Junshen Xu

Curriculum Vitae

PERSONAL DETAILS

Birth	January 26, 1996
Address	No.10 Zijing Student Apartment, Tsinghua University
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EDUCATION

BSc. Engineering Physics 2014.08-2018.07
Tsinghua University
GPA:95/100, Ranking:1/143

BSc. Pure and Applied Mathematics (Second Degree) 2015.08-2018.07
Tsinghua University
GPA:93/100

UGVR 2017.06-2017.09
Stanford University

RESEARCH EXPERIENCE

Joint Reconstruction with Motion Correction in PET/MRI 2015.10-2016.11
Tsinghua University
Researched joint reconstruction and motion correction of PET/MRI
Designed and implemented the algorithm
The research achievements were submitted to ISMRM 2017

Wearable PET 2015.12-2016.05
Tsinghua University
Implemented a wearable PET device
Responsible for PET image reconstruction
Took part in Challenge Cup Competition of Science Achievement in Tsinghua and won Second Prize

Magnetic Resonance Imaging of the Fetal Brain 2016.02-2016.09
Tsinghua University
Researched motion correction and 3D reconstruction of multi-slice fetal brain MR images
Set up a motion correction platform

Research on Attenuation Correction of PET/MRI 2016.05-2016.11
Tsinghua University
Estimated attenuation map based on T2 and UTE MR images using machine learning methods

The research achievements were submitted to ISMRM 2017
Supported by Tsinghua University Initiative Scientific Research Program

Segmentation of Left Atrial Appendage in CT 2016.08-2017.06
Tsinghua University

Used active contour model for left atrial appendage segmentation
Improved the performance of left atrial appendage detection using random forest and Haar-like feature

Ultra-low-dose PET Reconstruction 2017.06-2017.09
Stanford University

Predicted standard-dose PET images from low-dose PET images
Used deep learning and combined multi-contrast MRI

SKILLS

Python, C/C++, MATLAB, LaTeX, Git, TensorFlow
Medical Image Reconstruction, Machine Learning, Deep Learning, Mathematical Optimization, Digital Image Processing

SCHOLARSHIPS & AWARDS

2014—2015 National Scholarship
2015—2016 National Scholarship
2016—2017 Tsinghua-Evergrande Scholarship
2016—2017 Tsinghua-Boeing Scholarship
The 34^{th} Challenge Cup Competition of Science Achievement in Tsinghua, Second Prize

PUBLICATIONS

[1]**Junshen Xu**, Yibo Zhao, Kui Ying. Joint Reconstruction of Simultaneous PET/MR Imaging with Motion Correction Using a B-spline Motion Model. ISMRM 2017
[2]Chang Gao, **Junshen Xu**, Bowen Fan, Jiajin Liu, Kui Ying. Comparison of UTE based Attenuation Correction Methods for simultaneous PET/MR Imaging of the Children's Brain. ISMRM 2017
[3]Yilin Niu, Enhao Gong, **Junshen Xu**, John Pauly, Greg Zaharchuk. Improved Prediction of the Final Infarct from Acute Stroke Neuroimaging Using Deep Learning. ISC 2018
[4]Yilin Niu, Enhao Gong, **Junshen Xu**, John Pauly, Greg Zaharchuk. Multi-scale Patch-wise 3D CNN for Ischemic Stroke Lesion Segmentation. ISLES 2017
[5]**Junshen Xu**, Enhao Gong, Yilin Niu, Mehdi Khalighi, John Pauly, Greg Zaharchuk. Ultra-low-dose PET Reconstruction enabled by Deep Learning and Simultaneous PET/MR. ISMRM-SNMMI Co-Provided Workshop on PET/MRI 2017 (Oral Presentation)
[6]**Junshen Xu**, Enhao Gong, Yilin Niu, John Pauly, Greg Zaharchuk. Evaluation on the Contribution of Multi-contrast MRI to Low-dose PET Reconstruction. ISMRM-SNMMI Co-Provided Workshop on PET/MRI 2017

[7]**Junshen Xu**, Enhao Gong, Mehdi Khalighi, John Pauly, Greg Zaharchuk. Multi-contrast MRI Enhance Ultra-low-dose PET Reconstruction. ISMRM 2018 (Submitted)

[8]Enhao Gong, **Junshen Xu**, John Pauly, Greg Zaharchuk. Deep Learning reduces 99.5% radiation risk for nuclear medicine functional imaging. NIPS 2017 Medical Imaging Workshop (Submitted)

[9]Yilin Niu, Enhao Gong, **Junshen Xu**, Thoralf Thamm, John Pauly, Greg Zaharchuk. Improved Prediction of the Final Infarct from Acute Stroke Neuroimaging Using Deep Learning. ISMRM 2018 (submitted)

[10]Kevin T. Chen, Enhao Gong, Fabiola Bezerra de Carvalho Macruz, **Junshen Xu**, Mehdi Khalighi, John Pauly, Greg Zaharchuk. Ultra-low-dose Amyloid PET Reconstruction using Deep Learning with Multi-contrast MRI Inputs. ISMRM 2018 (submitted)