

Michael Arbel

Curriculum Vitae

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Education

- 2016-2020 **Gatsby Computational Neuroscience Unit, PhD**, Machine Learning, UK.
Regularization and Optimization for Implicit Generative Models. Supervisor: Arthur Gretton.
- 2014-2015 **École Normale Supérieure de Cachan, MSc, MVA**, Machine Learning and Computer Vision, France.
Convex optimization, Graphical models, Kernel methods, Reinforcement Learning, Object Recognition and Computer Vision. High honors.
- 2011-2014 **École Polytechnique, B.A. and MSc**, *Mathematics and Physics*, France.
Major: Mathematics (Complex Analysis, Measure theory, Distributions and Dynamical systems, Probabilities, Statistics, Learning theory). Minor: Physics (Quantum, Relativity, Statistical). GPA: 3.93/4.

Academic and Non Academic Positions

- 2015-2016 **Computer Vision Engineer**, *Prophesee*.
Real-time multi-target tracking algorithms for neuromorphic event-based cameras.
Auto-calibration algorithm for event-based stereo cameras using structure from motion.
- 2015 **Graduate Student Researcher**, *Data Team DI*, ENS Paris.
Recurrent networks for long-range dependencies in simple grammars using wavelets.
Supervisor: Stéphane Mallat.
- 2014 **Graduate Student Researcher**, *ORFE*, Princeton University.
Mean field games with a dependence on the distribution of the control: an Existence and Uniqueness result. Supervisor: René Carmona.

Publications

- 2019 [1] **Michael Arbel**, Arthur Gretton, Wuchen Li, Guido Montufar. Kernelized Wasserstein Natural Gradient. *Submitted 2019*.
- 2019 [2] **Michael Arbel**, Anna Korba, Adil Salim, Arthur Gretton. Maximum Mean Discrepancy Gradient Flow. *NeurIPS 2019*.
- 2018 [3] **Michael Arbel***, Dougal J. Sutherland*, Mikołaj Bińkowski, Arthur Gretton. On gradient regularizers for MMD GANs. *NeurIPS 2018*. *equal contribution.
- 2018 [4] Mikołaj Bińkowski, Dougal J. Sutherland, **Michael Arbel**, Arthur Gretton. Demystifying MMD GANs. *ICLR 2018*.
- 2018 [5] Dougal J. Sutherland, Heiko Strathmann, **Michael Arbel**, Arthur Gretton. Efficient and principled score estimation. *AISTATS 2018*.
- 2018 [6] **Michael Arbel**, Arthur Gretton. Kernel Conditional Exponential Family. *AISTATS 2018*.

Invited Talks

- 2019 Workshop on Recent developments in kernel methods, 2019, UCL (London, UK).
- 2019 Deep Learning Theory Kickoff Meeting 2019, MPI (Leipzig, Germany).
- 2018 Cambridge-Tübingen workshop 2018 (Tenerife, Spain).

2018 Google Developer Group Reading and Thames Valley (Reading, UK).

Other Research Experience

2018-present **Reviewer**, *NeurIPS*, *ICLR*, *JMLR*..

2017-present **Organizing DeepMind/CSML Research Seminars**, *UCL*.

Weekly research seminars in Machine Learning jointly organized with UCL Computer Science and Statistics departments.

2017 **Teaching Assistant**, *UCL*.

- Probabilistic and Unsupervised Learning
- Advanced Topics in Machine Learning

Honors and Awards

2018 Best Poster Award at MSR AI Summer School 2018 (Cambridge, UK).

2014 Princeton Fellowship.

2014 Award of the Financial Risk Chair of École Polytechnique for research on Mean Field Games.

2011–2015 French Government Eiffel Excellence Scholarship.

2009 Member of the Moroccan team at the International Mathematical Olympiads, Germany.

Languages

Natural English (fluent), French (native), Arabic (native).

Programming Python, C++, Pytorch and Tensorflow.