Elvis Dohmatob, PhD.

Senior Researcher, Criteo AI Lab

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Date of birth: 27 April 1987

Education

Oct 2014 – Sep 2017 **Doctor of Philosophy (PhD.), Computer Science**, *Université Paris-Saclay*.
Title: Enhancement of functional brain connectome analysis by the use of deformable models in the estimation of spatial decompositions of the brain images.
Supervisors: Bertrand THIRION, PhD; Gael VAROQUAUX, PhD.
Jury: Marc Schoenauer, PhD; John Ashburner, PhD; Gabriel Peyré, PhD; Moritz Grosse-Wentrup, PhD.

2010 – 2011 **MSc. Cryptology and Information Security**, *University of Bordeaux 1*.
Pentesting telecom and VoIP-like protocols like SS7, SIGTRAN, SIP, GTP.

2009 – 2010 **Maîtrise ès Mathématiques**, *University of Bordeaux 1*.
On explicit constructions of "good" LDPC QECCs (*Low-Density Parity-Check Quantum Error-Correcting Codes*). Supervised by Gilles ZEMOR.

2005 – 2008 **BSc. Mathematics and Computer Science**, *University of Buea*.

Professional experience

March 2018 – Present **Senior researcher**, *Criteo AI Lab, Paris, France*.
Research in deep-learning, adversarial examples, learning theory, robust optimization, reinforcement-learning

Oct 2017 – Dec 2017 **Post-doctoral researcher**, *Parietal Team – INRIA / CEA, Neurospin, Neurospin, Université Paris-Saclay, France*.
Low-dimensional models for inter-subject variability.

Oct 2014 – Sep 2017 **Part-time research engineer**, *Parietal Team – INRIA / CEA, Neurospin, Neurospin, Université Paris-Saclay, France*.
While preparing my PhD, a 6th of my time is spent programming and consulting.

Oct 2012 – Oct 2014 **Research engineer**, *Parietal Team – INRIA / CEA, Neurospin, Neurospin, Université Paris-Saclay, France*.

Mar 2011 – Aug 2011 **Cryptology and Security intern**, *P1 Security*, Paris, France.
Implementation of an event-driven pentesting framework for telecom protocols

Selected scientific publications

Summary from Google scholar: Total citations $\geq$ 400; total papers $\geq$ 15; h index $\geq$ 8; 110 index $\geq$ 6.
Full information available at: https://scholar.google.fr/citations?user=FDWgJY8AAAAJ&hl=fr

2019
- *Generalized No Free Lunch Theorem for Adversarial Robustness.* International Conference in Machine Learning (ICML). https://arxiv.org/pdf/1810.04065.pdf
- *Learning Nonsymmetric Determinantal Point Processes.* Advanced Neural Information Processing Systems – NeurIPS conference (NeuRIPS). https://arxiv.org/pdf/1905.12962.pdf
- *On the Convergence of Approximate and Regularized Policy Iteration Schemes.* OptRL workshop (NeuRIPS). https://arxiv.org/abs/1909.09621

2018 ○ *Inter-subject registration of functional images: do we need anatomical images ?* Frontiers in Neuroinformatics (Journal). https://www.frontiersin.org/articles/10.3389/fnins.2018.00064/abstract

2016 ○ *Learning brain regions via large-scale online structured sparse dictionary learning*. NeurIPS conference. https://hal.inria.fr/hal-01369134v3
○ *A simple algorithm for computing Nash-equilibria in incomplete information games*. NeurIPS OPT2016 workshop. https://arxiv.org/abs/1507.07901

2015 ○ *Local Q-Linear Convergence and Finite-time Active Set Identification of ADMM on a Class of Penalized Regression Problems*. ICASSP - 41st International Conference on Acoustics, Speech and Signal Processing (*IEEE*). https://hal.archives-ouvertes.fr/hal-01265372/file/paper.pdf

Scientific reviewing

Since 2018 OHBM –Organization for Human Brain Mapping
Since 2017 LLD –Learning with Limited Labelled data– NeurIPS workshop
Since 2016 NeurIPS conference

Supervision of students

Jan. 2019 – July 2019 Morgan Goibert, Masters' internship
Nov. 2019 – 20?? Morgan Goibert, PhD candidate co-supervised with Stéphan Clémançon

Languages

Bilingual English (fluent), French (fluent)

Contributions to open-source software projects

Data science & AI scikit-learn http://scikit-learn.org/stable/
Complete list See complete list on my github profile at https://github.com/dohmatob

IT and computing skills

See my github profile at https://github.com/dohmatob
Programming Languages Python (including Numpy/Scipy, Maplotlib, Seaborn), bash, Latex, C++, Emacs, Matlab
Data science & AI convex optimization, scikit-learn, pandas, pytorch, keras
Software Engineering OOP, TDD, version control (git, github), continuous integration (travis, circle-ci), parallel computing (xargs, joblib)
Operating Systems GNU/Linux, Windows

Awards and scholarships

2014 Honourable Mention (2ND price) awarded to the paper "*Benchmarking solvers for TV-ℓ_1 least-squares and logistic regression in brain imaging*" (http://hal.inria.fr/hal-00991743), presented at the 4th international workshop on Pattern Recognition in Neuro-imaging (PRNI 2014), Max-Planck Institute for Intelligent Systems, Tuebingen – Germany
2009 - 2011 Erasmus Mundus, ALGANT (*Algebra, Geometry, and Number Theory*), Université de Bordeaux 1

Interests

Research	machine learning, convex optimization, neuroscience, game theory
Hobbies	programming, dancing, ping-pong, arcade games