Arthur Mensch

Ph.D. candidate in Machine Learning
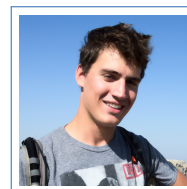
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Education

9/2015–9/2018	**Ph.D. candidate**, *Inria Parietal*, Saclay, France. *Large-scale optimization and modelling for functional brain imaging* Supervised by Pr. G. Varoquaux, Pr. J. Mairal and Pr. B. Thirion
2011–2015	**École Polytechnique**, *Engineer Degree, Master of Science*, Palaiseau, France. Applied Mathematics, Computer Science,Biology, Mechanics, Physics
2014–2015	**École Normale Supérieur**, *Master of Science*, Cachan, France. Master MVA : Mathematics for vision and machine learning. *Highest honors*
2014–2015	**Télécom ParisTech**, *Engineer Degree*, Paris, France. Computer Science, Applied Mathematics
2009–2011	**Preparatory school**, *Lycée Hoche*, Versailles, France. Mathematics, Physics, Computer Science
2009	**Baccalauréat International**, *Lycée Jean-Pierre Vernant*, Sèvres, France. *Highest honors*

Publications

A. M., J. Mairal, B. Thirion, and G. Varoquaux. Stochastic Subsampling for Factorizing Huge Matrices. *IEEE Transactions on Signal Processing*, 2018.

A. M., J. Mairal, D. Bzdok, B. Thirion, and G. Varoquaux. Learning neural representations of human cognition across many fmri studies. In *Advances in Neural Information Processing Systems*, 2017.

A. M., J. Mairal, B. Thirion, and G. Varoquaux. Dictionary Learning for Massive Matrix Factorization. In *Proceedings of the International Conference on Machine Learning*, 2016a.

E. Dohmatob, A. M., G. Varoquaux, and B. Thirion. Learning brain regions via large-scale online structured sparse dictionary-learning. In *Advances in Neural Information Processing Systems*, 2016.

A. M., G. Varoquaux, and B. Thirion. Compressed Online Dictionary Learning for Fast fMRI Decomposition. In *IEEE International Symposium on Biomedical Imaging*, 2016b.

A. M., J. Mairal, B. Thirion, and G. Varoquaux. Subsampled online matrix factorization with convergence guarantees. In *NIPS Workshop on Optimization for Machine Learning*, 2016c.

A. M., E. Piuze, L. Lehnert, A.J. Bakermans, J. Sporring, G.J. Strijkers, and K. Siddiqi. Connection Forms for Beating the Heart. In *MICCAI Workshop on Statistical Atlases and Computational Modelling of the Heart*, 2014.

Software development

Open-source development	**Scikit-learn**, *Widely-used machine learning library in Python*. Performance and stability of decomposition methods, packaging and CI, SAGA algorithm
	Nilearn, *Easy-to-use Python library for machine learning in neuro-imaging*. Decomposition modules, documentation, plotting, reviews

Languages	Python, C, C++, Java, Bash, JS	System	Linux, Docker, GCloud, MongoDB

Previous collaborations

9/2017–12/2017 **NTT Communication Laboratories**, *Intern researcher*, Kyoto, Japan.
Differentiable dynamic rogamming — collaboration with Dr. M. Blondel

5/2015–9/2015 **Inria Parietal**, *Intern researcher*, Saclay, France.
Improvement of dictionary learning techniques for brain imaging — under Pr. B. Thirion supervision

4/2014–7/2014 **McGill University, School of Computer Science**, *Intern researcher*, Montréal, Canada.
Analysis and modelling of heart dynamics and geometry – under Pr. K. Siddiqi supervision
High rewards from the Department of Applied Mathematics at École Polytechnique

Selected talks

11/2017 **Advanced Telecommunications Research Institute**, Kyoto, Japan.
Learning Neural Representations of Human Cognition — Invited by Pr. Okito Y.

7/2017 **World Statistics Congress**, Marrakech, Morocco.
Massive Matrix Factorization for Resting-State fMRI Decomposition — Invited by Pr. D. Degras

10/2016 **RecSys FR**, Paris, France.
Massive Matrix Factorization : Application to collaborative filtering

6/2016 **International Conference on Machine Learning**, New York, USA.
Dictionary Learning for Massive Matrix Factorization

Teaching

1/18–4/18 **Deep learning**, *Master of Data Science*, Université Paris-Saclay, France.
Supervising practical sessions for 2nd year master students — course given by O. Grisel and C. Ollion

1/18–4/18 **Numerical analysis/optimization**, *ENSAE*, Saclay, France.
Tutorials for 3rd year students

9/12–5/15 **Analysis/algebra**, *Lycée Pasteur, Lycée Hoche*, Neuilly sur Seine – Versailles, France.
Oral preparation for 2nd year students

Community occupations

2017– **Ad-hoc reviewer**, NIPS, ICML, Neuroimage.

Work experience

07/13–08/13 **Intern web developer**, *Option*, Santiago du Chili, Chili.
Realized PHP back-end tools for administering targeted web advertisement

12/11–04/12 **Deputy platoon leader**, *1er Régiment d'Hélicoptères de Combat*, Phalsbourg, France.
Commandeered a platoon of 30 people during its general military training in the French Army

Languages

French	Native	*Mothertongue*
English	Fluent – C2	*Working language, baccalauréat international*
Spanish	Advanced – C1	*Experience in Latin America*
Japanese	Basic level – training	*Experience in Japan*

Hobbies

Classic guitar, badminton, running, marathon