Xueqi Guo

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Education

Yale University — **New Haven, CT**
Ph.D. in Biomedical Engineering — *Augest 2019 - May 2024 (Expected)*

- GPA: 4.0/4.0 (All Honors)

Shanghai Jiao Tong University — **Shanghai, China**
B.S.E. in Biomedical Engineering; Minored in Music — *September 2015 - July 2019*

- GPA: 3.75/4.0 (88.15/100), Ranking: 4/56

Experiences

Siemens Healthineers — **Malvern, PA**
Image Analytics Intern — *June 2022 - August 2022*

- Weakly supervised abnormal texture segmentation for interstitial lung diseases

Johns Hopkins University — **Baltimore, MD**
Undergraduate Research Intern — *July 2018 - June 2019*

- Low dose CT denoising and network response analyzation

Publications

Journal

- **Xueqi Guo**, Bo Zhou, David Pigg, Bruce Spottiswoode, Michael Casey, Chi Liu, and Nicha C. Dvornek. Unsupervised deep learning inter-frame motion correction for whole-body dynamic PET using convolutional long short-term memory in a convolutional neural network. *Medical Image Analysis* ***(IF=13.828)***, 2022. https://doi.org/10.1016/j.media.2022.102524
- **Xueqi Guo**, Sule Tinaz, and Nicha C. Dvornek. Characterization of Early Stage Parkinson's Disease from Resting-state fMRI Data Using a Long Short-term Memory Network. *Frontiers in Neuroimaging,* 2022. https://doi.org/10.3389/fnimg.2022.952084
- Bo Zhou, Tianshun Miao, Niloufar Mirian, Xiongchao Chen, Huidong Xie, Zhicheng Feng, **Xueqi Guo**, Xiaoxiao Li, S. Kevin Zhou, James S. Duncan, and Chi Liu. Federated Transfer Learning for Low-dose PET Denoising: A Pilot Study with Simulated Heterogeneous Data. *IEEE Transactions on Radiation and Plasma Medical Sciences (TRPMS),* 2022. https://doi.org/10.1109/TRPMS.2022.3194408
- **Xueqi Guo**, Jing Wu, Ming-Kai Chen, Qiong Liu, John Onofrey, Yulei Pang, David Pigg, Michael Casey, Nicha Dvornek, and Chi Liu. Inter-pass motion correction for whole-body dynamic parametric PET imaging. *IEEE TRPMS (Revisions being processed).*
- Tianshun Miao, Bo Zhou, Juan Liu, **Xueqi Guo**, Xiongchao Chen, Ming-Kai Chen, Jing Wu, Richard E. Carson, and Chi Liu. Generation of Whole-Body FDG Parametric Ki Images from Static PET Images Using Deep Learning. *IEEE TRPMS (Revisions being processed).*

Conference

- **Xueqi Guo**, Bo Zhou, Xiongchao Chen, Chi Liu, and Nicha Dvornek. MCP-Net: Inter-frame Motion Correction with Patlak Regularization for Whole-body Dynamic PET. In the 25th International Conference on Medical Image Computing and Computer Assisted Intervention (MICCAI), Singapore, Sept 18-22, 2022. (**Early acceptance top 13%**, Poster)
- Xiongchao Chen, Bo Zhou, Huidong Xie, **Xueqi Guo**, Jiazhen Zhang, Albert Sinusas, John Onofrey, and Chi Liu. Dual-Branch Squeeze-Fusion-Excitation Module for Cross-Modality Registration of Cardiac

SPECT and CT. In the 25th MICCAI, Singapore, Sept 18-22, 2022. (Poster)

- **Xueqi Guo**, Chi Liu, and Nicha Dvornek. A Patlak-regularized deep learning inter-frame motion correction framework for whole-body dynamic PET. In Society of Nuclear Medicine and Molecular Imaging (SNMMI) Annual Meeting, Vancouver, BC, Canada, Jun 11-14, 2022. (Oral)
- Qiong Liu, Yu-Jung Tsai, **Xueqi Guo**, Jean-Dominique Gallezot, Ming-Kai Chen, Richard Carson, and Chi Liu. Prompts-matched Deep Learning Denoising for Standard-Count and Low-Count Whole Body Dynamic PET. In 2022 IEEE Medical Imaging Conference (MIC), Milano, Italy, Nov 05-12, 2022. (Oral)
- **Xueqi Guo**, Bo Zhou, David Pigg, Bruce Spottiswoode, Michael Casey, Chi Liu, and Nicha C. Dvornek. Inter-frame motion correction for whole-body parametric imaging using long short-term memory in a deep convolutional framework. In 2021 IEEE MIC, Virtual, Oct 16-23, 2021. **(Mini Oral, 2nd Place Student Paper Award Poster Competition)**.
- Yu-Jung Tsai, **Xueqi Guo**, John Onofrey, Yihuan Lu, Kathryn Fontaine and Chi Liu. Event-by-event non-rigid respiratory motion correction for multi-pass continuous-bed-motion whole-body parametric PET imaging. In 2021 IEEE MIC, Virtual, Oct 16-23, 2021. (Oral)
- **Xueqi Guo**, Jing Wu, Ming-Kai Chen, John Onofrey, Yulei Pang, David Pigg, Michael Casey, Nicha Dvornek and Chi Liu. Inter-pass motion correction for whole-body dynamic parametric PET imaging. In SNMMI Annual Meeting, Virtual, Jun 11-15, 2021. (Poster)
- Zhao Liu, Stephanie Thorn, Jing Wu, **Xueqi Guo**, Pedro Gil de Rubio Cruz, Richard Carson, Albert Sinusas and Chi Liu. Assessment of lower extremities flow using dynamic Rb-82 PET: Acquisition protocols and quantification methods. In SNMMI Annual Meeting, Virtual, Jun 11-15, 2021. (Oral)
- Grace J. Gang, **Xueqi Guo**, J. Webster Stayman. Performance analysis for nonlinear tomographic data processing. In 15th International Meeting on Fully Three-Dimensional Image Reconstruction in Radiology and Nuclear Medicine, Philadelphia, PA, United States, Jun 2-6, 2019. (Oral)
- Grace J. Gang, Kailun Cheng, **Xueqi Guo**, J. Webster Stayman. Generalized prediction framework for reconstructed image properties using neural networks. In SPIE Medical Imaging, 2019: Physics of Medical Imaging, San Diego, CA, United States, Feb 16-21, 2021. (Oral)

Patent

- Jun Zhao, Zhijun Wang, Qizheng Dai, **Xueqi Guo**, Heng Lin, Xin Zhang, Tianxiao Xu. Preoperative auxiliary planning device based on virtual reality. China Patent CN110547869A.

Professional Activities

Journal Reviews

- Neuropsychiatric Disease and Treatment (IF=3.482)

Conference Reviews

- The 5th Workshop on Machine Learning in Clinical Neuroimaging (MLCN), in MICCAI 2022
- MICCAI Educational Challenge, 2022

Membership

- IEEE, MICCAI, SNMMI

Honors and Awards

- 2022 MICCAI NIH Participation Award
- 2022 Chinese American SNMMI Third Place Young Investigator Award
- 2021 IEEE MIC Fourth Place Christopher J. Thompson Best Student Paper Award
- 2021 IEEE MIC Trainee Grant
- 2021 MedHacks FastForward U Sponsor Prize; Track Prize Finalist **(Top 5)**
- 2019 Yale Ph.D. fellowship
- 2019 Outstanding Graduates of Shanghai Jiao Tong University **(Top 5%)**
- 2018 First-Class Academic Excellence Scholarship of Shanghai Jiao Tong University **(Top 2%)**

Projects

Old Timer: a polypharmacy assistant for seniors *MedHacks 2021*

- Built an integrated application to assist aged patients under polypharmacy.
- Constructed the core scheduler algorithm and the built-in drug characteristic dataset.

Adolescent Bone Age Prediction from Hand X-ray Images *Fall 2018*

- Implemented a deep learning network by Keras on TensorFlow backend, including pre-trained VGG16 model and attention map generation.
- Modified the network structure by concatenating gender information with input batches, which successfully reduced the mean average prediction error from 13.70 months to 9.78 months.

Teaching

Yale BENG 352 Biomedical Signals and Images *Spring 2022; Spring 2021*

- Discussion section leader; assignment grader

Yale BENG 355L Physiological Systems Lab *Fall 2021*

- Lab leader

Skills

- Programming: Python (TensorFlow, Keras, PyTorch), Matlab, C#, C++, C, Java, JavaScript, LaTeX
- Languages: English, Mandarin Chinese, Japenese