

# CURRICULUM VITAE

## Zhenyu LIAO

### Present Address

CentraleSupélec, L2S  
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### Personal information

Date of Birth: 28/08/1992  
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### Education

- **Ph.D.** in Statistics and Signal Processing, **Laboratoire des signaux et systèmes, CentraleSupélec**, France 2016-present
  - Thesis: A Random Matrix Approach to Deep Neural Networks Analysis.
  - Supervisor: **Prof. Romain Couillet, Prof. Yacine Chitour.**
- **M.Sc.** in Signal and Image Processing, **CentraleSupélec/Paris-Sud (11)**, France 2014-2016
- **B.Sc.** in Electronic Engineering, **Paris-Sud (11)**, France 2013-2014
- **B.Sc.** in Optical & Electronic Information, **HUST**, Wuhan, China 2010-2014

### Internship

- Research intern, LANEAS Group, CentraleSupélec**, France. Summer 2016
  - Research intern: random matrix analysis of support vector machines.
  - Supervisor: **Prof. Romain Couillet**
- Research intern, Institut d'Electronique Fondamentale**, France. Summer 2015
  - Research intern: modeling and circuits design of a thermoelectric system.
  - Supervisors: **Damien Querlioz** and **Jérôme Saint Martin**
- Intern, FiberhomeTech**, China. Summer 2014
  - Teaching assistant in a technical conference on telecommunication.
  - Supervisor: Prof. Zhiyong TAO

### Teaching

- 2017-2018: Lab work of Signal and System 1, with **Prof. Laurent Le Brusquet**, Department of Signal and Statistics, CentraleSupélec: 54 hours.

### Review activities

- **IEEE Transactions on Signal Processing**
- **Neural Processing Letters**

### Research interests

- Machine Learning
- Neural Networks
- Random Matrix Theory
- Statistics

## Publications

### Conferences

- **Z. Liao**, Y. Chitour, R. Couillet, “**Almost Global Convergence to Global Minima for Gradient Descent in Deep Linear Networks**”, (submitted to) 32nd Annual Conference on Neural Information Processing Systems (NIPS 2018), Montréal, Canada, 2018.
- **Z. Liao**, R. Couillet, “**The Dynamics of Learning: A Random Matrix Approach**”, (accepted at) The 35th International Conference on Machine Learning (ICML 2018), Stockholm, Sweden, 2018.
- **Z. Liao**, R. Couillet, “**On the Spectrum of Random Features Maps of High Dimensional Data**”, (accepted at) The 35th International Conference on Machine Learning (ICML 2018), Stockholm, Sweden, 2018.
- **Z. Liao**, R. Couillet, “**Une Analyse des Méthodes de Projections Aléatoires par la Théorie des Matrices Aléatoires (in French)**”, Colloque GRETSI’17, Juan Les Pins, France, 2017.
- **Z. Liao**, R. Couillet, “**Random Matrices Meet Machine Learning: A Large Dimensional Analysis of LS-SVM**”, IEEE International Conference on Acoustics, Speech and Signal Processing (ICASSP’17), New Orleans, USA, 2017.

### Journals

- C. Louart, **Z. Liao**, R. Couillet, “**A Random Matrix Approach to Neural Networks**”, The Annals of Applied Probability 28 (2), 1190-1248, 2018.
- **Z. Liao**, R. Couillet, “**A Large Dimensional Analysis of Least Squares Support Vector Machines**”, (submitted to) Journal of Machine Learning Research, 2017.

Updated on May, 2018.