Xiaoyi MAI

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Experiences

- Postdoctoral Researcher, CRIStAL, CNRS, France.   2021-now
    - *Project:* Determinantal point processes for statistical learning.
    - *Host:* R. Bardenet.
- Postdoctoral Researcher, University of Southern California, USA.   2020-2021
    - *Project:* Learning with less labels.
    - *Hosts:* S. Avestimehr, A. Ortega and M. Soltanolkotabi.

Education

- Ph.D. in Mathematics and Computer Science, CentraleSupélec, University of Paris-Saclay, France.   2016-2019
    - *Thesis:* Methods of random matrices for large dimensional statistical learning.
    - *Supervisor:* R. Couillet.
    - *Award:* the 2020 GRETSI/GdR ISIS/EEA best thesis award.
- M.Sc. (double degrees) in Applied Mathematics and Information Processing, CentraleSupélec, France.   2014-2016
- M.Sc. (double degrees) in Electronic and Information Engineering, Beihang University, China.   2014-2016
- B.Sc. in Applied Physics, Beihang University, China.   2010-2014

Articles

Journals

- **X. Mai**, R. Couillet, "Consistent semi-supervised graph regularization for high dimensional data", (to appear) Journal of Machine Learning Research, 2021.
- **X. Mai**, R. Couillet, "A random matrix analysis and improvement of semi-supervised learning for large dimensional data", Journal of Machine Learning Research, vol. 19, no. 79, pp. 1-27, 2018.

Conferences

- **X. Mai**, R. Couillet, "Revisiting and improving semi-supervised learning: a large dimensional approach", IEEE International Conference on Acoustics, Speech and Signal Processing (ICASSP'19), Brighton, UK, 2019.
- **X. Mai**, Z.Liao, R. Couillet, "A large n,p analysis of logistic regression: asymptotic performance and new insights", IEEE International Conference on Acoustics, Speech and Signal Processing (ICASSP'19), Brighton, UK, 2019.
- **X. Mai**, R. Couillet, "Semi-supervised spectral clustering", Asilomar Conference on Signals, Systems, and Computers, Pacific Grove, CA, USA, 2018.
- R. Couillet, Z. Liao, **X. Mai**, "Classification asymptotics in the random matrix regime", European Signal Processing Conference (EUSIPCO'18), Rome, Italy, 2018.
- **X. Mai**, R. Couillet, "The counterintuitive mechanism of graph-based semi-supervised learning in the big data regime", IEEE International Conference on Acoustics, Speech and Signal Processing (ICASSP'17), New Orleans, USA, 2017.

Activities

- Tutorial speaker (with R. Couillet & Z. Liao), The 26th European Signal Processing Conference (EUSIPCO'18), Italy. 2018
  - Topic: Random Matrix Advances in Machine Learning and Neural Nets.
- Teaching assistant, CentraleSupélec, France. 2016-2018
  - Research projects of machine learning to 1st & 2nd year graduate students (64h).
  - Lab sessions of statistical signal analysis to 2nd year graduate students (64h).

Research Interests

- Random matrix theory, high-dimensional statistics.
- Machine learning, methods for learning with less labels, neural networks, randomized feature selection.