

Zengjie Song

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Education

Xi'an Jiaotong University (XJTU)

Xi'an, China

Ph.D. in Statistics

Mar. 2015 - PRESENT

- Supervisor: [Prof. Jiangshe Zhang](#)
- Thesis: Brain-inspired Machine Learning Models and Algorithms with Applications in Image Processing
- External Examiner: [Prof. Xiangchu Feng](#), Internal Examiner: [Prof. Jian Sun](#)

XJTU

Xi'an, China

M.S. in Applied Mathematics

Sep. 2013 - Feb. 2015

- Supervisor: [Prof. Jiangshe Zhang](#)
- Finished 3-year program in 2 years, enrolled as doctorate student one year ahead.

XJTU

Xi'an, China

B.S. in Applied Mathematics (**Mathematics Elite Program**)

Aug. 2009 - Jun. 2013

Research Experience

Department of Computer Science, University of Illinois at Urbana-Champaign

Urbana, U.S.A.

Visiting Ph.D. Student, Supervisor: [Prof. Oluwasanmi Koyejo](#)

Oct. 2017 - Oct. 2018

- Designed two deep neural networks (mddAE and CDNet) to learn controllable disentangled image representations, where the CDNet model leverages GANs to improve the output image quality.

Department of Statistics, XJTU

Xi'an, China

Research Assistant, Supervisor: [Prof. Jiangshe Zhang](#)

Mar. 2015 - Sep. 2017

- Proposed an improved predictive coding model (FIPC) with the fast inference function for feature extraction and image classification.

Department of Applied Mathematics, XJTU

Xi'an, China

Research Assistant, Supervisor: [Prof. Jiangshe Zhang](#)

Sep. 2013 - Feb. 2015

- Proposed a no-reference JPEG image quality assessment index (ISNIQI), which employs the image saliency map to weigh qualities of different image regions accordingly.

National University of Defense Technology

Changsha, China

Member of the Summer School for Graduate Students in Applied Mathematics

Jul. 2013 - Aug. 2013

- Studied the mathematical knowledge and techniques about optimization methods in information processing.

Publications & Preprints

1. **Zengjie Song**, Oluwasanmi Koyejo, Jiangshe Zhang. Controllable Disentanglement Network. *Submitted to IEEE Transactions on Cybernetics (T-CYB)*, major revision, 2019. (pdf coming soon)
2. Kai Sun, Jiangshe Zhang, Junmin Liu, Ruixuan Yu, and **Zengjie Song**. DRCNN: Dynamic Routing Convolutional Neural Network for Multi-view 3D Object Recognition. *Submitted to IEEE Conference on Computer Vision and Pattern Recognition (CVPR)*, under review, 2019.
3. **Zengjie Song**, Oluwasanmi Koyejo, Jiangshe Zhang. Learning Controllable Disentangled Representations with Decorrelation Regularization. *arXiv preprint arXiv:1912.11675*, 2019. (pdf)
4. **Zengjie Song**, Jiangshe Zhang, Guang Shi, and Junmin Liu. Fast Inference Predictive Coding: A Novel Model for Constructing Deep Neural Networks. *IEEE Transactions on Neural Networks and Learning Systems (T-NNLS)*, 30(4): 1150-1165, 2019. (pdf)
5. Peiju Chang, Jiangshe Zhang, Junying Hu, and **Zengjie Song**. A Deep Neural Network Based on ELM for Semi-supervised Learning of Image Classification. *Neural Processing Letters (NPL)*, 48(1): 375-388, 2018. (pdf)

6. **Zengjie Song**, Jiangshe Zhang, and Junmin Liu. No-Reference Image Quality Assessment Using Image Saliency for JPEG Compressed Images. *Journal of Imaging Science and Technology*, 60(6): 60503-1-60503-8, 2016. ([pdf](#))

Projects (participated)

1. **Research on Deep Neural Networks and Fast Inference Methods Based on Predictive Coding**, National Science Foundation of China (61976174)
2. **Research on Learning Deep Architecture with Asymmetry Forward and Backward Connections**, National Science Foundation of China (61572393)

Teaching Experience

XJTU

Teaching Assistant, *Undergraduate Thesis Design*

Xi'an, China

Spring 2015, Spring 2016, Spring 2017

XJTU

Teaching Assistant, *Advanced Mathematics*

Xi'an, China

Fall 2014

Scholarships & Awards

2018	"Hao Jianxue" Principal Class Scholarship , XJTU	<i>China</i>
2018	Overseas Visiting Scholarship for Graduate Students , XJTU	<i>China</i>
2017	Scholarship for Visiting Ph.D. Student , China Scholarship Council (CSC)	<i>China</i>
2014	"Huang Qianheng" First Grade Scholarship , XJTU	<i>China</i>
2014	Outstanding Graduate Student , XJTU	<i>China</i>
2012	Siyuan Scholarship , XJTU	<i>China</i>

Skills

Programming Python, Matlab, \LaTeX
Languages Chinese and English