Lo-Bin Chang   The Ohio State University

CONTACT INFORMATION

Department of Statistics
The Ohio State University
Columbus, OH

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RESEARCH INTERESTS

Computer Vision, Pattern Recognition, Machine Learning, Mathematical and Statistical Finance, Biomedical Science

EDUCATION

Brown University, *Division of Applied Mathematics*, Providence, RI

Ph.D., Applied Mathematics, Conferred in May 2010
Thesis: Conditional modeling and conditional inference
Thesis Supervisor: Prof. Stuart Geman

WORK EXPERIENCE

Department of Statistics, The Ohio State University, Columbus, USA
Assistant Professor   **Aug 2015 to current**

Department of Applied Mathematics and Statistics, Johns Hopkins University, Baltimore, MD, USA
Visiting Assistant Professor   **Sep 2013 to July 2015**

Department of Applied Mathematics, National Chiao Tung University, Hsinchu, Taiwan
Assistant Professor   **Aug 2011 to Aug 2014**

Division of Applied Mathematics, Brown University, Providence, RI, USA
Postdoctoral Researcher   **June 2010 to July 2011**
- Postdoc Supervisor: Prof. Stuart Geman

TEACHING EXPERIENCE

Department of Statistics, The Ohio State University, Columbus, Ohio, USA (August 2015 to current)

- Introduction to Mathematical Statistics (II), 2020 Spring

- Advanced Computational Statistics & Theory of the Linear Model, 2019 Autumn

- Introduction to Mathematical Statistics (II), 2019 Spring

- Advanced Computational Statistics, 2018 Autumn

- Introduction to Mathematical Statistics (II), 2018 Spring

- Advanced Computational Statistics & Introduction to Statistical Inference for Data Analytics, 2017 Autumn

- Introduction to Mathematical Statistics (II), 2017 Spring

- Advanced Computational Statistics, 2016 Autumn

- Introduction to Mathematical Statistics (II), 2016 Spring

- Advanced Computational Statistics, 2015 Autumn

Department of Applied Mathematics and Statistics, Johns Hopkins University, Baltimore, MD, USA (Jan 2014 to May 2015)

- Graphical Models, 2015 Spring

- Machine Learning and Statistical Analysis in Finance, 2014 Autumn

- Modern Applications of Probability and Statistics, 2014 Spring

Department of Applied Mathematics, National Chiao Tung University, Hsinchu, Taiwan (Sep 2011 to May 2013)

- Information Theory, 2013 Spring

- Probability Theory, 2013 Spring

- Computational Probability and Statistics, 2012 Autumn

- Applied Probability and Statistics, 2012 Spring

- Calculus (II), 2012 Spring

- Calculus (I), 2012 Autumn

PUBLICATIONS **Xiaoyu Cai, Lo-Bin Chang, Chi Song**, *Powerful Association Tests to Detect Disease-Related DNA Methylation Regions* (2020) -Submitted.

Xiaohan Fu, Lo-Bin Chang, Dongbin Xiu, *Learning Reduced Systems via Deep Neural Networks with Memory* (2020) Journal of Machine Learning for Modeling and Computing. -Accepted

Shuyi Wang, Zixu Zhou, Lo-Bin Chang, Dongbin Xiu, *Construction of a Universal Discontinuity Detector Using Convolution Neural Networks* (2020) -Submitted.

Xiaoyu Cai, Lo-Bin Chang, Jordan Potter, Chi Song, *Association Analysis of Common and Rare Single Nucleotide Variants Using Adaptive Fisher Methods to Detect Dense and Sparse Signals* (2020), BMC Med Genomics **13**, 46.

Lo-Bin Chang, *Partial Order Relations for Classification Comparisons*, Canadian Journal of Statistics (2020), 48, 152-166.

Lu-Jing Huang, Yin-Ting Liao, Lo-Bin Chang, Chii-Ruey Hwang, *The Smallest Eigenvalues of Random Kernel Matrices: Asymptotic Results on the Min Kernel*, Statistics and Probability Letters (2019), Statistic and Probability Letters, Vol. 148, 23-29.

Lo-Bin Chang, Eran Borenstein, Wei Zhang, Stuart Geman, *Maximum Likelihood Features for Generative Image Models*, Annals of Applied Statistics (2017), Vol. 11, 1275-1308.

Bo Liu, Lo-Bin Chang, Hélyette Geman, *Intraday Pairs Trading Strategies on High Frequency Data: The Case of Oil Companies*, Quantitative Finance (2017), Vol. 17, 87-100.

Lo-Bin Chang, Donald Geman, *Tracking Cross-Validated Estimates of Prediction Error as studies Accumulate*, the Journal of the American Statistical Association (2015), Vol. 115, 1239–1247.

Lo-Bin Chang, Stuart Geman, Fushing Hsieh, Chii-Ruey Hwang, *Invariance in the Recurrence of Large Returns and the Validation of Models of Price Dynamics*, Physical Review E (2013), Vol. 88, Issue 2, 022116

Lo-Bin Chang, Stuart Geman, *Empirical Scaling Laws and the Aggregation of Non-stationary Data*, Physica A (2013), Vol. 392, Issue 20, 5046-5052.

Lo-Bin Chang, Zhidong Bai, Su-Yun Huang, Chii-Ruey Hwang, *Asymptotic Error Bounds for Kernel-based Nyström Low-Rank Approximation Matrices*, Journal of Multivariate Analysis (2013), Vol. 120, 102-119.

Lo-Bin Chang, Alok Goswami, Fushing Hsieh, Chii-Ruey Hwang, *An Invariance for the Large-sample Empirical Distribution of Waiting Time between Successive Extremes*, Bulletin of the Institute of Mathematics Academia Sinica (2013) Vol. 8, No. 1, 31-48

Lo-Bin Chang, Ya Jin, Wei Zhang, Eran Borenstein, Stuart Geman, *Context, Computation, and Optimal ROC Performance in Hierarchical Models* International Journal of Computer Vision (2011), Vol. 93, No. 2, 117-140.

Lo-Bin Chang, *Conditional Modeling and Conditional Inference*, Ph.D. Dissertation (2010).

Lo-Bin Chang, Kenneth Palmer, *Smooth convergence in the binomial model*, Finance and Stochastics (2007), Vol. 11, No. 1, pp.911-105.

Option Hedging and Parameter Estimation for Pricing Models.
June 25, 2019, The 3rd International Conference on Econometrics and Statistics, Taichung, Taiwan

Quantification of Reproducibility: Leave-Study-Out Estimation.
July 31, 2018, , Joint Statistical Meetings, Vancouver, Canada

Maximum Likelihood Features for Generative Image Models
August 2, 2017, Joint Statistical Meetings, Baltimore, Maryland

Conditional Modeling on Mean-reverting Processes for Intraday Pairs Trading
June 24, 2017, The 26th South Taiwan Statistics Conference & Chinese Institute of Probability and Statistics Annual Meeting, New Taipei City, Taiwan

Measures of Reproducibility: Estimation via Cross-study Validation
May 24, 2017, The 40th Annual Midwest Biopharmaceutical Statistics Workshop, Muncie, Indiana

Large Deviation Theory with Connections to Statistical Physics and Information theory
July 4, 2016, Institute of Mathematics, Academia Sinica, Taipei, Taiwan

A Cross-Validation Study for Reproducibility
June 27, 2016, Institute of Statistical Science, Academia Sinica, Taipei, Taiwan

A Mathematical Study on Reproducibility
June 8, 2016, Department of Applied Mathematics, National Chiao Tung University, Hsinchu, Taiwan

Tracking Cross-Validated Estimates of Prediction Error as Studies Accumulate
December 2, 2015, Mathematical Biosciences Institute, The Ohio State University, Columbus, OH

Cross-Study Validation versus Randomized Cross-Validation as Data Accumulate
November 5, 2014, Division of Applied Mathematics, Brown University, Providence, RI

Generative Models for Image Analysis
October 23, 2014, Department of Applied Mathematics and Statistics Johns Hopkins University, Baltimore, MD

Formulation and Computation of a Composition Machine
March 14, 2013, Workshop on Stochastic Processes and Applications
National Tsing Hua University, Hsinchu, Taiwan

Generative Models for Image Analysis and Computations
January 6, 2013, Third Conference of Tsignhua Sanya International Mathematics Forum
Howard Johnson Resort Sanya Bay, Sanya, Hainan, China

Asymptotic Error Bounds for Kernel-based Nyström Low-Rank Approximation Matrices
December 9, 2012, Taiwan Mathematics Annual Meeting
National Chiao Tung University, Hsinchu, Taiwan

The Invariance of Waiting Times between Large Returns with a discussion on Empirical Scaling Laws
March 9, 2012, Workshop on Stochastic Processes and Applications
National Tsing Hua University, Hsinchu, Taiwan

Generative Models for Image Analysis: Data Likelihood versus Feature Likelihood
Dec 16, 2011, 7th conference of the Asian Regional Section of IASC
Academia Sinica, Taipei, Taiwan

Orchestrating Computation in Hierarchical Models
Nov 13, 2011, Taiwan-Japan Joint Workshop on Numerical Analysis and Scientific Computation
Department of Mathematics, National Taiwan University, Taipei, Taiwan

Ph.D. Dissertation Defense: Conditional Modeling and Conditional Inference
May 3, 2010, Division of Applied Mathematics, Brown University, Providence, RI

Generative Models for Image Analysis
Nov 11, 2009, Division of Applied Mathematics, Brown University, Providence RI