

Pengfei Guo

Work: 517-802-0216 | Email: pguo4@jhu.edu | [Google Scholar](#), [LinkedIn](#), [Homepage](#)

EDUCATION

Johns Hopkins University, Baltimore, MD

Doctor of Philosophy in Computer Science

Advisors: Vishal M. Patel (primary), Gregory Hager

Jan 2020-May 2023

Johns Hopkins University, Baltimore, MD

Master of Science in Computer Science

Aug 2018-Dec 2019

Michigan State University, East Lansing, MI

Bachelor of Science in Computational Mathematics (With Honors)

Aug 2015-May 2018

SELECTED CONFERENCE PUBLICATION

1. **P. Guo**, P. Wang, J. Zhou, V. M. Patel, and S. Jiang, "Lesion Mask-based Simultaneous Synthesis of Anatomic and Molecular MR Images using a GAN," *Medical Image Computing and Computer Assisted Intervention (MICCAI)*, Lima, Peru, 2020.
2. H. Chen*, **P. Guo***, P. Li, G. H. Lee and G. Chirikjian, "Multi-person 3D Pose Estimation in Crowded Scenes Based on Multi-View Geometry," *Proceedings of the European Conference on Computer Vision (ECCV)*, Glasgow, Scotland, 2020. (Spotlight)
3. **P. Guo**, P. Wang, J. Zhou, S. Jiang, and V. M. Patel, "Multi-institutional Collaborations for Improving Deep Learning-based Magnetic Resonance Image Reconstruction using Federated Learning," *IEEE/CVF Conference on Computer Vision and Pattern Recognition (CVPR)*, Virtual Conference, 2021
4. **P. Guo**, J. M. Jose, P. Wang, J. Zhou, S. Jiang, and V. M. Patel, "Over-and-under Complete Convolutional RNN for MRI Reconstruction," *International Conference on Medical Image Computing and Computer Assisted Intervention (MICCAI)*, Strasburg, France, 2021
5. A. Xu, W. Li, **P. Guo**, H. Roth, A. Hatamizadeh, C. Zhao, D. Xu, H. Huang, and Z. Xu, "Closing the Generalization Gap of Cross-silo Federated Medical Image Segmentation," *IEEE/CVF Conference on Computer Vision and Pattern Recognition (CVPR)*, New Orleans, Louisiana, 2022
6. Y. Mei*, **P. Guo***, and V. M. Patel, "Escaping Data Scarcity for High-Resolution Heterogeneous Face Hallucination," *IEEE/CVF Conference on Computer Vision and Pattern Recognition (CVPR)*, New Orleans, Louisiana, 2022
7. C. Peng, **P. Guo**, S. K. Zhou, V. M. Patel, R. Chellappa, "Towards Performant and Reliable Undersampled MR Reconstruction via Diffusion Model Sampling," *Medical Image Computing and Computer Assisted Intervention (MICCAI)*, Singapore, 2022.
8. **P. Guo**, D. Yang, V. M. Patel and, H. R. Roth, "Auto-FedRL: Federated Hyperparameter Optimization for Multi-institutional Medical Image Segmentation," *Proceedings of the European Conference on Computer Vision (ECCV)*, Tel-Aviv, Israel, 2022.

SELECTED JOURNAL PUBLICATION

1. **P. Guo**, D. Li, and X. D. Li, "Deep OCT Image Compression with Convolutional Neural Networks," *Biomedical Optics Express* 11 (7), 3543-3554, 2020.
2. **P. Guo**, P. Wang, J. Zhou, V. M. Patel, and S. Jiang, "Anatomic and Molecular MR Image Synthesis Using Confidence Guided CNNs," *IEEE Transactions on Medical Imaging (TMI)*, 2020.
3. **P. Guo**, M. Unberath, H. Heo, and S. Jiang, "Learning-Based Analysis of Amide Proton Transfer-Weighted MRI to Identify Tumor Progression in Patients with Post-Treatment Malignant Gliomas," *NeuroImage: Clinical*, 2022.

PROFESSIONAL EXPERIENCE

Hyperfine, NYC, NY

Machine Learning Intern

May 2022-Aug 2022

- Coordinated a project on accelerated MRI reconstruction facilitated by deep learning.
- Developed a self-supervised reconstruction algorithm for low-field noisy MRI data.

NVIDIA, Bethesda, MD

Applied Research Intern

May 2021-Aug 2021

- Coordinated a project on medical image process assisted by federated learning-based methods and AutoML.
- Developed a reinforcement learning-based method that can conduct automatic hyperparameters tuning at clients and server sides under federated learning setting to improve the medical image segmentation performance.

TECHNICAL SKILLS

- Programming Languages: Python, Matlab, C++
- Software and Tools: PyTorch, TensorFlow, Cassandra, LaTeX