

# Mingyuan Zhou

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The University of Texas at Austin  
IROM Department, McCombs School of Business  
2110 Speedway Stop B6500  
Austin, TX 78712  
Email: [mingyuan.zhou@mcombs.utexas.edu](mailto:mingyuan.zhou@mcombs.utexas.edu)  
Phone: +1-512-232-6763  
Fax: +1-512-471-0587  
Homepage: <http://mingyuanzhou.github.io>

## Education

- **Duke University**, Durham, NC, May 2013  
Ph.D. in Electrical and Computer Engineering
- **Chinese Academy of Sciences**, Beijing, China, June 2008  
M.Sc. in Signal and Information Processing
- **Nanjing University**, Nanjing, China, June 2005  
B.Sc. in Acoustics, Department of Electronic Science and Engineering

## Employment

Assistant Professor of Statistics  
Department of Information, Risk, and Operations Management, McCombs School of Business  
The University of Texas at Austin  
July 2013 –

## Working Papers

1. **Mingyuan Zhou**, Oscar-Hernan Madrid-Padilla, and James G. Scott, “Priors for Random Count Matrices Derived from a Family of Negative Binomial Processes,” arXiv:1404.3331v2, 2014
2. **Mingyuan Zhou**, “Generalized Negative Binomial Processes and the Representation of Cluster Structures,” arxiv:1310.1800, Oct. 2013.

## Refereed Journal Publications

3. Gungor Polatkan, **Mingyuan Zhou**, Lawrence Carin, David Blei, and Ingrid Daubechies, “A Bayesian nonparametric approach to image super-resolution,” to appear in IEEE Trans. Pattern Analysis and Machine Intelligence, 2014.
4. **Mingyuan Zhou** and Lawrence Carin, “Negative Binomial Process Count and Mixture Modeling,” to appear in IEEE Trans. Pattern Analysis and Machine Intelligence, 2014.
5. D. Carlson, J. Vogelstein, Q. Wu, W. Lian, **M. Zhou**, C. R. Stoetznner, D. Kipke, D. Weber, D. Dunson and L. Carin, “Sorting Electrophysiological Data via Dictionary Learning & Mixture Modeling,” to appear in IEEE Trans. Biomedical Engineering, 2013.
6. Zhengming Xing, **Mingyuan Zhou**, Alexey Castrodad, Guillermo Sapiro, and Lawrence Carin, “Dictionary Learning for Noisy and Incomplete Hyperspectral Images,” *SIAM Journal on Imaging Sciences*, Vol.5, pp. 33-56, Jan. 2012.
7. **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,” *IEEE Trans. Image Processing*, Vol. 21, pp. 130-144, Jan. 2012.

8. Chengshi Zheng, **Mingyuan Zhou**, and Xiaodong Li, “On the relationship of non-parametric methods for coherence function estimation,” *Signal Processing*, vol. 88, pp. 2863-2867, Nov. 2008.
9. **Mingyuan Zhou**, Jialu Chen, and Xiaodong Li, “A time/frequency-domain unified delayless partitioned block frequency-domain adaptive filter,” *IEEE Signal Processing Letters*, vol. 14, pp. 976-979, Dec. 2007.
10. **Mingyuan Zhou** and Xiaojun Qiu, “An error path delay compensated delayless subband adaptive filter architecture,” *Signal Processing*, vol. 87, pp. 2640-2648, Nov. 2007.

#### Peer-Reviewed Conference Publications

11. **Mingyuan Zhou**, “Beta-Negative Binomial Process and Exchangeable Random Partitions for Mixed-Membership Modeling,” *Neural Information Processing Systems (NIPS 2014)*, Montreal, CA, Dec. 2014. (Acceptance Rate: **25%**)
12. **Mingyuan Zhou** and Lawrence Carin, “Augment-and-Conquer Negative Binomial Processes,” *Neural Information Processing Systems (NIPS 2012)*, Lake Tahoe, NV, Dec. 2012. (Acceptance Rate: **4.9%**, Poster Spotlight Oral Presentation)
13. **Mingyuan Zhou**, Lingbo Li, David Dunson, and Lawrence Carin, “Lognormal and Gamma Mixed Negative Binomial Regression,” *International Conference on Machine Learning (ICML 2012)*, Edinburgh, Scotland, June 2012. (Acceptance Rate: **27%**, Full Presentation)
14. **Mingyuan Zhou**, Lauren Hannah, David Dunson, and Lawrence Carin, “Beta-Negative Binomial Process and Poisson Factor Analysis,” *International Conference on Artificial Intelligence and Statistics (AISTATS 2012)*, La Palma, Canary Islands, Spain, Apr. 2012. (Acceptance Rate: **33%**)
15. Xu Chen, **Mingyuan Zhou** and Lawrence Carin, “The Contextual Focused Topic Model,” *ACM SIGKDD Conf. Knowledge Discovery and Data Mining (KDD 2012)*, Beijing, China, Aug. 2012. (Acceptance Rate: **18%**, Full Paper, Research Track)
16. Lingbo Li, Xianxing Zhang, **Mingyuan Zhou**, and Lawrence Carin, “Nested Dictionary Learning for Hierarchical Organization of Imagery and Text,” *Conference on Uncertainty in Artificial Intelligence (UAI 2012)*, Catalina Island, CA, Aug. 2012. (Acceptance Rate: **31%**)
17. Lingbo Li, **Mingyuan Zhou**, Guillermo Sapiro, and Lawrence Carin, “On the Integration of Topic Modeling and Dictionary Learning,” *International Conference on Machine Learning (ICML 2011)*, Bellevue, WA, June 2011. (Acceptance Rate: **26%**)
18. **Mingyuan Zhou**, Hongxia Yang, Guillermo Sapiro, David Dunson, and Lawrence Carin, “Dependent Hierarchical Beta Process for Image Interpolation and Denoising,” *International Conference on Artificial Intelligence and Statistics (AISTATS 2011)*, *JMLR W&CP*, vol. 15, Ft. Lauderdale, FL, Apr. 2011. (Acceptance Rate: **8.1%**, Oral Presentation)
19. **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)*, Vancouver, B.C., Canada, Dec. 2009. (Acceptance Rate: **2.0%**, Oral Presentation)

#### Other Refereed Publications

20. Lingbo Li, Jorge Silva, **Mingyuan Zhou**, and Lawrence Carin, “Online Bayesian Dictionary Learning for Large Datasets,” *International Conference on Acoustics, Speech and Signal Processing (ICASSP2012)*, Kyoto, Japan, Mar. 2012.
21. **Mingyuan Zhou**, Hongxia Yang, Guillermo Sapiro, David Dunson, and Lawrence Carin, “Landmark-Dependent Hierarchical Beta Process for Robust Sparse Factor Analysis,” *ICML2011 Structured Sparsity Workshop*, Bellevue, WA, June 2011.

22. **Mingyuan Zhou**, Hongxia Yang, Guillermo Sapiro, David Dunson, and Lawrence Carin, “Covariate-Dependent Dictionary Learning and Sparse Coding,” *International Conference on Acoustics, Speech and Signal Processing (ICASSP2011)*, Prague, Czech Republic, May 2011 [Invited paper and oral presentation].
23. Lingbo Li, **Mingyuan Zhou**, Eric Wang, and Lawrence Carin, “Joint Dictionary Learning and Topic Modeling for Image Clustering,” in *Proc. International Conference on Acoustics, Speech and Signal Processing (ICASSP2011)*, Prague, Czech Republic, May 2011.
24. **Mingyuan Zhou**, Chunping Wang, Minhua Chen, John Paisley, David Dunson, and Lawrence Carin, “Nonparametric Bayesian Matrix Completion,” in *Proc. IEEE Sensor Array and Multichannel Signal Processing Workshop (SAM2010)*, Israel, Oct. 2010.
25. 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 (ICIP2010)*, Hong Kong, Sept. 2010.
26. **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 (CAMSAP2009)*, Aruba, Dec. 2009.
27. **Mingyuan 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.
28. Chengshi Zheng, **Mingyuan 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.
29. **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.
30. **Mingyuan Zhou** and Xiaodong Li, “Acoustic echo suppression for Bluetooth earphone (in Chinese),” Technical Report, 2007.
31. **Mingyuan 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.
32. **Mingyuan Zhou** and Xiaodong Li, “*A Priori* SNR estimation based on the density distribution of *A Posteriori* SNR (in Chinese),” in *Proc. 2006 National Conference on Acoustics*, Xiamen, China, Oct. 2006.
33. **Mingyuan 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. (**Best Paper Award**)

## Professional Activities

### Reviewer/Program Committee Member:

- AISTATS 2015, 2014
- NIPS 2014, 2013, 2012
- ICML 2014, 2013, 2012
- Journal of Machine Learning Research
- IEEE Transactions on Pattern Analysis and Machine Intelligence
- IEEE Transactions on Image Processing
- SIAM Journal on Imaging Sciences
- IEEE Transactions on Knowledge and Data Engineering

- IEEE Transactions on Circuits and Systems for Video Technology
- IEEE Geoscience and Remote Sensing Letters
- IEEE Signal Processing Letters
- Journal of Visual Communication and Image Representation

#### **Invited/Contributed Talks:**

- “Count-Mixture Modeling and Exchangeable Random Partitions,” Random Structures Seminar, Department of Mathematics, The University of Texas at Austin, Nov. 2013.
- “Nonparametric Bayesian count and mixture modeling,” McCombs School of Business and Division of Statistics & Scientific Computation, The University of Texas at Austin, Jan. 2013.
- “Nonparametric Bayesian dictionary learning and count & mixture modeling,” IBM T. J. Watson Research Center, Yorktown Heights, NY, Dec. 2012.
- “Augment-and-conquer negative binomial processes,” NIPS 2012, Lake Tahoe, NV, Dec. 2012.
- “Nonparametric Bayesian count and mixture modeling,” University of Southern California, hosted by Prof. Fei Sha, Los Angeles, CA, Oct. 2012.
- “Nonparametric Bayesian latent variable models,” MERL - Mitsubishi Electric Research Laboratories, hosted by Dr. Dehong Liu, Cambridge, MA, July 2012.
- “Lognormal and gamma mixed negative binomial regression,” ICML 2012, Edinburgh, Scotland, June 2012.
- “Efficient Bayesian inference for the negative binomial distribution,” Duke ECE Graduate Research Workshop, Jan. 2012.
- “On the integration of topic modeling and dictionary learning,” 8th Workshop on Bayesian Nonparametrics, June 2011, Veracruz, Mexico.
- “Covariate-dependent dictionary learning and sparse coding,” ICASSP 2011, Prague, Czech Republic, May 2011.
- “Dependent hierarchical beta process for image interpolation and denoising,” SampTA 2011, Singapore, May 2011.
- “Non-parametric Bayesian dictionary learning with landmark-dependent hierarchical beta Process,” The Learning Workshop, Ft. Lauderdale, FL, Apr. 2011.
- “Dependent hierarchical beta process for image interpolation and denoising,” AISTATS 2011, Ft. Lauderdale, FL, Apr. 2011.
- “Bayesian dictionary learning,” Duke DISP Computational Imaging Seminar Series, Mar. 2011
- “Non-parametric Bayesian dictionary learning for sparse image representations,” NIPS 2009, Dec. 2009, Vancouver, B.C., Canada.
- “Non-parametric Bayesian dictionary learning for sparse image representation and user rating matrix completion,” University of California, Los Angeles, hosted by Prof. Stanley Osher, Los Angeles, CA, Nov. 2009.

#### **Work Experience:**

- 2010, summer Intern at IBM T. J. Watson Research Center, Hawthorne, New York, working with Doctors Lexing Xie, Gang Hua and Apostol (Paul) Natsev.