

# Mingyuan Zhou

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## 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  
Department of Statistics and Data Sciences  
The University of Texas at Austin  
July 2013 – Present

## Working Papers

1. **Mingyuan Zhou** and Stephen G. Walker, “Sample size dependent species models,” arXiv:1410.3155, 2014.

## Refereed Journal and Conference Publications

2. **Mingyuan Zhou**, Oscar Hernan Madrid Padilla, and James G. Scott, “Priors for random count matrices derived from a family of negative binomial processes,” *to appear in Journal of the American Statistical Association (Theory and Methods)*, 2015.
3. Ayan Acharya, Dean Teffer, **Mingyuan Zhou**, and Joydeep Ghosh, “Gamma process Poisson factorization for joint modeling of network and documents,” *European Conference on Machine Learning (ECML 2015)*, Porto, Portugal, Sept. 2015.
4. **Mingyuan Zhou**, “Nonparametric Bayesian matrix factorization for assortative networks,” *European Signal Processing Conference (EUSIPCO)*, Sept. 2015. (Invited special session paper)
5. **Mingyuan Zhou**, “Infinite edge partition models for overlapping community detection and link prediction,” *Journal of Machine Learning Research W&CP, AISTATS*, vol. 38, May. 2015. (Acceptance Rate: **27%**)
6. Ayan Acharya, Joydeep Ghosh, and **Mingyuan Zhou**, “Nonparametric Bayesian factor analysis for dynamic count matrices,” *Journal of Machine Learning Research W&CP, AISTATS*, vol. 38, May. 2015. (Acceptance Rate: **27%**)

7. Gungor Polatkan, **Mingyuan Zhou**, Lawrence Carin, David Blei, and Ingrid Daubechies, "A Bayesian nonparametric approach to image super-resolution," *IEEE Trans. Pattern Analysis and Machine Intelligence*, vol. 37, pp. 346-358, Feb. 2015.
8. **Mingyuan Zhou** and Lawrence Carin, "Negative binomial process count and mixture modeling," *IEEE Trans. Pattern Analysis and Machine Intelligence*, vol. 37, pp. 307-320, Feb. 2015.
9. **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%**)
10. D. Carlson, J. Vogelstein, Q. Wu, W. Lian, **M. Zhou**, C. R. Stoeztner, D. Kipke, D. Weber, D. Dunson and L. Carin, "Sorting electrophysiological data via dictionary learning & mixture modeling," *IEEE Trans. Biomedical Engineering*, vol. 61, pp. 41-54, Jan. 2014.
11. **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)
12. **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)
13. **Mingyuan Zhou**, Lauren Hannah, David Dunson, and Lawrence Carin, "Beta-negative binomial process and Poisson factor analysis," *Journal of Machine Learning Research W&CP, AISTATS*, vol. 22, pp. 1462-1471, Apr. 2012 (Acceptance Rate: **33%**)
14. 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.
15. **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.
16. 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)
17. 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%**)
18. 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%**)
19. **Mingyuan Zhou**, Hongxia Yang, Guillermo Sapiro, David Dunson, and Lawrence Carin, "Dependent hierarchical beta process for image interpolation and denoising," *Journal of Machine Learning Research W&CP, AISTATS*, vol. 15, pp. 883-891, Apr. 2011. (Acceptance Rate: **8.1%**, Oral Presentation)
20. **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)
21. 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.
22. **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.

23. **Mingyuan Zhou** and Xiaojun Qiu, “An error path delay compensated delayless subband adaptive filter architecture,” *Signal Processing*, vol. 87, pp. 2640-2648, Nov. 2007.

#### Other Refereed Publications

24. 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.
25. **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.
26. **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].
27. 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.
28. **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.
29. 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.
30. **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.
31. **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.
32. 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.
33. **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.
34. **Mingyuan Zhou** and Xiaodong Li, “Acoustic echo suppression for Bluetooth earphone (in Chinese),” Technical Report, 2007.
35. **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.
36. **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.
37. **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:

- NIPS 2015, 2014, 2013, 2012
- IJCAI 2015 (Machine Learning Track)
- ICML 2015, 2014, 2013, 2012
- AISTATS 2015, 2014
- Journal of Machine Learning Research
- IEEE Transactions on Pattern Analysis and Machine Intelligence
- IEEE Transactions on Signal Processing
- IEEE Transactions on Image Processing
- Bayesian Analysis
- Journal of Selected Topics in Signal 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:

- “Infinite vocabulary naive Bayes classifiers,” invited talk in Asilomar Conference on Signals, Systems, and Computers, Pacific Grove, CA, Nov. 2015.
- “Nonparametric Bayesian matrix factorization for assortative networks,” invited talk in European Signal Processing Conference, Nice, France, Sept. 2015.
- “Priors for random count matrices with random or fixed row sums,” invited talk in 10th Conference on Bayesian Nonparametrics, Raleigh, NC, June 2015.
- “Priors for random count matrices derived from a family of negative binomial processes,” invited talk in Conference of Texas Statisticians (COTS), Austin, TX, Apr. 2015.
- “Parametric Bayesian models,” Machine Learning Summer School, Austin, TX, Jan. 2015.
- “Priors for random count matrices derived from a family of negative binomial processes,” invited talk in ERCIM, Pisa, Italy, Dec. 2014.
- “Count-mixture modeling and exchangeable random partitions,” Random Structures Seminar, Department of Mathematics, The University of Texas at Austin, Nov. 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.