

Zhifeng Kong

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Education

University of California San Diego

Ph.D. student in Computer Science and Engineering, AI Group

Aug. 2018 - Current

Advisor: Kamalika Chaudhuri

Xi'an Jiaotong University

School of Mathematics and Statistics

Sep. 2014 - Jun. 2018

Bachelor of Science in Mathematics and Applied Mathematics (Honors Science Program)

The Honors Youth Program (2-year preparatory)

Sep. 2012 - Jun. 2014

Georgia Institute of Technology

School of Mathematics Visiting Honors Student Program

Jan. 2017 - May. 2017

University of Alberta

International Undergraduate Summer Enrichment Program in Mathematics

Jul. 2016

Current Research

I'm currently a second year PhD student working on machine learning theory with Prof. Kamalika Chaudhuri at UC San Diego. I'm especially interested in theoretical analysis of novel deep learning as well as statistical learning methods. During my PhD study, I've been focusing on deep generative models (GANs, normalizing flows, overfitting). I'm also interested in robustness of machine learning algorithms and density estimation problems.

Publications & Papers

- **Zhifeng Kong**, Kamalika Chaudhuri. *The Expressive Power of a Class of Normalizing Flow Models*. In AISTATS 2020. <https://arxiv.org/pdf/2006.00392.pdf>
- **Zhifeng Kong**, Kamalika Chaudhuri. *The Expressive Power of Planar Flows*. In The Workshop on Theory of Deep Learning: Where next?
Video: <https://video.ias.edu/theorydeeplearning/2019/1018-Variou2>
- Zhaoyang Lyu, Ching-Yun Ko, **Zhifeng Kong**, Ngai Wong, Dahua Lin, Luca Daniel. *Fastened CROWN: Tightened Neural Network Robustness Certificates*. In AAAI 2020.
<https://arxiv.org/pdf/1912.00574.pdf>
- **Zhifeng Kong**. *Convergence Analysis of Training Two-hidden-layer Partially Over-parameterized ReLU Networks vis Gradient Descent*. In ICNIP 2020.
<https://publications.waset.org/10011232/pdf>
- Xingyu Wan, Qing Zhao, Jinjun Wang, Shunming Deng, **Zhifeng Kong**. *Multi-Object Tracking Using Online Metric Learning with Long Short-Term Memory*. IEEE ICIP 2018, 788-792.
<https://ieeexplore.ieee.org/stamp/stamp.jsp?tp=&arnumber=8451174>
- **Zhifeng Kong**. *Convergence Analysis of the Dynamics of a Special Kind of Two-Layered Neural Networks with ℓ_1 and ℓ_2 Regularization*. <https://arxiv.org/pdf/1711.07005.pdf>.

- Qi Lyu, **Zhifeng Kong**, Chao Shen, Tianwei Yue. WristAuthen: *A Dynamic Time Wrapping Approach for User Authentication by Hand-Interaction through Wrist-Worn Devices*.
<https://arxiv.org/pdf/1710.07941.pdf>.
- **Zhifeng Kong**, Shuo Ding. *Generative Adversarial Networks with Inverse Transformation Unit*.
<https://arxiv.org/pdf/1709.09354.pdf>.
- Lu Pengfei, Fan Ya, Zhou Linhua, Qian Jun, Liu Linna, Zhao Siyan, **Zhifeng Kong**. *Study on Feature Extraction and Classification of Animal Blood Spectra Based on Support Vector Machine*. Accepted by Spectroscopy and Spectral Analysis.
<http://www.gpxygpfx.com/EN/Y2017/V37/I12/3828>

Competitions

Tianchi Big Data Competition held by Alibaba Cloud Mar. 2016 - Sep. 2016

1. *The Optimal Scheme of Logistics Distribution in the Last Kilometers under Punitive Conditions*.
 - Used the Tabu Search algorithm to look for optimal solutions.
 - Created 9 neighbor exploration methods and tested their contributions.
 - Optimized the program by classifying the distribution schemes and using fast judging functions to tackle the complicate neighborhood structure.
2. *The Prediction of the Users' Buying Behavior in a Day*.
 - Constructed and extracted 33 features to establish machine learning models.
 - Trained the model and obtained users' buying probabilities to predict their buying behavior.

Internship

Beijing Xiaomi Science and Technology Co. Ltd. Aug. 2016 - Sep. 2016
Intern in Xiaomi Cloud Service Platform

- Predicted the online Click-Through-Rate (CTR) based on Deep Neural Networks.

Baidu LLC. Jun. 2020 - Current
Intern in Baidu Research Institute, Baidu USA

Honor

- Departmental Fellowship at UCSD Sep. 2018
 - Student Representative at DeeCamp Aug. 2018
 - The First-Class Scholarship of the Mount Everest Plan Nov. 2015, 2016 and 2017
 - The First-Class Scholarship at Xi'an Jiaotong University Oct. 2015, 2016 and 2017
 - The Outstanding Student Winner at Xi'an Jiaotong University Oct. 2015, 2016 and 2017
 - The Meritorious Winner in the Interdisciplinary Contest in Modeling Feb. 2015
 - The First Prize in China Undergraduate Mathematical Contest in Modeling (Shaanxi Province) Sep. 2015
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