

# Emile MATHIEU

## PERSONAL DATA

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## RESEARCH INTERESTS

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My current research centres around probabilistic machine learning, geometry and equivariance.

## WORK EXPERIENCE

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| SEPT-DEC 2019 | Research Intern at <b>Facebook Artificial Intelligence Research</b> , New York<br>Worked on extending normalizing flows to manifolds (1), with climate science application, supervised by Maximilian Nickel.                                     |
| MAY-SEP 2017  | Research Intern at <b>Department of Statistics</b> , Oxford<br>Studied sampling methods for discrete random probability measures in probabilistic programs (5). Contributed to the open source probabilistic program <a href="#">TURING.JL</a> . |
| JAN-JUL 2016  | Machine Learning Intern at <b>Criteo</b> , Paris<br>In the context of online auctions, improved predictive bidding models accuracy in the presence of perturbative and periodical events such as sales.  |
| JUL-DEC 2015  | Software Engineer Intern at <b>BAM Lab</b> , Paris<br>Worked as a full-stack developer, using leading technologies to develop mobile and web-site applications, and their associated backend services.   |
| MAY-JUL 2014  | Data Scientist Intern at <b>IFSTTAR Research Institute</b> , Paris<br>Applied unsupervised probabilistic models such as LDA, to transportation's data in order to better understand commuters behaviour.   |

## EDUCATION

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| SINCE OCT 2017 | PhD in Machine Learning with Prof. Yee Whye TEH at <b>University of Oxford</b> , Department of Statistics.  |
| 2016 - 2017    | Master of Science (II) in Machine Learning & Computer Vision (MVA) at <b>Ecole Normale Supérieure</b> Paris-Saclay, Paris, passed with honours   Gpa: 4/4 |
| 2014 - 2015    | Master of Science (I) in Mathematics & Computer Science at <b>École des Ponts ParisTech</b> , Paris   Gpa: 3.94/4   |
| 2011 - 2014    | Bachelor's Degree in Science (Mathematics, Physics and Computer Science), at <b>École des Ponts ParisTech</b> , Paris   Gpa: 3.857/4                      |
| JULY 2011      | Baccalauréat (French secondary school diploma) Nantes, Science major, Mathematics option, passed with honours.  |

## LANGUAGES

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FRENCH: Mothertongue, ENGLISH: Fluent (TOEIC: 930, TOEFL: 103, GRE VR: 157), SPANISH: Moderate

## COMPUTER SKILLS

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Advanced Knowledge: Python, PyTorch, Bash,  $\LaTeX$   
Intermediate Knowledge: Julia, TensorFlow, Matlab, C++, JavaScript

## PUBLICATIONS

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- [1] E. Mathieu and M. Nickel. Riemannian Continuous Normalizing Flows. In *Advances in Neural Information Processing Systems*, 2020.
- [2] E. Mathieu, T. Rainforth, N. Siddharth, and Y. W. Teh. Disentangling disentanglement in variational autoencoders. In K. Chaudhuri and R. Salakhutdinov, editors, *Proceedings of the 36th International Conference on Machine Learning*, volume 97 of *Proceedings of Machine Learning Research*, pages 4402–4412, Long Beach, California, USA, 09–15 Jun 2019. PMLR.
- [3] E. Mathieu, C. Le Lan, C. J. Maddison, R. Tomioka, and Y. W. Teh. Continuous Hierarchical Representations with Poincaré Variational Auto-Encoders. In *Advances in Neural Information Processing Systems*, 2019.
- [4] B. Bloem-Reddy, A. Foster, E. Mathieu, and Y. W. Teh. Sampling and inference for beta neutral-to-the-left models of sparse networks. In *Conference on Uncertainty in Artificial Intelligence*, August 2018.
- [5] B. Bloem-Reddy, E. Mathieu, A. Foster, T. Rainforth, H. Ge, M. Lomelí, Z. Ghahramani, and Y. Whye Teh. Sampling and inference for discrete random probability measures in probabilistic programs. In *Workshop on Advances in Approximate Bayesian Inference, NIPS*, 2017.