Ce Li

CONTACT INFORMATION

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RESEARCH INTERESTS

Computer Vision: action understanding, event detection, trajectory analysis, video analysis
Machine Learning: supervised learning, dictionary learning, deep learning

EDUCATION

University of Chinese Academy of Sciences, Beijing, China

School of Electronic, Electrical and Communication Engineering

- **Ph.D.**, Computer Application Technology   09/2012 - 07/2015
  - Thesis Proposal: *Object action analysis in video surveillance*
  - Supervisors: Prof. Jianbin Jiao, Prof. Qixiang Ye, and Prof. Zhenjun Han

School of Engineering and Information Technology

- **M.S.,** Logistics Engineering (Computer Application)   09/2009 - 07/2012
  - Thesis: *Visual abnormal behavior detection based on trajectory sparse reconstruction analysis*
  - Supervisors: Prof. Jianbin Jiao, Prof. Qixiang Ye, and Prof. Zhenjun Han

Tianjin University, Tianjin, China

Dept. of Software Engineering

- **B.E.,** major in Software Engineering   09/2004 - 06/2008
  - Thesis: *3D mesh digital zero-watermark algorithm research based on SVD*
  - Supervisors: Prof. Jiawan Zhang

Nankai University, Tianjin, China

Dept. of Economics

- **B.E.,** minor in **Finance**   03/2005 - 06/2008
  - Thesis: *The study on development of investment fund in China*
  - Supervisors: Prof. Dianfa Chen

RESEARCH EXPERIENCE

Computer Science and Technology, China University of Mining & Technology，Beijing

- **Research Assistant and Lecturer**   07/2015 to *present*
- Development and application of cognitive theories based on video understanding. Involved stereo vision, feature representation, and deep learning.

Pattern Recognition and Intelligent System Development Laboratory, University of Chinese Academy of Sciences

Supervised by Prof. Jianbin Jiao, Prof. Qixiang Ye and Prof. Zhenjun Han

- **Research Assistant**   09/2012 to 07/2015
- Experience in transferring knowledge on computer vision, pattern recognition, and machine learning

to practical problems.

- Development and application of cognitive theories based on object tracking and action understanding. Involved stereo vision, feature representation, layered graph, sparse reconstruction, locality sparse analysis modeling and dictionary learning.
- Experience in the following projects using C++, Matlab, Opencv and cvx library:
  - ✧ Visual abnormal behavior detection based trajectory sparse reconstruction analysis (*10/2013-07/2015*),
  - ✧ Threat object tracking and anomaly detection on mobile platform (*05/2012-07/2015*),
  - ✧ Threat targets approaching aircraft tracking and behavior prediction based on multi-source data fusion (*01/2011-12/2013*),
  - ✧ Airborne infrared video stabilization and target tracking (*09/2011*),
  - ✧ Intelligent 360 panorama monitoring system (*03/2010-01/2011*).
- Development of computer vision-based solutions on trajectory classification, abnormal behavior detection, event detection in video surveillance.

Multimedia Learning Group, Institute of Digital Media, Peking University

Supervised by Prof. Tiejun Huang

- **Visiting Student**   11/2012 - 01/2013
- Experience in surveying action understanding and applications.
- Development of the action recognition solution using sequence discriminant learning.

Computer Graphics and Visualization Laboratory, Tianjin University

Supervised by Prof. Jiawan Zhang

- **Research Student**   09/2006 - 07/2008
- Experience in several projects using C++ and OpenGL library: 3D mesh zero-watermark based on SVD, acceleration algorithm on wavelet transform and JPEG2000 compress technology.

PUBLICATIONS   **Journal**

[1]. Shan Gao, Zhenjun Han, **Ce Li**, Qixiang Ye, and Jianbin Jiao. Real-Time Multipedestrian Tracking in Traffic Scenes via an RGB-D-Based Layered Graph Model [J]. *IEEE Transaction on Intelligent Transportation Systems (TITS)*, 2015.

[2]. Xiaogang Chen, Qixiang Ye, Jialing Zou, **Ce Li**, Yanting Cui, and Jianbin Jiao. Trajectory analysis via replicated softmax based model [J]. *Signal, Image and Video Processing (SIVP)*, 2013.

[3]. **Ce Li**, Zhenjun Han, Qixiang Ye, and Jianbin Jiao. Visual abnormal behavior detection based on trajectory sparse reconstruction analysis [J]. *Neurocomputing,* vol.119, pp.94-100, 2013.

Conference

[4]. **Ce Li**, Zhenjun Han, Qixiang Ye, Shan Gao, Lijin Pang, and Jianbin Jiao. Locality-constrained sparse reconstruction for trajectory classification. *International Conference on Pattern Recognition (ICPR)*, 2014.

[5]. Wei Yang, Liguo Zhang, Wei Ke, **Ce Li**, and Jianbin Jiao. Minimum entropy models for laser line extraction[C]. *Proceedings of Computer Analysis of Images and Patterns (CAIP)*, 2013:499-506.

[6]. Shan Gao, Zhenjun Han, **Ce Li**, and Jianbin Jiao. Real-time multi-pedestrian tracking based on vision and depth information fusion [C]. *Proceedings of Pacific-Rim Conference on Multimedia (PCM)*, 2013:708-719.

[7]. Yifei Liu, Zhenjun Han, Qixiang Ye, Jianbin Jiao, and **Ce Li**. Sparse feature representation for visual tracking [C]. *IEEE Int'l Conf. Systems and Informatics (ICSI)*, 2012.

[8]. **Ce Li**, Zhenjun Han, Qixiang Ye, and Jianbin Jiao. Abnormal behavior detection via sparse reconstruction analysis of trajectory [C]. *Proceedings of the 6th International Conference on Image and Graphics (ICIG)*, 2011:807-810.

Book

[9]. Jianbin Jiao, Qixiang Ye, Zhenjun Han and **Ce Li**. *Visual Target Detection and Tracking* [M]. P Science Press in China, 2014. (in press)

HONORS AND AWARDS	
Outstanding Student Award, Chinese Academy of Sciences (5%)	2014
Excellent Ph.D of Zhuli Yuehua Scholarship, Chinese Academy of Sciences	2014
Principal Scholarship, Chinese Academy of Sciences (5%)	2013
National Scholarship, China (3%)	2013
Outstanding Paper Award, Pattern Recognition and Intelligent System Development Laboratory, University of Chinese Academy of Sciences	2012
Excellent Student Worker, University of Chinese Academy of Sciences	2010
Merit Student Scholarship, University of Chinese Academy of Sciences	2010,2012
Academic Scholarship for Merit Student, Tianjin University	2006,2007
Honorable Mention of ACM/ICPC Asia Programming Contest, Beijing Site	2006
Merit Student Prize in Shanxi Province, China (5%)	2004

OTHER EXPERIENCE

University of Chinese Academy of Sciences, Beijing

- **Teaching Assistant**　　　　　　　　　　　　　　　　2009 to *present*
- Courses in three semesters: Data mining and information retrieval, Digital image processing.

VISTO Technology Ltd., Tianjin

Mentors: Sherry Tian and Xiaoshu Zhao

- **Software Engineer Intern**　　　　　　　　　　　04/2008 – 08/2008
- Experience in multi-platform Javamail system and software development using J2ME、Servlet、MIDlet.

Dept. of Software Engineering, Tianjin University

Supervised by Prof. Linying Xu

- **Project Developer**　　　　　　　　　　　　　　07/2007 – 08/2007
- Experience in software modeling and design, software requirement specification of C2C e-commerce system.
- Development of project model using C#, Asp.net and SQL Server.

TJU ACM/ICPC Team, Tianjin University

Supervised by Prof. Ruiguo Yu

- **Member of TJU ACM/ICPC team in North China Contest**　　09/2005 – 07/2007
- Experience in information numeric theory and algorithms.
- Practice in map, searching, dynamic programming using C/C++.

PROGRAMMING SKILLS

- C/C++, Matlab, Python, Opencv, cvx, libSVM.

COMMUNICATION SKILLS

- Poster at the International Conference on Pattern Recognition in 2014.
- Oral Presentation at the International Conference on Image and Graphics in 2013.
- Presentation at the Pattern Recognition and Multimedia Computing Seminar in 2011.

LANGUAGES

- English　Advanced　　　　　Good communication and writing skills

HOBBIES

- Sudoku, Marathon