# Jian Li

Ph.D. student in Statistical Machine Learning

Institute of Information Engineering, CAS

Beijing, China

⊠ me@lijian.ac.cn

† lijian.ac.cn

¶ github.com/superlj666



## Education

Sep 2015 - **Ph.D. student**, *Institute of Information Engineering*, Chinese Academy of Sciences, Beijing.

Present Advisor: Prof. Weiping Wang and Associate Prof. Yong Liu. Large Scale Machine Learning.

Sep 2011 - Undergraduate, Software College, Northeastern University, Shenyang, China.

Jun 2015 A member of 2011 (English) International Class student (30/324). Software Engineering.

## Research Interests

My research interests mainly lie in **efficient large machine learning with theoretical guarantee**, but also kernel selection and graph-based semi-supervised learning. Indeed, my works focus on generalization analysis of those areas and building effective and scalable algorithmic tools for them, to channel theory and algorithms ino applications. Current works:

- Algorithm: Design efficient algorithms for semi-supervised settings, by making using of random projections, gradient methods and distributed learning.
- Theory: Statistical learning for large scale algorithms applying to semi-supervised settings by using popular measures, including the local Rademacher complexity and integral operator.

#### **Publications**

Multi-Class Learning using Unlabeled Samples: Theory and Algorithm. To appear.

Jian Li, Yong Liu, Rong Yin, Weiping Wang.

In Proceedings of the 28th International Joint Conference on Artificial Intelligence (IJCAI 2019).

Approximate Manifold Regularization: Scalable Algorithm and Generalization Analysis. To appear.
 Jian Li, Yong Liu, Rong Yin, Weiping Wang.

In Proceedings of the 28th International Joint Conference on Artificial Intelligence (IJCAI 2019).

o Multi-Class Learning: From Theory to Algorithm.

Jian Li, Yong Liu, Rong Yin, Hua Zhang, Lizhong Ding, Weiping Wang. Advances in Neural Information Processing Systems 31 (NeurPS 2018).

o Efficient kernel selection via spectral analysis.

**Jian Li**, Yong Liu, Hailun Lin, Yinliang Yue, Weiping Wang. In Proceedings of the 26th International Joint Conference on Artificial Intelligence (**IJCAI 2017**).

# Preprints

Distributed Learning with Random Features.

**Jian Li**, Yong Liu, Weiping Wang. arXiv preprint arXiv:1906.03155, 2019. (Submitted to NeurIPS 2019).

o Efficient Cross-Validation for Semi-Supervised Learning.

Yong Liu, **Jian Li**, Guangjun Wu, Lizhong Ding, Weiping Wang. arXiv preprint arXiv:1902.04768, 2019.

o Max-Diversity Distributed Learning: Theory and Algorithms.

Yong Liu, **Jian Li**, Weiping Wang. arXiv preprint arXiv:1812.07738, 2018.

# Expertise

- Machine Learning Theory
  - Statistical learning for kernel methods, including local Rademacher complexity and integral operator.
  - Statistical learning for approximate techniques for large scale machine learning.
  - Statistical learning for graph-based semi-supervised learning.
- Machine Learning Algorithm Computationally-efficient optimization algorithms for large scale learning
  - Distributed learning.
  - Random projections, including random features, Nyström methods and structured projections.
  - Gradient methods.
- **Programming Languages**: Python, Matlab, LATEX, C/C++, Java.
- Languages: English, Fluent. Chinese, Mother Tongue.

## Honors and Awards

- CAS Presidential Scholarship, Chinese Academy of Sciences (CAS), 2019.
- Merit Student, University of Chinese Academy of Sciences, 2019.
- National Scholarship for Doctoral students, Ministry of Education of P.R.China, 2018.
- IIE Presidential Scholarship, Institute of Information Engineering, CAS, 2018.
- Merit Student, University of Chinese Academy of Sciences, 2018.
- Laboratory Excellent Student Scholarship, Institute of Information Engineering, CAS, 2018.
- Laboratory Excellent Student Scholarship, Institute of Information Engineering, CAS, 2017.