

# Anna Korba

October 25th, 1991

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## Positions

### Gatsby Unit, University College London (UCL)

*Postdoctoral Research Fellow*

Laboratory of Pr. Arthur Gretton. My research is focused on learning theory, kernel methods and optimal transport.

**Dec. 2018–Present**

*London, United Kingdom*

## Education

### Télécom ParisTech

*Ph.D. in Applied Mathematics (Machine Learning)*

**Oct. 2015–Oct. 2018**

*Paris, France*

- Title: Learning from Ranking Data: Theory and Methods
- Supervisor: Stephan Cléménçon (Télécom ParisTech)
- Referees: Shivani Agarwal (Uni. of Pennsylvania), Eyke Hüllermeier (Uni. of Paderborn)
- Jury president: Jean-Philippe Vert (Mines ParisTech - Google Brain)
- Examiners: Florence d'Alché-Buc (Télécom ParisTech), Nicolas Vayatis (ENS Cachan)

### ENS Cachan

*Master MVA, First class honours*

Applied Mathematics for Computer Vision and Machine Learning.

**Sep. 2014–Jun. 2015**

*Cachan, France*

### ENSAE ParisTech

*Engineering degree, First class honours*

Applied Mathematics, Advanced Statistics & Economics.

**Sep. 2012–Jun. 2015**

*Paris, France*

### Lycée Henri IV

*Classes préparatoires*

Mathematics, Physics, Computer Science.

**Sep. 2009–Jun. 2012**

*Paris, France*

## Publications

Below, \* denotes equal contribution.

- [1] A. Salim, A. Korba, G. Luise. *Wasserstein Proximal Gradient*. Submitted, 2020.
- [2] M. Arbel, A. Korba, A. Salim, A. Gretton. *Maximum Mean Discrepancy Gradient Flow*. Advances in Neural Information Processing Systems (NeurIPS), 2019.
- [3] M. Achab\*, A. Korba\*, S. Cléménçon. *Dimensionality Reduction for Bucket Ranking: A Mass Transportation Approach*. Algorithmic Learning Theory (ALT), 2019.
- [4] A. Korba, A. Garcia, F. D'Alché-Buc. *A Structured Prediction Approach for Label Ranking*. Advances in Neural Information Processing Systems (NeurIPS), 2018.
- [5] S. Cléménçon, A. Korba. *On Aggregation in Ranking Median Regression*. European Symposium on Artificial Neural Networks (ESANN), 2018.
- [6] S. Cléménçon, A. Korba, E. Sibony. *Ranking Median Regression: Learning to Order through Local Consensus*. Algorithmic Learning Theory (ALT), 2018.
- [7] A. Korba, S. Cléménçon, E. Sibony. *A Learning Theory of Ranking Aggregation*. Artificial Intelligence and Statistics (AISTATS) 2017.
- [8] Y. Jiao, A. Korba, E. Sibony. *Controlling the distance to a Kemeny consensus without computing it*. International Conference on Machine Learning (ICML) 2016.

## Invited Talks

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- CFE-CMStatistics conference, London, December 2019.
- INRIA MAGNET, Lille, November 2019.
- Stuttgart Workshop on Statistical Learning, Stuttgart, July 2019.
- Algorithmic Learning Theory (ALT), Chicago, March 2019.
- LAMSADE, Université Paris Dauphine, February 2019.
- Gatsby Computational Neuroscience Unit, University College London, August 2018.
- Laboratory for Computational and Statistical Learning (LCSL) seminar, Università di Genova, June 2018.
- Conférence sur l'Apprentissage Automatique (CAp 2018), INSA Rouen, June 2018.
- Journée des Statistiques (JDS18 - Ranking session), EDF Lab, May 2018.
- Machine Learning for Big Data Chair day, Paris, April 2018.
- Algorithmic Learning Theory (ALT), Lanzarote, April 2018.
- Statistics/Learning at Paris-Saclay (3rd edition), Institut des Hautes Etudes Scientifiques (IHES), Bures-sur-Yvette, January 2018.
- Discrete Structures In Machine Learning Workshop at NIPS 2017, Long Beach, December 2017.
- French Forum of Young Women in Mathematics, Institut Élie Cartan de Lorraine, Nancy, November 2017.
- France/Japan Machine Learning Workshop, École Normale Supérieure, Paris, September 2017.
- Machine Learning for Big Data Chair Day, Paris, May 2017.
- Junior Conference on Data Science and Engineering (JDSE 2016), Paris, September 2016.
- European Conference on Operational Research (EURO 2016 - Preference Learning Stream), Poznań, July 2016.
- International Conference of Machine Learning (ICML 2016 - Ranking session), New York, June 2016.
- Machine Learning for Big Data Chair Day, Paris, June 2016.

## Other research activities

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### Organization.....

- Co-organizer of a minisymposium "Gradient flows and interactions between optimization and simulation algorithms" (two sessions) at SIAM International Conference on Optimization 2020 (SIAM OP20), Hong Kong.
- Co-organizer of the CSML seminar (Computer Science and Machine Learning) at UCL and of Gatsby's external seminar.

### Reviewing.....

- **Conferences:** Asian Conference on machine Learning ACML (2018), Neural Information Processing System (NeurIPS, 2018-2019), International Conference of Machine Learning (ICML, 2019), Artificial Intelligence and Statistics (AISTATS, 2019).
- **Journals:** Journal of Machine Learning Research (2019-2020).

## Professional Experience

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### Teaching and Supervision.....

#### Télécom ParisTech

Oct. 2015–Oct. 2018

*Teaching assistant*

*Paris, France*

Practical sessions for Master's students:

- Machine Learning, with Python (32 hours a year, 2016-2018)
- Econometrics, with MATLAB (32 hours a year, 2015-2016)
- Introduction to Bayesian Learning, with R (8 hours a year, 2017-2018)

Supervision of long-run Master's students Machine Learning projects with companies (32 hours a year, 2015-2018):

- Search-engine improvement for the start-up Clustaar
- French presidential elections predictions for the newspaper LePoint
- Recommendation for personalized newsfeed for the MonsterMessenger app

### Industrial.....

#### Data Scientist consultant

Sep. 2015–Sep. 2017

*Zebria (Jan. 2017–Sep. 2017)*

*Paris, France*

Text-mining on data from patients suffering from chronic diseases: scraping, pre-processing with the nltk library, Word2Vec analysis.

*Temiseo (May 2016–Oct. 2016)*

Development of algorithms for vision tasks on images (detection and recognition of media device and logos with OpenCV and Keras, barcode detection and reading with zbar).

*The PriceHub (Sep. 2015–Jan. 2016)*

Implementation of a pricing algorithm for industrial mechanical parts.

#### Data Scientist intern

Jul. 2014–Sep. 2014

*Over-Graph (909c agency)*

*Paris, France*

Optimization of strategies for marketing campaigns on Facebook.

## Skills

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**Languages:** French (native), English (fluent), Italian (intermediate).

**Programming:** Python, R, MATLAB (advanced).

**Others:** Latex (advanced), HTML/CSS, D3.js (basics).

## Distinctions

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2017: Participated to the *Machine Learning Summer School (MLSS)* 2017 in Tübingen, Germany (15 % success rate).

2016: Best Communication award at *Junior Conference on Data Science and Engineering*.

2015: Ranked 6<sup>th</sup> as part of a team at the *Data Science Game 2015* international competition.