Youbao Tang

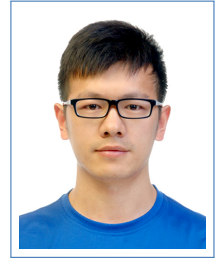## POSTDOCTORAL FELLOW

Radiology and Imaging Sciences
National Institutes of Health (NIH)
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Education

Sep. 2011–Dec. 2016	**Doctor of Computer Applied Technology**, *Harbin Institute of Technology (HIT)*, China, *Recommendation*. Supervisor: Professor Xiangqian Wu Thesis: Research on Visual Saliency Detection Method and Its Application
Sep. 2009–Jul. 2011	**Master of Computer Science and Technology**, *Harbin Institute of Technology (HIT)*, China, *Recommendation*. Supervisor: Professor Xiangqian Wu Thesis: Research on Encryption and Decryption Algorithm based on Non-contact Palmprint Feature
Sep. 2005–Jul. 2009	**Bachelor of Bioinformatics**, *Harbin Institute of Technology (HIT)*, China, *Top 20%*.

Research Interests

PATTERN RECOGNITION: Writer Identification, Palmprint Recognition

COMPUTER VISION: Visual Saliency Detection, Scene Text Detection

MEDICAL IMAGE PROCESSING, BIOMETRICS and DEEP LEARNING

Publications

⋆ indicates equal contribution.

SUBMISSIONS

One paper is submitted to *MIDL 2019*.

One paper is submitted to *CVPR 2019*.

One paper is submitted to *IEEE TMM* under Major Revision.

PREPRINTS

2018	Jinzheng Cai⋆, **Youbao Tang**⋆, Le Lu, Adam P. Harrison, Ke Yan, Jing Xiao, Lin Yang, Ronald M. Summers, "Accurate Weakly Supervised Deep Lesion Segmentation on CT Scans: Self-Paced 3D Mask Generation from RECIST", *arXiv preprint arXiv:1801.08614*.

JOURNALS

2018 **Youbao Tang**, Xiangqian Wu, "Scene Text Detection using Superpixel based Stroke Feature Transform and Deep Learning based Region Classification", *IEEE Transactions on Multimedia*, 20(9):2276-2288, 2018.

2018 Sicheng Zhao, Guiguang Ding, Yue Gao, Xin Zhao, **Youbao Tang**, Jungong Han, Qingming Huang, "Discrete Probability Distribution Prediction of Image Emotions With Shared Sparse Learning", *IEEE Transactions on Affective Computing* (Accepted).

2017 **Youbao Tang**, Xiangqian Wu, "Scene Text Detection and Segmentation via Cascaded Convolution Neural Networks", *IEEE Transactions on Image Processing*, 26(3):1509-1520, 2017.

2016 **Youbao Tang**, Xiangqian Wu, Wei Bu, "Scene Text Detection Based on Multi-Level MSER", *Journal of Zhejiang University (Engineering Science)*, 50(6):1134-1140, 2016.

2015 **Youbao Tang**, Xiangqian Wu, Wei Bu, "Offline Signature Verification Based on ASIFT", *Journal of Beijing University of Aeronautics and Astronautics*, 41(1):110-116, 2015.

2014 Xiangqian Wu (Supervisor), **Youbao Tang**, Wei Bu, "Offline Text-Independent Writer Identification Based on Scale Invariant Feature Transform", *IEEE Transactions on Information Forensics and Security*, 9(3):526-536, 2014.

CONFERENCES

2019 **Youbao Tang**, Ke Yan*, Yuxing Tang*, Jiamin Liu*, Jing Xiao, Ronald M. Summers, "ULDor: A Universal Lesion Detector for CT Scans with Pseudo Masks and Hard Negative Example Mining", *IEEE International Symposium on Biomedical Imaging (ISBI)*.

2019 Yuxing Tang, **Youbao Tang**, Mei Han, Jing Xiao, Ronald M. Summers, "Abnormal Chest X-ray Identification with Generative Adversarial One-Class Classifier ", *IEEE International Symposium on Biomedical Imaging (ISBI)*.

2019 **Youbao Tang***, Sooyoun Oh*, Yuxing Tang, Jing Xiao, Ronald M. Summers, "CT-Realistic Data Augmentation Using Generative Adversarial Network for Robust Lymph Node Segmentation", *SPIE Medical Imaging*.

2019 Yuxing Tang, **Youbao Tang**, Mei Han, Jing Xiao, Ronald M. Summers, "Deep Adversarial One-class Learning for Normal and Abnormal Chest Radiograph Classification", *SPIE Medical Imaging* [**Oral**].

2018 **Youbao Tang***, Jinzheng Cai*, Le Lu, Adam P. Harrison, Ke Yan, Jing Xiao, Lin Yang, Ronald M. Summers, "CT Image Enhancement Using Stacked Generative Adversarial Networks and Transfer Learning for Lesion Segmentation Improvement", *International Conference on Machine Learning in Medical Imaging (MICCAI-MLMI)* [**Oral**].

2018 **Youbao Tang**, Adam P. Harrison, Mohammadhadi Bagheri, Jing Xiao, Ronald M. Summers, "Semi-Automatic RECIST Labeling on CT Scans with Cascaded Convolutional Neural Networks", *International Conference on Medical Image Computing & Computer Assisted Intervention (MICCAI).*

2018 Jinzheng Cai⋆, **Youbao Tang**⋆, Le Lu, Adam P. Harrison, Ke Yan, Jing Xiao, Lin Yang, Ronald M. Summers, "Accurate Weakly-Supervised Deep Lesion Segmentation using Large-Scale Clinical Annotations: Slice-Propagated 3D Mask Generation from 2D RECIST", *MICCAI.*

2018 Dakai Jin, Ziyue Xu, **Youbao Tang**, Adam P. Harrison, Daniel Mollura, "CT-Realistic Lung Nodule Simulation from 3D Conditional Generative Adversarial Networks for Robust Lung Segmentation", *MICCAI.*

2017 **Youbao Tang**, Xiangqian Wu, "Salient Object Detection with Chained Multi-scale Fully Convolutional Network", *ACM Multimedia Conference (ACMMM).*

2016 **Youbao Tang**, Xiangqian Wu, "Saliency Detection via Combining Region-level and Pixel-level Predictions with CNNs", *European Conference on Computer Vision (ECCV).*

2016 **Youbao Tang**, Xiangqian Wu, Wei Bu"Deeply-Supervised Recurrent Convolutional Neural Network for Saliency Detection", *ACM Multimedia Conference (ACMMM).*

2016 **Youbao Tang**, Xiangqian Wu, "Scene Text Detection via Edge Cue and Multi-Features", *International Conference on Frontiers in Handwriting Recognition (ICFHR).*

2016 **Youbao Tang**, Xiangqian Wu, "Text-independent Writer Identification via CNN Features and Joint Bayesian", *International Conference on Frontiers in Handwriting Recognition (ICFHR).*

2015 **Youbao Tang**, Xiangqian Wu, Wei Bu, "Saliency Detection Based on Graph-Structural Agglomerative Clustering", *ACM Multimedia Conference (ACMMM).*

2014 **Youbao Tang**, Xiangqian Wu, Wei Bu, "Text Line Segmentation Based on Matched Filtering and Top-down Grouping for Handwritten Documents", *International Workshop on Document Analysis Systems (DAS).*

2014 **Youbao Tang**, Wei Bu, Xiangqian Wu, "Text-Independent Writer Identification Using Improved Structural Features", *Chinese Conference on Biometric Recognition (CCBR).*

2013 **Youbao Tang**, Xiangqian Wu, Wei Bu, "Offline Text-independent Writer Identification Using Stroke Fragment and Contour Based Features", *International Conference on Biometrics (ICB).*

2013 **Youbao Tang**, Xiangqian Wu, Wei Bu, Hongyang Wang, "Skew Estimation in Document Images Based on an Energy Minimization Framework", *International Conference on Image Processing, Computer Vision, and Pattern Recognition (IPCV).*

2011 Wei Bu, Qiushi Zhao, Xiangqian Wu, **Youbao Tang**, "A Novel Contactless Multimodal Biometric System Based on Multiple Hand Features", *International Conference on Hand-Based Biometrics (ICHB)*.

2011 Xin Cui, Qiushi Zhao, Xiangqian Wu, **Youbao Tang**, "A Contactless Hand Shape Identification System", *International Conference on Advanced Computer Control (ICACC)*.

2010 Xiangqian Wu, Enying Gao, **Youbao Tang**, Kuanquan Wang, "A Novel Biometric System Based on Hand Vein", *International Conference on Frontier of Computer Science and Technology (FCST)*.

ABSTRACTS

2018 **Youbao Tang**, Adam P. Harrison, Mohammadhadi Bagheri, Jing Xiao, Ronald M. Summers, "Semi-Automatic RECIST Labeling on CT Scans with Cascaded Convolutional Neural Networks", *The Radiological Society of North America (RSNA)*.

2018 **Youbao Tang***, Jinzheng Cai*, Le Lu, Adam P. Harrison, Ke Yan, Jing Xiao, Lin Yang, Ronald M. Summers, "CT Image Enhancement Using Stacked Generative Adversarial Networks and Transfer Learning for Lesion Segmentation Improvement", *The Radiological Society of North America (RSNA)*.

Research Experience

Jul. 2017–Present **NIH-PingAn CRADA Project**, POSTDOCTORAL RESEARCH FELLOW, NIH, Bethesda, MD, USA.
Mentor: Dr. Ronald M. Summers and Dr. Le Lu.
Researching on large-scale medical imaging analysis using deep learning.

Mar. 2016–Dec. 2016 **Research on Signature Video Based Personal Recognition**, NATIONAL NATURAL SCIENCE FOUNDATION, China, Application Writer and Main Researcher.
I was in charge of hand detection and segmentation, and identity recognition via signature video sequences.

Jan. 2015–Dec. 2016 **Research on Automated Fundus Lesion Recogntion Based on Visual Attention Model**, NATIONAL NATURAL SCIENCE FOUNDATION, China, Main Researcher.
I was in charge of salient object detection, segmentation and classification.

Jan. 2014–Dec. 2014 **Research on Palmprint Recognition in Complex Environment**, NATIONAL NATURAL SCIENCE FOUNDATION, China, Main Researcher.
I was in charge of hand segmentation and palmprint image quality assessment.

Jan. 2011–Dec. 2013 **Research on Automatic Diagnosis Techniques of Diabetic Retinopathy Based on Image Recognition**, NATIONAL NATURAL SCIENCE FOUNDATION, China, Main Researcher.
I was in charge of the system implementation.

Feb. 2010–Jul. 2011	**Research on Data Encryption and Decryption Algorithm Based on Palmprint Features**, NATIONAL NATURAL SCIENCE FOUNDATION, China, Main Researcher.
	I was in charge of encryption and decryption algorithm research and system implementation.
Aug. 2009–Jan. 2010	**Research on Contactless Identity Recognition Techniques by Integrating Hand Vein, Handprint, and Handshape**, NATIONAL 863 HIGH-TECH PROGRAM, China, Main Researcher.
	I was in charge of the whole identification system development.

Awards

2018	NIH Fellows Award of Research Excellence (FARE) 2019 competition.
2014	National Scholarship
2014	2nd Price of the Third CCF Youth Internet Entrepreneurship Competition

Skills

Languages	**Mandarin, English**
Programming	**Matlab, C/C++, Python, Java**
Interests	**Basketball (Frequent player), Swimming, Running, Cooking, Singing**

Professional Service

REVIEWER

IEEE Transactions on Information Forensics and Security

IEEE Transactions on Neural Networks and Learning Systems

IEEE Transactions on Multimedia

IEEE Transactions on Circuits and Systems for Video Technology

IEEE Access

Medical Image Analysis

Knowledge-Based Systems

Neurocomputing

American Journal of Roentgenology

Journal of Experimental & Theoretical Artificial Intelligence

IET Image Processing

IET Biometrics

Journal of Electronic Imaging

Journal of Digital Imaging

CVPR 2019, MICCAI 2018, ICME 2019