Zhifei Zhang

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EDUCATION

PhD candidate in Computer Engineering, Jun. 2014 - Present
The University of Tennessee, Knoxville, TN, USA

PhD student in Mechanical Engineering, Sep. 2013 - Jun. 2014
Oregon State University, Corvallis, OR, USA

M.S. in Electrical Engineering, Sep. 2010 - Jun. 2013
Zhejiang University, Hangzhou, Zhejiang China

B.S. in Electrical Engineering, Sep. 2006 - Jun. 2010
Northeastern University, Shenyang, Liaoning China

RESEARCH INTEREST

Machine Learning and Computer Vision

- Deep learning on generative modeling and image synthesis.
- Action recognition, and object detection/segmentation

TECHNOLOGY SKILLS

Programming Languages: Python, C/C++.
Deep Learning Tools: TensorFlow.

EXPERIENCE

Deep Learning Research Intern Sep. 2017 - March. 2018
Adobe, San Jose, CA, USA

- Reference-based single image super-resolution.
- Style transfer with super-resolved details.

Research Fellow May. 2017 - Aug. 2017
GE Global Research Center, Niskayuna, NY, USA

- Anomaly detection (unsupervised and weakly-supervised).
- Image segmentation (supervised and weakly-supervised).

Research Assistant Jun. 2014 - Present
The University of Tennessee, Knoxville, TN, USA

- Image generation, transformation, and morphing by GANs.
- Mobile Sensor Platforms, autonomous driving and cooperating in tasks.
- Human action recognition through delay embedding (topological analysis).

Research Assistant Sep. 2013 - Jun. 2014
Oregon State University, Corvallis, OR, USA

- DARPA Robotic Challenge, responsible for the part of object grasping
- Developed a framework of learning natural grabbing from human.

Software Engineer Jun. 2013 - Aug. 2013
SIASUNRobot, Shenyang, Liaoning, China

- Developed a portrait painting algorithm for a humanlike robot.

Research Assistant Sep. 2011 - Feb. 2013
Zhejiang University, Hangzhou, Zhejiang, China

- Developed a vision-based tracking system for unmanned helicopter.
- Investigated the vision algorithm simulating human visual cortex, i.e., CNN.

Software Engineer Jun. 2011 - Sep. 2011
Alibaba.com (Global trade), Hangzhou, Zhejiang, China

- Developed automatic inspector for on-line payment reliability.

Team Lead in Two National Competitions Sep. 2006 - Jun. 2010
Northeastern University, Shenyang, Liaoning, China

- Developed an small autonomous driving car.
- Developed a vision-based device for driver fatigue detection.

PUBLICATION

Z. Zhang, Y. Song, and H. Qi. "Decoupled Learning for Conditional Adversarial Networks." *WACV*, 2018.

Y. Song, **Z. Zhang**, and H. Qi. "Cross domain Face Composition and Synthesis from Limited Facial Parts." *AAAI Conference on Artificial Intelligence*, 2018.

Z. Zhang, Y. Song, and H. Qi. "Achieving Online and Real-time Action Recognition in the Embedding Space." *IEEE Transactions on Image Processing*, (under review).

Z. Zhang, Y. Song, and H. Qi. "Stabilizing the Conditional Adversarial Network by Decoupled Learning." *ICML Workshop on Implicit Models*, 2017.

Z. Zhang, Y. Song, and H. Qi. "Generative Adversarial Networks Powered by Autoencoding-A Theoretic Reasoning." *ICML Workshop on Implicit Models*, 2017.

Y. Song, **Z. Zhang**, and H. Qi. "Recursive Cross-Domain Face/Sketch Generation from Limited Facial Parts." *ICML Workshop on Implicit Models*, 2017.

Z. Zhang, Y. Song, and H. Qi. "Age Progression/Regression by Conditional Adversarial Autoencoder." *CVPR*, 2017. (**Spotlight**)

Y. Song, W. Wang, **Z. Zhang**, Y. Liu, and H. Qi. "Multiple Event Detection and Recognition for Large-scale Power Systems through Cluster-based Sparse Coding." *IEEE Transactions on Power Systems (TPS)*, 2017.

Z. Zhang, Y. Song, H. Cui, J. Wu, F. Schwartz, and H. Qi. "Topological Analysis and Gaussian Decision Tree: Effective Representation and Classification of Biosignals of Small Sample Size." *IEEE Transactions on Biomedical Engineering*, 2016.

Z. Zhang, Y. Song, W. Wang, and H. Qi. "Derivative Delay Embedding: Online Modeling of Streaming Time Series." *CIKM*, 2016. (**Oral**)

Y. Song, **Z. Zhang**, A. Rahimpour, L. Liu, and H. Qi. "Dictionary Reduction: Beyond Compact Dictionary Learning for Classification." *ACCV*, 2016.

Z. Zhang, Y. Song, H. Cui, J. Wu, F. Schwartz, and H. Qi. "Early Mastitis Diagnosis through Topological Analysis of Biosignals from Low-Voltage Alternate Current Electrokinetics." *EMBC*, 2015.

A. Taalimi, A.Rahimpour, C.Capdevila, **Z. Zhang**, and H. Qi. "Robust Coupling in Space of Sparse Codes for Multi-View Recognition." *ICIP*, 2016.

Y. Song, W. Wang, **Z. Zhang**, Y. Liu, and H. Qi. "Multiple Event Analysis for Large-scale Power Systems Through Cluster-based Sparse Coding." *IEEE International Conference on Smart Grid Communications*, 2015.

M. Unrath, **Z. Zhang**, A. Goins, R. Carpenter, W.-K. Wong, and R. Balasubramanian. "Using Crowdsourcing to Generate Surrogate Training Data for Robotic Grasp Prediction." *Human Computation and Crowdsourcing, AAAI*, 2014.

Z. Zhang, B. Han, P. Li, Z. Fang, and W. Xu. "Small Unmanned Aerial Vehicle Visual System for Ground Moving Target Positioning." *International Conference on Automatic Control and Artificial Intelligence*, 2012.