

Yiang Wang



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🎓 EDUCATION

WUHAN UNIVERSITY, CHINA

SEP.2015 - PRES.

Bachelor of Science(BSc) degree in Physics

[GPA](#) : 3.32/4.0

[Core Subject](#) : Calculus, Linear Algebra, Probability Theory and Statistics, Physics Experiment, Fundamental Chemistry, Experiment of Fundamental Chemistry, Atomic Physics and Nuclear Physics, Quantum Mechanics, Optics, Information Optics, Thermal Physics, Thermodynamics and Statistical Physics, Electromagnetics, Electrodynamics, Mechanics, Theoretical Mechanics, Methods of Mathematical Physics, Solid State Physics, Computational Physics.

📁 RESEARCH EXPERIENCE

DEPARTMENT OF PHYSICS, WUHAN UNIVERSITY

JUN.2018 - PRES.

Under the supervision of Professor Hao Peng and Professor Lei Xing (Stanford)

[Machine learning-based online range and dose verification in proton therapy with an In-beam PET system](#). To reduce the number of detectors and enhance the accuracy of range verification, I trained Long-Short-Term-Memories (LSTM) model to generate one-dimensional dose distribution in patients' body directly based on proton induced radiation signal detected by an In-beam PET system. This work was just finished and the paper has been submitted to *Medical Physics* (I am the second author). Next step I plan to generate three-dimensional dose distribution based on PET or even sonic wave signal by some deep learning algorithms such as GAN.

WUHAN INSTITUTE OF PHYSICS AND MATHEMATICS (WIPM) OF CHINESE ACADEMY OF SCIENCES
FEB.2018 - JUN.2018

Under the supervision of Professor Xin Zhou and Professor Zhaohui Ye

[Medical image processing](#), including segmentation of 3D CT and MRI images, and a joint deformable registration approach to co-register pulmonary CT scans with both 1H and 129Xe MRI. This novel method provides both global measure and local distribution of Chronic Obstructive Pulmonary Disease (COPD) by classifying lung attenuation maps on a voxel-by-voxel basis.

DEPARTMENT OF ELECTRONIC ENGINEERING, WUHAN UNIVERSITY

SEP.2018 - PRES.

Under the supervision of Associate professor Sheng Chang

[Exploit FPGA as artificial neural network \(ANN\) accelerator](#). We exploited FPGA reconfigurability for implementing ANNs, which may offer a promising way to improve the processing capability and achieve higher energy efficiency in the future. My work includes training the neural network, configuring the FPGA and designing digital integrated circuit in the DE1-SoC development board.

🔬 RESEARCH INTERESTS

My research interests include, but not limited to, medical imaging, machine learning, medical image processing and analyzing, Radiation Therapy.

★ SKILLS

PROGRAMMING: Python, MATLAB, C, HTML/CSS, Verilog, LaTeX

IMAGE PROCESSING: SimpleITK, elastix, ANTs

MACHINE LEARNING: Keras, Scikit-learn, Tensorflow

TECHNOLOGIES: Linux, Git, Vim

📖 ACTIVITIES

TEACHING ASSISTANT - (*Scientific Research Training—Advanced Data Analysis and Machine Learning in Physics Science*) - This course is oriented to senior student in the School of Physics and Technology. Fall, 2018

SPORTS COMMITTEE MEMBER - (*Sep.2016 - Pres.*) - in class

UNDERSECRETARY OF PSYCHOLOGICAL ASSOCIATION - (*Oct.2016 - Jun.2017*) - in School of Physics and Technology

★ AWARDS AND HONOURS

SECOND-CLASS SCHOLARSHIP IN WUHAN UNIVERSITY.	OCT. 2018
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HONOR OF EXCELLENT STUDENT IN WUHAN UNIVERSITY.	OCT. 2018
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HONOR OF EXCELLENT STUDENT CADRE IN WUHAN UNIVERSITY.	SEP. 2018
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THIRD-CLASS SCHOLARSHIP IN WUHAN UNIVERSITY.	OCT. 2017
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THIRD-CLASS SCHOLARSHIP IN WUHAN UNIVERSITY.	OCT. 2016
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✍️ PAPERS SUBMITTED/UNDER REVISION

Zhongxing Li, **Yiang Wang**, Kuanjun Fan, Lei Xing and Hao Peng. Machine Learning-based Range and Dose Verification in Proton Therapy Using an In-beam Positron Emission Tomography (PET) System. (Submitted to *Medical Physics*)