

# Chun-Liang Li

李俊良

<http://www.cs.cmu.edu/~chunli>

GHC 8013, 5000 Forbes Ave, Pittsburgh, PA 15213, United States

chunli@cs.cmu.edu

## Education

**Carnegie Mellon University**, Pittsburgh, PA, USA

**Ph.D. in Machine Learning (School of Computer Science)**

*August 2014-August 2019*

Thesis: “Learning Transformation via Implicit Generative Models”

Advisor: Prof. Jeff Schneider and Prof. Barnabás Póczos

**National Taiwan University**, Taipei, Taiwan

**M.S. in Computer Science & Information Engineering**

*June 2013*

*Ranked 1st out of 136*

**B.S. in Computer Science & Information Engineering**

*June 2012*

*Ranked 2nd out of 105*

## Research Interests

I am currently interested in **deep generative models**. I design theoretically guaranteed generative algorithms for different types of data, including text, images, point clouds and meshes, and different applications. The applications I studied not only include computer vision and natural language, but also science and art.

I have also worked on various topics, including neural network compression, adversarial attack, time series anomaly detection, large-scale kernel methods, Bayesian optimization, streaming PCA, multi-label learning and recommendation systems.

## Selected Awards and Honors

**IBM Ph.D. Fellowship**

*2018*

**IJCAI Distinguished Student Paper Final List**

*2017*

– 3 out of 2,540 submissions

## Working Experience

**Research Internship**, Facebook Reality Lab, USA

*May 2018-Feb 2019*

– Mentor: Dr. Tomas Simon, Dr. Jason Saragih and Dr. Yaser Sheikh

– Topic: Learning to register and generate meshes with differentiable renderers

**Research Internship**, IBM T.J.Watson Research Center, USA

*May 2017-August 2017*

– Mentor: Dr. Yu Cheng and Dr. Youssef Mroueh

– Topic: Sobolev GAN

## Pre-Print (\* denotes equal contribution)

- [29] **Chun-Liang Li**, Tomas Simon, Jason Saragih, Barnabás Póczos, Yaser Sheikh, “Self-supervised Fitting of Articulated Meshes to Point Clouds”, *under submission*.
- [28] **Chun-Liang Li\***, Manzil Zaheer\*, Yang Zhang, Barnabás Póczos and Ruslan Salakhutdinov “Point Cloud GAN”, *under submission*.
- [27] Haoran You, Yu Cheng, **Chun-Liang Li**, Tianheng Cheng, and Pan Zhou, “Bayesian CycleGAN via Marginalizing Latent Sampling”, *under submission*.
- [26] Hong-You Chen, Ian Yen, **Chun-Liang Li**, Jiachao Liu, Barnabás Póczos, Jean Oh and Pradeep Ravikumar, “Lightweight Segmentation via Task-specific Model Pruning”, *under submission*.

## Conference Publications

- [25] **Chun-Liang Li**, Wei-Chen Chang, Youssef Mroueh, Yiming Yang and Barnabás Póczos, “Implicit Kernel Learning”, to appear in *Proceedings of the International Conference on Artificial Intelligence and Statistics (AISTATS)*, 2019.
- [24] Wei-Chen Chang, **Chun-Liang Li**, Yiming Yang and Barnabás Póczos, “Kernel Change-point Detection with Auxiliary Deep Generative Models”, to appear in *Proceedings of the International Conference on Learning Representations (ICLR)*, 2019.
- [23] Hsueh-Ti Liu, Michael Tao, **Chun-Liang Li**, Derek Nowrouzezahrai and Alec Jacobson, “Beyond Pixel Norm-Balls: Parametric Adversaries using an Analytically Differentiable Renderer”, to appear in *Proceedings of the International Conference on Learning Representations (ICLR)*, 2019.
- [22] Shashank Singh, Ananya Uppal, Boyue Li, **Chun-Liang Li**, Manzil Zaheer, and Barnabás Póczos, “Non-parametric Density Estimation under Adversarial Losses”, in *Neural Information Processing Systems (NIPS)*, 2018.
- [21] **Chun-Liang Li\***, Yusha Liu\* and Barnabás Póczos, “Classifier Two-Sample Test for Video Anomaly Detections”, in *Proceedings of the British Machine Vision Conference (BMVC)*, 2018.
- [20] Youssef Mroueh, **Chun-Liang Li\***, Anant Raj\*, Tom Sercu\* and Yu Cheng “Sobolev GAN”, in *Proceedings of the International Conference on Learning Representations (ICLR)*, 2018.
- [19] **Chun-Liang Li\***, Wei-Chen Chang\*, Yu Cheng, Yiming Yang and Barnabás Póczos, “MMD GAN: Towards Deeper Understanding of Moment Matching Network”, in *Neural Information Processing Systems (NIPS)*, 2017.
- [18] J. H. Rick Chang, **Chun-Liang Li**, Barnabás Póczos, B. V. K. Vijaya Kumar and Aswin C. Sankaranarayanan, “One Network to Solve Them All —Solving Linear Inverse Problems using Deep Projection Models”, in *Proceedings of the International Conference on Computer Vision (ICCV)*, 2017. **(Oral Presentation, acceptance rate 45/2143 submissions)**
- [17] Wei-Chen Chang, **Chun-Liang Li**, Yiming Yang and Barnabás Póczos, “Data-driven Random Fourier Feature using Stein Effect”, to appear in *International Joint Conference on Artificial Intelligence (IJCAI)*, 2017. **(Distinguished Student Paper Final List, acceptance rate 3/2540 submissions)**
- [16] Po-Wei Wang, **Chun-Liang Li** and J. Zico Kolter, “Polynomial optimization methods for matrix factorization”, in *Proceedings of the AAAI Conference on Artificial Intelligence (AAAI)*, 2017.
- [15] **Chun-Liang Li** and Barnabás Póczos, “Utilize Old Coordinates: Faster Doubly Stochastic Gradients for Kernel Methods”, in *Proceedings of the Uncertainty in Artificial Intelligence (UAI)*, 2016.
- [14] **Chun-Liang Li**, Kirthevasan Kandasamy, Barnabás Póczos and Jeff Schneider, “High Dimensional Bayesian Optimization via Restricted Projection Pursuit Models”, in *Proceedings of the International Conference on Artificial Intelligence and Statistics (AISTATS)*, 2016.
- [13] **Chun-Liang Li**, Hsuan-Tien Lin and Chi-Jen Lu, “Rivalry of Two Families of Algorithms for Memory-Restricted Streaming PCA”, in *Proceedings of the International Conference on Artificial Intelligence and Statistics (AISTATS)*, 2016.
- [12] **Chun-Liang Li** and Hsuan-Tien Lin, “Condensed Filter Tree for Cost-Sensitive Multi-Label Classification”, in *Proceedings of the International Conference on Machine Learning (ICML)*, 2014.

- [11] Jyun-Yu Jiang, **Chun-Liang Li**, Chun-Pai Yang and Chung-Tsai Su. “POSTER: Scanning-free Personalized Malware Warning System by Learning Implicit Feedback from Detection Logs,” in *Proceedings of the ACM Conference on Computer and Communications Security (CCS)*, 2014.
- [10] **Chun-Liang Li**, Chun-Sung Ferng, and Hsuan-Tien Lin, “Active Learning with Hinted Support Vector Machine”, in *Proceedings of the Asian Conference on Machine Learning (ACML)*, 2012.

## Journal Publications

- [9] Francois Lanusse, Quanbin Ma, Nan Li, Thomas E. Collett, **Chun-Liang Li**, Siamak Ravanbakhsh, Rachel Mandelbaum and Barnabás Póczos, “CMU DeepLens: Deep Learning For Automatic Image-based Galaxy-Galaxy Strong Lens Finding”, in *Monthly Notices of the Royal Astronomical Society (MNRAS)*, 2018
- [8] **Chun-Liang Li**, Chun-Sung Ferng, and Hsuan-Tien Lin, “Active Learning with Hint Information,” in *Neural Computation*, 2015.
- [7] **C.-L. Li**, Y.-C. Su, T.-W. Lin, C.-H. Tsai, W.-C. Chang, K.-H. Huang, T.-M. Kuo, S.-W. Lin, Y.-S. Lin, Y.-C. Lu, C.-P. Yang, C.-X. Chang, W.-S. Chin, Y.-C. Juan, H.-Y. Tung, J.-P. Wang, C.-K. Wei, F. Wu, T.-C. Yin, T. Yu, Y. Zhuang, S.-D. Lin, H.-T. Lin and C.-J. Lin, “Combination of Feature Engineering and Ranking Models for Paper-Author Identification in KDD Cup 2013,” in *Journal of Machine Learning Research (JMLR)*, 2015.
- [6] W.-S. Chin, Y.-C. Juan, Y. Zhuang, F. Wu, H.-Y. Tung, T. Yu, J.-P. Wang, C.-X. Chang, C.-P. Yang, W.-C. Chang, K.-H. Huang, T.-M. Kuo, S.-W. Lin, Y.-S. Lin, Y.-C. Lu, Y.-C. Su, C.-K. Wei, T.-C. Yin, **C.-L. Li**, T.-W. Lin, C.-H. Tsai, S.-D. Lin, H.-T. Lin and C.-J. Lin, “Effective String Processing and Matching for Author Disambiguation,” in *Journal of Machine Learning Research (JMLR)*, 2014.

## Other Publications

- [5] **Chun-Liang Li**<sup>\*</sup>, Eunsu Kang<sup>\*</sup>, Songwei Ge<sup>\*</sup>, Lingyao Zhang, Austin Dill, Manzil Zaheer, and Barnabás Póczos, “Hallucinating Point Cloud into 3D Sculptural Object”, in *NIPS workshop on Machine Learning for Creativity and Design*, 2018.
- [4] **Chun-Liang Li**<sup>\*</sup>, Manzil Zaheer<sup>\*</sup>, Barnabás Póczos and Ruslan Salakhutdinov, “GAN Connoisseur: Can GANs Learn Simple 1D Parametric Distributions?”, in *NIPS workshop on Deep Learning: Bridging Theory and Practice*, 2017.
- [3] **Chun-Liang Li**, Siamak Ravanbakhsh and Barnabás Póczos, “Annealing Gaussian into ReLU: a New Sampling Strategy for ReLU RBM”, Technical Report, 2017.
- [2] P.-L. Chen, C.-T. Tsai, Y.-N. Chen, K.-C. Chou, **C.-L. Li**, C.-H. Tsai, K.-W. Wu, Y.-C. Chou, C.-Y. Li, W.-S. Lin, S.-H. Yu, R.-B. Chiu, C.-Y. Lin, C.-C. Wang, P.-W. Wang, W.-L. Su, C.-H. Wu, T.-T. Kuo, T. G. McKenzie, Y.-H. Chang, C.-S. Ferng, C.-M. Ni, H.-T. Lin, C.-J. Lin and S.-D. Lin, “A Linear Ensemble of Individual and Blended Models for Music Rating Prediction,” in *Proceedings of the KDD Cup 2011 Workshop (First Place in Track 1)*, 2012.
- [1] T. G. McKenzie, C.-S. Ferng, Y.-N. Chen, **C.-L. Li**, C.-H. Tsai, K.-W. Wu, Y.-H. Chang, C.-Y. Li, W.-S. Lin, S.-H. Yu, C.-Y. Lin, P.-W. Wang, C.-M. Ni, W.-L. Su, T.-T. Kuo, C.-T. Tsai, P.-L. Chen, R.-B. Chiu, K.-C. Chou, Y.-C. Chou, C.-C. Wang, C.-H. Wu, H.-T. Lin, C.-J. Lin and S.-D. Lin, “Novel Models and Ensemble Techniques to Discriminate Favorite Items from Unrated Ones for Personalized Music Recommendation,” in *Proceedings of the KDD Cup 2011 Workshop (First Place in Track 2)*, 2012.

## Teaching Experience

- Teaching Assistant**, Carnegie Mellon University *Fall 2016*
  - *Topics in Deep Learning* instructed by Prof. Ruslan Salakhutdinov
- Guest Lecturer**, National Taiwan University *Spring 2013*
  - *Application of Big Data System* instructed by Prof. Shih-Wei Liao
  - Topic: Dimension Reduction

- Teaching Assistant**, National Taiwan University *Fall 2011, Fall 2013*  
 – *Machine Learning* instructed by Prof. Hsuan-Tien Lin
- Teaching Assistant**, National Taiwan University *Spring 2013*  
 – *Data Mining and Machine Learning: Theory and Practice* instructed by Profs. Chih-Jen Lin, Hsuan-Tien Lin and Shou-De Lin
- Teaching Assistant**, National Taiwan University *Fall 2012, Spring 2013*  
 – *Network and System Administration Training* instructed by Prof. Hsin-Mu Tsai
- Teaching Assistant**, National Taiwan University *Spring 2012*  
 – *Data Structures and Algorithms* instructed by Prof. Hsuan-Tien Lin

## Professional Activities

### Paper Reviewer

- Journal: Data Mining and Knowledge Discovery, IEEE Transactions on Knowledge and Data Engineering, IEEE Transactions on Pattern Analysis and Machine Intelligence, Journal of Information Science and Engineering
- Conference: IJCAI 2015, ACML 2015, NIPS 2015, ACML 2016, NIPS 2016, ACML 2017, ICLR 2018, NIPS 2018, CVPR 2019, ICML 2019

## Other Awards and Honors

- First Places, Track 1 and Track 2 of KDD Cup 2013** *2013*  
 – Ranked 1 out of 553 teams
- First Places, Track 1 and Track 2 of KDD Cup 2011** *2011*  
 – Ranked 1 out of 2,389 teams
- First Place, International Strong Lens-Finding Challenge** *2017*
- Master Thesis Award, Taiwanese Association for Artificial Intelligence (TAAI)** *2013*
- First Place, Trend Micro Big Data Innovation Programming Contest, Taiwan** *2013*
- NTU Outstanding Student Scholarship, Taiwan** *2013*
- Garmin Scholarship, Taiwan** *2012*
- NTU Outstanding Student Scholarship, Taiwan** *2011*
- Cyberlink Elite Scholarship, Taiwan** *2010*