Mingyuan ZHOU

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Education

- **Duke University** 08/2008 – 05/2012 (expected)
  Graduate Student, Department of Electrical and Computer Engineering
  Prof. Lawrence Carin's machine learning research group

- **Chinese Academy of Sciences** 09/2005 – 06/2008
  M.Eng., Signal and Information Processing, Graduate University and the Institute of Acoustics
  Communication Acoustics Laboratory, supervised by Prof. Xiaodong Li
  Thesis: On Frequency-Domain Adaptive Filter Algorithms and Their Application to Acoustic Echo Cancellation

- **Nanjing University** 09/2001 – 06/2005
  B.Sc., Acoustics, Department of Electronic Science and Engineering
  State Key Laboratory of Modern Acoustics, supervised by Prof. Xiaojun Qiu
  Thesis: Improvement to the Delayless Subband Adaptive Filters

- **The High School Attached to Hunan Normal University** 09/1998 – 07/2001
  Provincial High School Science Experimental Class

Current Research Interests

- Statistical Machine Learning, Sparse Coding, Dictionary Learning, Sparse Image Representation, Matrix Factorization, Compressive Sensing, Topic Modeling, Manifold Learning, Gene Analysis.

Softwares

1. Matlab codes and inference equations for "Non-Parametric bayesian dictionary learning for sparse image representations" can be found HERE.
2. BPFA Gray-scale and RGB image denoising code (last update 04/15/2010) can be found HERE.
3. BPFA Gray-scale, RGB and Hyperspectral image inpainting & denoising code (last update 04/15/2010) can be found HERE.

Publications

1. **Mingyuan Zhou**, Chunping Wang, Minhua Chen, John Paisley, David Dunson, and Lawrence Carin, "Nonparametric Bayesian Matrix Completion," to appear in the Sixth IEEE Sensor Array and Multichannel Signal Processing Workshop (SAM2010), Israel, Oct. 2010. PDF Code coming soon
2. John Paisley, **Mingyuan Zhou**, Guillermo Sapiro, and Lawrence Carin, "Nonparametric Image Interpolation and Dictionary Learning Using Spatially-Dependent Dirichlet and Beta Process Priors," in Proc. International Conference on Image Processing (ICIP), Hong Kong, Sept. 2010. PDF Code
3. **Mingyuan Zhou**, Haojun Chen, John Paisley, Lu Ren, Lingbo Li, Zhengming Xing, David Dunson, Guillermo Sapiro, and Lawrence Carin, "Nonparametric Bayesian Dictionary Learning for Analysis

of Noisy and Incomplete Images," *submitted to IEEE Trans. Image Process.* PDF Matlab code and test results

4. **Mingyuan Zhou**, Haojun Chen, John Paisley, Lu Ren, Guillermo Sapiro, and Lawrence Carin, "Non-Parametric bayesian dictionary learning for sparse image representations," *Neural Information Processing Systems (NIPS)*, 2009. PDF Matlab codes and Inference equations Slides Poster Video
5. **Mingyuan Zhou**, John Paisley, and Lawrence Carin, "Nonparametric Learning of Dictionaries for Sparse Representation of Sensor Signals," in *Proc. 3rd IEEE Workshop on Computational Advances in Multi-Sensor Adaptive Processing (CAMSAP)*, Aruba, 2009, pp. 237-240. PDF Slides
6. Chengshi Zheng, **Mingyuan Zhou**, and Xiaodong Li, "On the relationship of non-parametric methods for coherence function estimation," *Signal Process.*, vol. 88, pp. 2863-2867, Nov. 2008. PDF
7. **Yin Zhou**, Jialu Chen, and Xiaodong Li, "A time/frequency-domain unified delayless partitioned block frequency-domain adaptive filter," *IEEE Signal Process. Lett.*, vol. 14, pp. 976-979, Dec. 2007. PDF
8. **Yin Zhou** and Xiaojun Qiu, "An error path delay compensated delayless subband adaptive filter architecture," *Signal Process.*, vol. 87, pp. 2640-2648, Nov. 2007. PDF
9. **Yin Zhou** and Xiaodong Li, "A variable step-size for frequency-domain acoustic echo cancellation," in *Proc. 2007 IEEE Workshop on Applications of Signal Processing to Audio and Acoustics (WASPAA'07)*, New Paltz, NY, Oct. 2007, pp. 303-306. PDF
10. Chengshi Zheng, **Yin Zhou**, and Xiaodong Li, "A modified *A Priori* SNR estimator based on the united speech presence probabilities (in Chinese),", *Journal of Electronics & Information Technology*, 2008.
11. **Mingyuan Zhou** and Xiaodong Li, "A magnitude-squared coherence based acoustic echo suppression algorithm (in Chinese)," in *Proc. 2007 Chinese Audio Engineering Society Conference*, Changsha, China, Oct. 2007.
12. **Mingyuan Zhou** and Xiaodong Li, "Acoustic echo suppression for Bluetooth earphone (in Chinese)," Technical Report, 2007.
13. **Yin Zhou** and Xiaodong Li, "Step-size control for the multidelay block frequency-domain adaptive filter algorithm (in Chinese)," in *Proc. 2007 Chinese Young Researchers' Conference on Acoustics (CYCA'07)*, Wuhan, China, Sept. 2007.
14. **Yin Zhou** and Xiaodong Li, "*A Priori* SNR estimation based on the density distribution of *A Posterior* SNR (in Chinese)," in *Proc. 2006 National Conference on Acoustics*, Xiamen, China, Oct. 2006.
15. **Yin Zhou** and Xiaojun Qiu, "The construction of analysis filters in delayless subband adaptive filter (in Chinese)," in *Proc. 2005 Chinese Young Researchers' Conference on Acoustics (CYCA'05)*, Hangzhou, China, Apr. 2005.

Honors and Awards

- Excellent Student Award in the 2006-2007 Academic Year, Chinese Academy of Sciences, 2007.
- Best Undergraduate Thesis Award 2nd Prize, Education Department of Jiangsu Province, 2005.
- Best Paper Award for the 2005 Chinese Young Researchers' Conference on Acoustics, Acoustical Society of China, 2005.
- National Undergraduate Electronic Design Contest – 2004 Embedded System Design Invitational Contest (Intel Cup) 3rd Prize, Higher Education Department of Ministry of Education and Personnel Department of Ministry of Information Industry, 2004.
- Excellent Graduate Student Award, Nanjing University, 2004.
- Excellent Student in the 2002-2003 Academic Year, Nanjing University, 2003.
- Robert Mundell Scholarship, Nanjing University, 2004.
- Renmin Scholarship, Nanjing University, 2nd Prize in 2002 and 1st Prize in 2003.

Selected Courses

Duke University

Random Signals and Noise, Optimal Design of Experiments (Sensing Theory), Bayesian Inference and Decision, Compressive Sensing, Linear Models, Information Theory.

Graduate University of Chinese Academy of Sciences

Modern Digital Signal Processing, Signal Detection and Estimation, Random Processes, Matrix Analysis, Pattern Recognition, Wavelets and Filter Banks.

Nanjing University

Signals and Systems, Digital Signal Processing, Probability Theory and Stochastic Processes, Analog Circuit, Digital Circuit, Radio Frequency Circuit, Telecommunication Theory, Microprocessor and Embedded Systems, Numerical Methods, Mathematical Methods of Physics, Theoretical Mechanics, Electrodynamics, Thermodynamics and Statistical Mechanics, Quantum Mechanics, Acoustics, Ultrasonics, Noise and Vibration Control.