Matthieu C. MARTIN, Ph.D.

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Employment History

04.2019– · · · **Senior Research Scientist** Criteo AI Lab, Grenoble, France
(i) part of Causality and Learning team (ii) non convex optimization (iv) adversarial/contextual bandits (iv) counter-factual off-policy estimation and learning (v) develop statistical tools to assess positiveness of A/B tests in part. compute confidence intervals when interference occur

07.2015–03.2019 **PhD assistant in Mathematics** École Polytechnique Fédérale de Lausanne, Lausanne, Switzerland
(i) taught in 7 semester courses at Bachelor and Master level in French and English (ii) worked in an extremely qualified and multicultural team with people coming from top institutions

09.2014–06.2015 **Data scientist** Ridesurfing, Sydney, Australia
Business intelligence (i) forecasting client demand to anticipate our supply (ii) enhance the **user experience** and business outcomes using cohort analysis (iii) investigate patterns in the data using machine learning (iv) develop a suite of KPI reports on forecasting efficiency.

02.2013–10.2013 **Data scientist** Coregas, Yennora NSW, Australia
(i) internship on different projects such as **forecasting client demand** to anticipate our supply or dynamic optimization between depots and branches to reduce transport cost, incl. **Data- Mining, Predictive Analytics**

06.2012–01.2013 **Data Analyst** Yogiplay, Menlo Park, CA, USA
(i) internship machine learning methods on the user's data, crossing Google analytics with server log files to better understand user behavior and improve our applications for devices (ii) business intelligence: AB-testing **optimization to increase retention** (iii) use of Pentaho Data Integration, MySQL and shell script (awk) in log files to extract useful information/typical behavior (iv) cronjobs and automation.

09.2010–08.2011 **Pricing project Internship,** Legrand Company, Paris, France
(i) one-semester project to enter into domestic automation market (ii) study of the current pricing of electronic components to better manage inventory, optimize its supply and ultimately to minimize its costs. Final stage of « Project enjeux » competition at École Centrale de Paris.

Education

07.2015–03.2019 **Ph.D., École Polytechnique Fédérale de Lausanne,** Lausanne, Switzerland
Thesis title: *Stochastic approximation methods for PDE constrained optimal control problems with uncertain parameters.*

09.2010–08.2014 **M.Sc. Computer Science, École Centrale de Paris,** Paris, France
top French engineering school in **optimization, data mining**

09.2013–08.2014 **M.Sc. Pierre and Marie Curie University – École Polytechnique,** Paris, France
Major: **game theory**, **optimization** and **economics**.

Education (continued)

09.2007–08.2010 **Classes préparatoires MPSI/MP*,** Lycée Louis le Grand, Paris, France Preparatory school for national competitive exams to enter French engineering Schools, first year in Lycée du Parc, Lyon, France.

08.2007 **French Baccalaureate, Scientific Program,** Lycée Vaugelas, Chambéry, France 16.9/20 cum Laude.

Research Publications

PhD Thesis

1. Martin, M. (2019). *Stochastic approximation methods for PDE constrained optimal control problems with uncertain parameters*. PhD thesis. doi:10.5075/epfl-thesis-7233

Journal Articles

1. Martin, M., Krumscheid, S., & Nobile, F. (2018). Analysis of stochastic gradient methods for PDE-constrained optimal control problems with uncertain parameters. (04.2018). **accepted** for publication at ESAIM: Mathematical Modelling and Numerical Analysis (M2AN). Retrieved from https://www.esaim-m2an.org/articles/m2an/abs/2021/05/m2an200090/m2an200090.html
2. Martin, M., & Nobile, F. (2018). PDE-constrained optimal control problems with uncertain parameters using SAGA. arXiv:1808.03112, **accepted** for publication at SIAM / ASA Journal on Uncertainty Quantification (JUQ). Retrieved from http://infoscience.epfl.ch/record/258067

Conference Proceedings

1. Zenati, H., Bietti, A., Diemert, E., Mairal, J., **Martin**, **M.**, & Gaillard, P. (2022). Efficient kernelized ucb for contextual bandits. In G. Camps-Valls, F. J. R. Ruiz, & I. Valera (Eds.), *Proceedings of the 25th International Conference on Artificial Intelligence and Statistics (AISTATS 2022)* (Vol. 151, pp. 5689–5720). PMLR. Retrieved from https://proceedings.mlr.press/v151/zenati22a.html
2. Héliou, A., **Martin**, **M.**, Mertikopoulos, P., & Rahier, T. (2021). Zeroth-order non-convex learning via hierarchical dual averaging. In M. Meila & T. Zhang (Eds.), *Proceedings of the 38th international conference on machine learning* (Vol. 139, pp. 4192–4202). PMLR. Retrieved from https://proceedings.mlr.press/v139/heliou21a.html
3. Rahier, T., Héliou, A., **Martin**, **M.**, Renaudin, C., & Diemert, E. (2021). Individual treatment prescription effect estimation in a low compliance setting. In *Proceedings of the 27th ACM SIGKDD Conference on Knowledge Discovery & Data Mining* (pp. 1399–1409). doi:10.1145/3447548.3467343
4. Héliou, A., **Martin**, **M.**, Mertikopoulos, P., & Rahier, T. (2020). Online non-convex optimization with imperfect feedback. In H. Larochelle, M. Ranzato, R. Hadsell, M. F. Balcan, & H. Lin (Eds.), *Advances in Neural Information Processing Systems (NeurIPS)* (Vol. 33, pp. 17224–17235). Curran Associates, Inc. Retrieved from https://proceedings.neurips.cc/paper/2020/file/c7c46d4baf816bfb07c7f3bf96d88544-Paper.pdf

Technical report

1. Renaudin, C., & **Martin**, **M.** (2021). About evaluation metrics for contextual uplift modeling. arXiv: 2107.00537 [math.OC]
2. Zenati, H., Bietti, A., **Martin**, **M.**, Diemert, E., & Mairal, J. (2020). Counterfactual learning of continuous stochastic policies. arXiv: 2004.11722 [stat.ML]

3 **Martin**, **M.**, Nobile, F., & Tsilifis, P. (2019). A multilevel stochastic gradient method for PDE-constrained optimal control problems with uncertain parameters. arXiv: 1912.11900 [math.OC]

Skills

Languages	English (Fluent), French (Native speaker), German (Reading & Conversational, 5 months spent in Berlin with Erasmus program).
OS	Linux, MacOS, Windows (extensive).
Python	extensive incl. ML libraries.
Databases	MySQL, PySpark.
Other	Obj. Caml, R, Freefem++, LaTeX typesetting.

Miscellaneous Experience

International conferences and attended workshops

12.2019	NeuRIPS 2019, Vancouver, BC, Canada
07.2018	13th World Congress in Computational Mechanics, NYC, USA
06.2018	Workshop on analysis of adaptive Stochastic Gradient and MCMC algorithms, London, UK
09.2017	Frontiers of Uncertainty Quantification in Engineering, Munich, Germany
07.2017	Quantification of Uncertainty: Improving Efficiency and Technology, Trieste, Italy

References

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