuoka, S. (2023c). Revisiting temporal blocking stencil optimizations. In *Proceedings of the 37th International Conference on Supercomputing*, ICS '23, page 251–263, New York, NY, USA. Association for Computing Machinery

[11] Zhang, L., Wahib, M., Chen, P., Meng, J., **Wang, X**, Endo, T., and Matsuoka, S. (2023b). Perks: a locality-optimized execution model for iterative memory-bound gpu applications. In *Proceedings of the 37th International Conference on Supercomputing*, ICS '23, page 167–179, New York, NY, USA. Association for Computing Machinery

[12] **Wang, X**, Tsaris, A., Mukherjee, D., Oxley, M., Ovchinnikova, O., and Hinkle, J. (2022b). Image gradient decomposition for parallel and memory-efficient ptychographic reconstruction. *Proceedings of the International Conference for High Performance Computing, Networking, Storage and Analysis, SC'22*

[13] Chen, P., Wahib, M., **Wang, X**, Hirofuchi, T., Ogawa, H., Biguri, A., Boardman, R., Blumensath, T., and Matsuoka, S. (2021a). Scalable fbp decomposition for cone-beam ct reconstruction. In *Proceedings of the International Conference for High Performance Computing, Networking, Storage and Analysis*, SC '21, New York, NY, USA. Association for Computing Machinery

[14] Chen, P., Wahib, M., **Wang, X**, Takizawa, S., Hirofuchi, T., Ogawa, H., and Matsuoka, S. (2021b). Performance portable back-projection algorithms on cpus: Agnostic data locality and vectorization optimizations. In *The International Conference on Supercomputing*, ICS '21, pages 1–12. ACM

[15] **Wang, X**, Sridhar, V., Z.Ronaghi, Thomas, R., Deslippe, J., Dilworth, D., Buzzard, G., Midkiff, S., Bouman, C., and Warfield, S. (2019). Consensus equilibrium framework for super-resolution and extreme-scale ct reconstruction. In *Proceedings of the International Conference for High Performance Computing, Networking, Storage and Analysis*, SC '19. ACM

[16] **Wang, X**, Sabne, A., Sakdhnagool, P., Kisner, S. J., Bouman, C. A., and Midkiff, S. P. (2017). Massively parallel 3d image reconstruction. In *Proceedings of the International Conference for High Performance Computing, Networking, Storage and Analysis*, SC '17, pages 3:1–3:12. ACM. **Finalist for 2017 ACM Gordon Bell Prize.**

[17] Sabne, A., **Wang, X**, Kisner, S. J., Bouman, C. A., Raghunathan, A., and Midkiff, S. P. (2017). Model-based iterative ct image reconstruction on gpus. In *Proceedings of the 22Nd ACM SIGPLAN Symposium on Principles and Practice of Parallel Programming*, PPoPP '17, pages 207–220. ACM

[18] **Wang, X**, Sabne, A., Kisner, S. J., Raghunathan, A., Bouman, C. A., and Midkiff, S. P. (2016b). High performance model based image reconstruction. In *Proceedings of the 21st ACM SIGPLAN Symposium on Principles and Practice of Parallel Programming*, PPoPP '16, pages 2:1–2:12. ACM

Computer Journal Publications

[1] Tsaris, A., Zhang, C., **Wang, X**, Yin, J., Liu, S., Ashfaq, M., Fan, M., Choi, J. Y., Wahib, M., Lu, D., Balaprakash, P., and Wang, F. (2024). Sequence length scaling in vision transformers for scientific images on frontier. Under review at The International Journal of High Performance Computing Applications (IJHPCA)

[2] Xue, Y., Zha, J., Wahib, M., Ouyang, T., and **Wang, X.** (2024). Neural architecture search via similarity adaptive guidance. *Applied Soft Computing*, 162:111821

[3] Wang, Y., Zhen, L., Zhang, J., Li, M., Zhang, L., Wang, Z., Feng, Y., Xue, Y., **Wang, X**, Chen, Z., Luo, T., Goh, R. S. M., and Liu, Y. (2024). Mednas: Multi-scale training-free neural architecture search for medical image analysis. *IEEE Transactions on Evolutionary Computation*, pages 1–1

[4] Xue, Y., Tong, W., Neri, F., Chen, P., Luo, T., Zhen, L., and **Wang, X** (2023). Evolutionary architecture search for generative adversarial networks based on weight sharing. *IEEE Transactions on Evolutionary Computation*, pages 1–1

[5] Meng, J., Zhuang, C., Chen, P., Wahib, M., Schmidt, B., **Wang, X**, Lan, H., Wu, D., Deng, M., Wei, Y., and Feng, S. (2022). Automatic generation of high-performance convolution kernels on arm cpus for deep learning. *IEEE Transactions on Parallel and Distributed Systems*, 33(11):2885–2899

Image Processing & Medical Physics Journal Publications

[1] Lu, S., Guo, J., Dauphinee, J., Nieusma, J., **Wang, X**, Valkenburgh, P. V., Wernke, S., and Huo, Y. (2025a). Ai foundation models in remote sensing: A survey. Under review at IEEE Geoscience and Remote Sensing Magazine

[2] Abadi, E., Segars, W., ce, N. F., Paima, S., Hoffman, E., **Wang, X**, Clark, D., Ye, S., Gadick, G., Fryling, M., and Samei, E. (2025). Aapm truth-based ct (true ct) reconstruction grand challenge.

To Appear at Medical Physics

[3] **Wang, X**, MacDougall, R. D., Bouman, C. A., and Warfield, S. K. (2021). Physics-based iterative reconstruction for dual-source and flying-focal spot computed tomography. *Medical Physics*, 48(7):3595–3613

[4] Sridhar, V., **Wang, X**, Buzzard, G. T., and Bouman, C. A. (2020). Distributed iterative ct reconstruction using multi-agent consensus equilibrium. *IEEE Transactions on Computational Imaging*, 6:1153–1166

Image Processing Conference Publications

[1] Lu, Z., **Wang, X**, Yan, X., and Huo, Y. (2025c). Automatic strategy for human head models construction with t1w mri and ct images. Under review at International Society for Magnetic Resonance in Medicine (ISMRM) Conference Proceeding

[2] Zhu, Y., I. Lyngaas, M. M., Koran, M., Malin, B., Moyer, D., Bao, S., Kapadia, A., **Wang, X**, Landman, B., and Huo, Y. (2025). Scale-up unlearnable examples learning with high-performance computing. *IS&T Electronic Imaging Symposium*

[3] Hossain, M., Huo, Y., Yan, X., and **Wang, X** (2025). Sparse measurement medical ct reconstruction using multi-fused block matching denoising priors. In *SPIE Medical Imaging Proceeding*, pages 1–6

[4] Lu, Z., Liang, H., **Wang, X**, Yan, X., and Huo, Y. (2025b). Optimizing transmit field inhomogeneity of parallel rf transmit design in 7t mri using deep learning. In *SPIE Medical Imaging Proceeding*, pages 1–6

[5] Lyngaas, I., Meena, M. G., Calabrese, E., Wahib, M., Chen, P., Igarashi, J., Huo, Y., and **Wang, X** (2024). Efficient distributed sequence parallelism for transformer-based image segmentation. *Electronic Imaging*, 36(12):199–1–199–1

[6] Leng, H., Deng, R., Bao, S., Fang, D., Millis, B. A., Tang, Y., Yang, H., **Wang, X**, Peng, Y., Wan, L., and Huo, Y. (2024). High-performance data management for whole slide image analysis in digital pathology. In Tomaszewski, J. E. and Ward, A. D., editors, *Medical Imaging 2024: Digital and Computational Pathology*, volume 12933, page 129330Y. International Society for Optics and Photonics, SPIE

[7] **Wang, X**, Inman, P., Bible, A., Davern, S., and Agasthya, G. (2023a). Unsupervised deep learning image segmentation for dna double strand breaks and nuclei in fluorescence microscopy images. In *Microscopy and Microanalysis*, MM '23. Oxford University Press

[8] Meena, M. G., Ziabari, A., Venkatakrishnan, S., Lyngaas, I., Norman, M., Joo, B., Beck, T., Bouman, C., Kapadia, A., and **Wang, X** (2023). Physics guided machine learning for image-based material decomposition of tissues from simulated breast models with calcifications. *IS&T Electronic Imaging Symposium*

[9] **Wang, X**, Mukherjee, D., Tsaris, A., Oxley, M., Ovchinnikova, O., and Hinkle, J. (2022a). Efficient memory storage and linear parallel scaling for large-scale electron ptychography. *Microscopy and Microanalysis*, 28(S1):3104–3106

[10] **Wang, X**, Mohan, K. A., Kisner, S. J., Bouman, C. A., and Midkiff, S. P. (2016a). Fast Voxel Line Update for Time-Space Image Reconstruction. In *The 41st IEEE International Conference*

on Acoustics, Speech and Signal Processing, ICASSP'16

Workshop Papers

[1] Zhang, L., Wahib, M., Chen, P., Meng, J., **Wang, X**, Endo, T., and Matsuoka, S. (2023a). Exploiting scratchpad memory for deep temporal blocking: A case study for 2d jacobian 5-point iterative stencil kernel (j2d5pt). In *The 15th Workshop on General Purpose Processing Using GPU (GPGPU'23)*, GPGPU '23, page 34–35, New York, NY, USA. Association for Computing Machinery

Patents

[1] Bouman, C. A., Midkiff, S. P., Kisner, S. J., and **Wang, X** (2015). Tomography system. U.S. Patent US20180025514A1

Invited Talks

[1] "Scaling Vision Transformers to 113 Billion Parameters with ORBIT and Transforming Climate Modeling", Keynote Talk at High Performance Computing for Imaging Conference, San Francisco, Feb., 2025

[2] "ORBIT: Oak Ridge Base Foundation Model for Earth System Predictability", Annual Geological Union Meeting, Washington DC, December, 2024

[3] "Challenges and Opportunities in Training Large-Scale Vision Transformer for Science & Engineering Applications with Temporal Spatial Data", Invited Talk at AMD Machine Learning/HPC Application Talk Series, December, 2024

[4] "Training Large-Scale Vision Transformer Foundation Models for Science and Engineering Applications", Trillion Parameter Consortium (TPC) Workshop, sc'24, Atlanta, November, 2024

[5] "ORBIT: Oak Ridge Base Foundation Model for Earth System Predictability", ACM Gordon Bell Prize Finalist Talk, sc'24, Atlanta, November, 2024

[6] "Introduction to Vision Transformer and Sequence Parallelism", The Electronic Imaging Symposium High Performance Computing for Imaging Conference, January, 2024

[7] "Image Gradient Decomposition for Parallel and Memory-Efficient Ptychographic Reconstruction", The Electronic Imaging Symposium High Performance Computing for Imaging Conference, January, 2023

[8] "Image Gradient Decomposition for Parallel and Memory-Efficient Ptychographic Reconstruction", The Supercomputing Conference, November, 2022

[9] "Visual Computing and Principles for Tomographic Medical Imaging", The Department of Electrical and Computer Engineering, The University of Rochester, December, 2022

[10] "Image Gradient Decomposition for Parallel and Memory-Efficient Ptychographic Reconstruction", The Supercomputing Conference, November, 2022

[11] "Image Gradient Decomposition for Parallel and Memory-Efficient Ptychographic Reconstruction", Microscopy and Microanalysis Conference, August, 2022

[12] ”Model-Based Iterative Reconstruction for The Truth CT Challenge”, American Association for Physicists in Medicine Annual Meeting, July, 2022

[13] ”Deep Learning and High-Performance Computing for CT and MRI Statistical Iterative Reconstruction”, Oak Ridge National Lab, April, 2021

[14] ”High Performance Model-Based Iterative Reconstruction and Deep Learning Metal Artifacts Removal”, Los Alamos National Lab, Feb, 2021

[15] “Dose Reduction Reconstruction Engine for CT Head Scan”, Society for Pediatric Radiology Annual Meeting, virtual, June, 2020

[16] “Consensus Equilibrium Framework for Super-Resolution and Extreme-Scale CT Reconstruction,” Supercomputing Conference, SC’19, Denver, November 18th, 2019

[17] “Plug-and-Play Prior Model for CT Image Reconstruction,” Lawrence Berkeley National Lab Workshop on Tomographic Reconstruction, October 28-30, 2018

[18] “Massively Parallel 3D Image Reconstruction,” ACM Gordon Bell Prize Finalist Talk, SC’17, Denver, November 16th, 2017

[19] “Tomography Inversion Engine,” Lawrence Berkeley National Lab Workshop on Algorithms for Tomographic Reconstruction, November 9th, 2017

[20] “Massively Parallel 3D Image Reconstruction,” Lawrence Berkeley National Lab Workshop on Algorithms for Tomographic Reconstruction, November 8th, 2017

[21] “Massively Parallel Iterative Reconstruction,” Northeastern University ALERT Department of Homeland Security Center, Oct. 14th, 2017

[22] “Toward Advanced Baggage Screening: Reconstruction and Automatic Target Recognition,” Northeastern University ALERT Department of Homeland Security Center, January 11th, 2017

[23] “High Performance Tomography,” Lawrence Berkeley National Lab Workshop on Algorithms for Tomographic Reconstruction, November 9th, 2016

[24] “High Performance Model Based Image Reconstruction,” Purdue University, Department of Computer Science, October 6th, 2016

[25] “Fast Voxel Line Update for Time-Space Image Reconstruction,” ICASSP’16, Shanghai, China, March 22nd, 2016

[26] “High Performance Model Based Image Reconstruction,” PPoPP’16, Barcelona, Spain, March 11th, 2016

Editorial and Technical Program Committee Activities

[1] Founder and Conference Co-chair, *Electronic Imaging Symposium High Performance Computing for Imaging Conference (HPCI)*, 2022-current

[2] Review Editor, *Frontiers in High Performance Computing* (Impact Factor Not Available), 2023-current

[3] Topic Editor, *Micromachines* (Impact Factor 2.7), 2021

[4] Technical Program Committee Member, *The Eleventh International Conference on Advanced Communications and Computation* (INFOCOMP'21), 2021

Professional Societies Membership

- Senior Member, Institute of Electrical and Electronics Engineers (IEEE), 2023-Current
- Member, Association for Computing Machinery (ACM), 2019-current
- Member, The Imaging Science and Technology Society (IS&T), 2022-current
- Member, Institute of Electrical and Electronics Engineers (IEEE), 2015-2022

Paper Peer Review Activities

Reviewer for IEEE Transactions on Computational Imaging, IEEE Transactions on Image Processing, Medical Image Analysis, IEEE Access, IEEE Journal of Biomedical and Health Informatics, The Journal of Supercomputing, SIAM Journal on Scientific Computing

Grant Review Activities

- Reviewer, DOE LDRD Seed Program, 2023-current
- Reviewer, Emerging Imaging Technologies and Applications (EITA) study section, The National Institute of Health (NIH), 2023