

Bo-Yuan Feng

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Research Interests	Character Recognition Image Processing Machine Learning Deep Neural Networks	
Personal Skills	C/C++ Programming Unix/Linux Programming Digital Signal Processors (DSPs) Software Development Entry Level GPU Parallel Programming	
Education	School of Computer Science and Engineering Nanjing University of Science & Technology (NUST), Nanjing, China <i>Ph.D. in Computer Science</i> Advisor: Mingwu Ren, PhD, Deputy Director	Sept. 2009 - Present (To be completed in Sept. 2014)
	National Laboratory of Pattern Recognition (NLPR) Institute of Automation, Chinese Academy of Sciences (CASIA), Beijing, China <i>Visiting Researcher in Pattern Recognition</i> Advisor: Cheng-Lin Liu, PhD, Deputy Director	Oct. 2013 - July 2014
	Centre for Pattern Recognition and Machine Intelligence (CENPARMI) Concordia University , Montreal, Quebec, Canada <i>Visiting Researcher in Computer Science</i> Advisor: Ching Y. Suen, PhD, Director of CENPARMI	Sept. 2012 - Sept. 2013
	School of Computer Science and Engineering Nanjing University of Science & Technology (NUST), Nanjing, China <i>B.S. in Computer Science</i>	Sept. 2005 - July 2009
Awards	Excellent Graduate Student First Prize Scholarship (twice) The National Innovation Cup 3rd-prize of Jiangsu Province Excellent Student Awards Special Award Scholarship	2009 - 2011 2005 - 2009
Research Experiences	Ph.D. Candidate: NUST <ul style="list-style-type: none">Thesis on the recognition of serial numbers in bank notes including data collection, preprocessing, character extraction and recognition.	Sept. 2009 - Present

- Achieved the accuracy of 99.5% for a real-time automated target scoring & reporting system for outdoor shooting practice by applying target loop modeling, object detection, and image stabilization.
- Developed image processing algorithms using TI DSP series of DM 648 and DM 6446 (ARM 9 and Video Cores) on Windows and Linux platforms.
- Focused on TCP/IP socket programming, infrared camera driver developing, and computer vision algorithm transplant.

Visiting Researcher: NLPR, CASIA

Oct. 2013 - July 2014

- Researched on license plate detection aiming for fast and accurate detection in live videos.
- Proposed a new real-time license plate detection method using fast candidate region selection and covariance feature based filtering.
- Reported the detection precision and recall of 97.82 % and 98.90 % tested by 1000 natural scene images.

Visiting Researcher: CENPARMI, Concordia University Oct. 2012 - Sept. 2013

- Focused on the recognition of serial numbers in RMB (renminbi bank note, the paper currency used in China).
- Presented a new method that extracts the serial number characters directly from scanned RMB images.
- Comprehensively implemented and evaluated the state-of-art character recognition methods on the collected RMB serial number database including three feature extraction methods, four classifiers (including CNN), three distortions, and five multiple classifier combination strategies and rejection schemes.
- The best recognition rate of 99.67% had been achieved on the RMB database.

Publications

1. **Bo-Yuan Feng**, Mingwu Ren, Xu-Yao Zhang, and Ching Y. Suen. Automatic recognition of serial numbers in bank notes. **Pattern Recognition**, 2014.
2. **Bo-Yuan Feng**, Mingwu Ren, Xu-Yao Zhang, and Ching Y. Suen. Extraction of serial numbers on bank notes. International Conference on Document Analysis and Recognition (**ICDAR**), 2013. *Poster*
3. **Bo-Yuan Feng**, Mingwu Ren, Xu-Yao Zhang, and Cheng-Lin Liu. Effective License Plate Detection Using Fast Candidate Region Selection and Covariance Feature based Filtering. IEEE International Conference on Advanced Video and Signal-Based Surveillance (**AVSS**), 2014. *Oral*
4. **Bo-Yuan Feng**, Mingwu Ren, Xu-Yao Zhang, and Ching Y. Suen. Part-Based High Accuracy Recognition of Serial Numbers in Bank Notes. International Workshop on Artificial Neural Networks in Pattern Recognition (**ANNPR**), 2014. *Oral*