

# Xiangyong Cao

*PhD Candidate*

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## Basic Information

- Gender: Male
- Date of Birth: April 5, 1990
- Place of Birth: Chongqing, P. R. China
- Citizenship: P. R. China

## Education

- 2016.9 - 2017.9 **Visiting Scholar in Electrical Engineering and Data Science Institute, Columbia University, New York, USA.**  
Supervisor: Prof. John Paisley
- 2012.9 - 2016.9 **Master-Doctor Combined Program in Applied Mathematics, School of Mathematics and Statistics at Xi'an Jiaotong University, Xi'an, P. R. China.**  
Supervisor: Prof. Zongben Xu
- 2008.9 - 2012.6 **Bachelor of Information and Computing Science, School of Mathematics and Statistics at Xi'an Jiaotong University, Xi'an, P. R. China.**

## Bachelor thesis

- title *Research on the relationship between low-rank matrix factorization and robust principal component analysis*
- supervisor Prof. Zongben Xu and Prof. Deyu Meng

## Research Interest

Machine learning, Data Mining and Computer Vision. Current focuses:

- Low-rank matrix factorization
- Probabilistic models and inference methods
- Hyperspectral Image Denosing and Classification
- Network Analysis
- Deep Learning

## Teaching Experience

- 2012.3 - 2012.6 **Teaching Assistant, School of Mathematics and Statistics, Xi'an Jiaotong University, Xi'an, P. R. China.**  
Subject: Advanced Mathematics

## Publications

- [1] **Xiangyong Cao**, Xiangyu Chang, and Zongben Xu. [Community Detection for Clustered Attributed Graphs via a Variational EM Algorithm](#). Proceedings of the 2014 International

Conference on Big Data Science and Computing, 2014.

- [2] **Xiangyong Cao**, Yang Chen, Qian Zhao, Deyu Meng, Yao Wang, Dong Wang, and Zongben Xu. [Low-rank Matrix Factorization under General Mixture Noise Distributions](#). IEEE International Conference on Computer Vision, 2015 (Oral, Accept rate 3.3%).
- [3] **Xiangyong Cao**, Qian Zhao, Deyu Meng, Yang Chen and Zongben Xu. [Robust Low-rank Matrix Factorization under General Mixture Noise Distributions](#). *Transactions on Image Processing*, 2016.
- [4] Xiangyu Chang, **Xiangyong Cao**, Dong Liang and Xiaolin Lu. [Model-based clustering with nonconvex penalty](#). *IEEE International Conference on Cyber Technology in Automation, Control, and Intelligent Systems (CYBER)*, 2016.
- [5] **Xiangyong Cao**, Lin Xu, Deyu Meng, Qian Zhao, Zongben Xu. [Integration of 3-Dimensional Discrete Wavelet Transform and Markov Random Field for Hyperspectral Image Classification](#). *NeuroComputing*, 2016.
- [6] Jing Yao, **Xiangyong Cao**, Qian Zhao, Deyu Meng, Zongben Xu. [Robust Subspace Clustering via Penalized Mixture of Gaussian](#). (co-first author) *NeuroComputing*, 2017.
- [7] Yang Chen, **Xiangyong Cao**, Qian Zhao, Deyu Meng, Zongben Xu. [Denoising Hyperspectral Image with Non-i.i.d Noise Structure](#). *Transactions on Cybernetics*, 2017.
- [8] Lin Xu, Xia Liu, **Xiangyong Cao**. [Orthogonal Super Greedy Algorithm for Sparse Extreme Learning Machine](#). *International Conference on Extreme Learning Machines*, 2016.
- [9] Haixia Bi, Lin Xu, **Xiangyong Cao**, Zongben Xu. [Polar Image Classification based on Three-Dimensional Wavelet Texture Features and Markov Random Field](#). *IGARSS*, 2017.
- [10] **Xiangyong Cao**, Feng Zhou, Lin Xu, Deyu Meng, Zongben Xu. [Hyperspectral Image Segmentation with Markov Random Fields and a Convolutional Neural Network](#). *Submitted to Transactions on Image Processing*.
- [11] Lin Xu, **Xiangyong Cao**, Xia Liu, Yi Fang. [Orthogonal Super Greedy Algorithm for Sparse Feedforward Neural Network](#). *Submitted to Transactions on Cybernetics*.
- [12] Xiangyu Chang, **Xiangyong Cao**, Yuewen Liu. [A Mixture Model for Directed Graph with Free Expected In-degree](#). *Submitted*.
- [13] Haixia Bi, Lin Xu, **Xiangyong Cao**, Zongben Xu. [Polar Image Classification with 3-D Wavelet Texture Features and Markov Random Field](#). *Submitted to IEEE Geoscience and Remote Sensing Letters*.

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## Social Services

2014.3 - present **Monitor** of our PhD class at Xi'an Jiaotong University.

2012.9 - 2013.9 **Monitor** of our graduate class at Xi'an Jiaotong University.

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## Honors/Awards

2013 **National Scholarship for Graduate students.**

Awarded to the top 2% graduate students at Xi'an Jiaotong University

2012 **Excellent Graduate, Xi'an Jiaotong University.**

Awarded to the top 10% graduates at Xi'an Jiaotong University

- 2009 & 2011 **Excellent Student, Xi'an Jiaotong University.**  
Awarded to the top 10% undergraduate students at Xi'an Jiaotong University
- 2011 **National Scholarship for Encouragement.**  
Awarded to the top 5% undergraduate students at Xi'an Jiaotong University
- 2009 & 2010 **Si Yuan Scholarship for excellent students.**  
Awarded to the top 15% undergraduate students at Xi'an Jiaotong University

## Travel History

Chile, 2015

New York, US, 2016

## Languages

Mandarin **Fluent**

*Native*

English **Good Level**

*Passed College English Test Band 6*

## Computer Skills

Platforms Windows, Linux

Languages Python, Matlab, Mathematics, C++

Others  $\text{\LaTeX}$ , Microsoft Office, Tensorflow