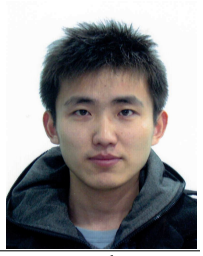
Curriculum Vitae



Personal Details

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Contacts

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Research Interests

Computer Vision, Object Tracking, Object Recognition, Machine Learning, Deep Learning, Neural Networks

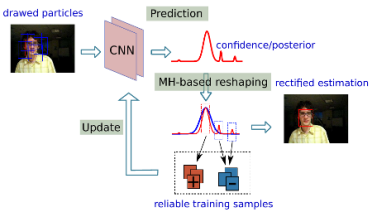
Qualifications

Jul. 2010 - Present	**Ph.D.**	Computer Science & Technology	**Northwestern Polytechnical University**
Sept. 2006 - Jul. 2010	**B.S.**	Computer Science & Technology	**Northwestern Polytechnical University**

Project Experience

2014.07 ~ 2015.02

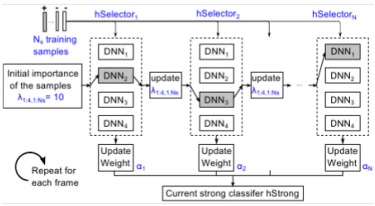
Online Object Tracking Based on Convolutional Neural Networks (CNNs)



We propose a robust online tracking approach for general objects with a convolutional neural network (CNN) based appearance model. To alleviate the problems incurred by immediately using CNN for online tracking task, we presented a re-sampling method over particles with a variation of Metropolis-Hastings algorithm to gain better posteriors, and draw a set of more reliable training samples to feed CNN at the same time.

2013.06 ~ 2014.03

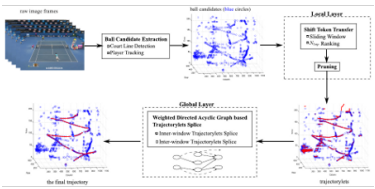
Object Tracking using Deep Learning Technology



We tackle the generic object tracking problem by a novel approach that incorporates a deep learning architecture with an on-line AdaBoost framework. Inspired by its multi-level feature learning ability, a stacked denoising autoencoder (SDAE) is used to learn multi-level feature descriptors from a set of auxiliary images.

2012.04 ~ 2012.12

Ball Trajectory Tracking in Tennis Game Video



A two layered data association method to improve the robustness of tennis ball tracking. At the local layer, a shift token transfer method is proposed, based on shift window processing, to generate a set of short trajectories or "trajectorylets". At the global layer, a unique ball trajectory is obtained by applying a dynamic programming based splice method to a directed acyclic graph consisting of trajectorylets.

2011.05 ~ 2011.12

Towards a Queue-Aware ATM: Monitoring and Managing Queues in front of ATMs

We apply a real-time object tracking approach based on a stereo camera placed in front of ATM machines. With the aid of camera's real-time monitoring, tracking and counting, a queue-aware system is implemented to provide each arriving customer a suggested queue number and estimated corresponding queuing time.

2010.09

Keyword Spotting based Real-time Dialog System

This is a real-time dialog system implemented with keyword spotting approach so as to receive spontaneous speeches from general users. The question-set is predefined by user and can be changed easily, so it's applicable to many specific scenarios with limited question-set running on PC.

2010.09

Keyword Spotting Tool

A Chinese keyword spotting tool which keywords set can be online defined (add/remove) by users easily. This tool receives a spontaneous speech from user via microphone and picks out all keywords defined in the speech. This tool embeds a speech recognition component and all keywords are presented in term of text and Chinese PinYin.

Skills

- C/C++
- Matlab
- Emacs
- Linux/Ubuntu
- Python
- English
- OpenCV
- LaTeX

Honors and Awards

2014	The Paper of ICIP 2014 was recognized as the Top 10% papers
2014	Received IEEE Signal Processing Society Travel Grant to Attend ICIP 2014, Paris, France
2013	Received IEEE Signal Processing Society Travel Grant to Attend ICASSP 2013, Vancouver, Canada
2011	Awarded by Northwestern Polytechnical University Scholarship Fund for Six-month Visiting Researcher
2010	First Prize Scholarship of Northwestern Polytechnical University
2009	National Endeavor Scholarship
2009	First Prize of C Programming Contest of Northwestern Polytechnical University
2009	First Prize Scholarship of Northwestern Polytechnical University
2008	National Endeavor Scholarship
2008	First Prize Scholarship of Northwestern Polytechnical University
2007	Second Prize of ACM Programming Contest of Northwestern Polytechnical University
2007	First Prize Scholarship of Northwestern Polytechnical University
2007	Third Prize of Mathematical Modeling Contest of Northwestern Polytechnical University

Activities

Dec. 5 - 7, 2014	**Technical Chair** on the 7th International Doctoral Forum
Oct. 28, 2014	**Oral Presentation** on ICIP 2014
May 30, 2013	**Poster Presentation** on ICASSP 2013
Mar., 2012 - Sept., 2012	**Visiting Researcher** at University of East Anglia, Norwich, U.K.
Apr., 2011 - Oct., 2011	**Conference Organizing Committee Member** for APSIPA ASC 2011
Nov. 23 - 25, 2010	**Oral Presentation** on ICALIP 2010
Oct. 26 - 29, 2010	**Invited Demonstration** for UIC/ATC 2010
Jul., 2009	**Intern** at China Pacific Insurance (Group) Co., Ltd.
Jun., 2009	**Intern** at KunShan (Suzhou) Ambow Software Training Base

Publications

[1] **Xiangzeng Zhou**, Lei Xie, and Peng Zhang. Online object tracking based on cnn with metropolis-hasting re-sampling. In *ACM Multimedia (ACMMM)*, Brisbane, Australia, 2015 (submitted).

[2] **Xiangzeng Zhou**, Lei Xie, Qiang Huang, and Stephen J. Cox. Tennis ball tracking using a two-layered data association approach. *IEEE Transactions on Multimedia (TMM)*, 2015.

[3] **Xiangzeng Zhou**, Lei Xie, Peng Zhang, and Yanning Zhang. An ensemble of deep neural networks for object tracking. In *IEEE International Conference on Image Processing (ICIP)*, Paris, France, 2014.

[4] **Xiangzeng Zhou**, Qiang Huang, Lei Xie, and Stephen J. Cox. A two layered data association approach for ball tracking. In *IEEE International Conference on Acoustics, Speech, and Signal Processing (ICASSP)*, Vancouver, Canada, 2013.

[5] Qiang Huang, Stephen J. Cox, **Xiangzeng Zhou**, and Lei Xie. Detection of ball hits in a tennis game using audio and visual information. In *IEEE Asia-Pacific Signal Information Processing Association Annual Summit and Conference (APSIPA ASC)*, pages 1–10, Hollywood, California, 2012.

[6] Bingfeng Li, Lei Xie, **Xiangzeng Zhou**, Zhonghua Fu, and Yanning Zhang. Real-time speech-driven virtual avatar. In *National Conference on Man-Machine Speech Communication (NCMMSC)*, Xi'an, China, 2011.

[7] Jianwei Niu, Lei Xie, Xiaoming Lu, **Xiangzeng Zhou**, and Yanning Zhang. Multi-confidence feature integration for utterance rejection in robust speech recognition. In *National Conference on Man-Machine Speech Communication (NCMMSC)*, page 4, Xi'an, China, 2011.

[8] Lei Xie, Wenhuai Zhao, **Xiangzeng Zhou**, Xiaohai Tian, Bingfeng Li, Naicai Sun, Yali Zhao, and Yanning Zhang. Speech and auditory interfaces for ubiquitous, immersive and personalized applications. In *Immersive and Personalized Applications, Ubiquitous Intelligence Computing and the 7th International Conference on Autonomic Trusted Computing (UIC/ATC)*, Xi'an, China, 2010.