

# Youbao Tang

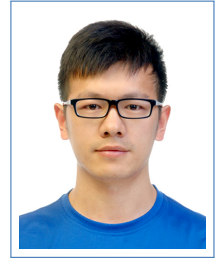
POSTDOCTORAL FELLOW

Radiology and Imaging Sciences  
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📄 <https://tangyoubao.github.io/>



## 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 *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

- 2018 **Youbao Tang**<sup>\*</sup>, Jinzheng Cai<sup>\*</sup>, 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<sup>\*</sup>, **Youbao Tang**<sup>\*</sup>, 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)*.

#### ABSTRACT

- 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)*.

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## 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 Recognition 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.

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## Awards

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

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## Skills

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

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## 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  
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