
Education

- 2010-2011 **MSc. in Cryptology and Information Security**, *University of Bordeaux 1*.
Pentesting for telecom and VoIP-like protocols including SS7, SIGTRAN, SIP, GTP, etc.
- 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. in Mathematics and Computer Science**, *University of Buea, Cameroon*.

Professional Experience

- October 2012 - present **Research engineer**, *PARIETAL Team - INRIA, Neurospin CEA, Saclay*.
Non-smooth convex optimization; preprocessing and statistical analysis of fMRI data; registration algorithms; machine learning on fMRI data; software engineering
- September 2011 - **Freelancer and Open-Source**, *Various employers*.
October 2012 Simulations for CR (Cognitive Radio) research; Windows system programming (DLLs, user-space root-kits, etc.); implementation of Machine Learning algorithms
- March 2011 - **Cryptology and Security intern**, *P1 Security, Paris, France*.
August 2011 Implementation of an event-driven pentesting framework for telecom and VoIP-like protocols

IT and Computing Skills

- Languages Python, ASM x86, C/C++, MATLAB, R, PARI/GP, Emacs-Lisp, javascript
- Machine Learning LibSVM, scikit-learn, pandas
- Neuro-imaging nilearn, SPM, FSL, nipy, nipytype, freesurfer, mayavi, pyprocess
- Code Engineering OOP, TDD, EDD, version control (git, github), CI (travis), parallel computing
- Operating Systems Linux, Windows (including shell scripting and system programming skills)
- Network Protocols TCP/IP, SMB, IPSec, LDAP, SSL, SIP, DNS
- Cryptology Number Theory, Elliptic Curves, Smart Cards, Asymmetric Cryptography (RSA), Symmetric Cryptography (PKI, DH, DES, AES)
- Security Snort, Wireshark, Nmap, METASPLOIT, OllyDbg, Immunity Debugger, IDA Pro, SPIKE

My *github* profile <https://github.com/dohmatob>

Scientific Publications (journal and conference papers)

- 2014 ○ B. THIRION, G. Varoquaux, E. DOHMATOB, J.-B. POLINE, “Which fMRI clustering gives good brain parcellations?”. *Frontiers in Neuroscience*. <http://journal.frontiersin.org/Journal/10.3389/fnins.2014.00167/abstract>
- E. DOHMATOB, A. Gramfort, B. THIRION, G. Varoquaux “Benchmarking solvers for $TV-\ell_1$ least-squares and logistic regression in brain imaging”. *Pattern Recognition in Neuroimaging (PRNI), IEEE*. <http://hal.inria.fr/hal-00991743>

- 2013 ○ A. ABRAHAM, E. DOHMATOB, B. THIRION, D. SAMARAS, and G. VAROQUAUX, “*Extracting brain regions from rest fMRI with Total-Variation constrained dictionary learning*”. MICCAI - 16th International Conference on Medical Image Computing and Computer Assisted Intervention - 2013 (2013). <http://hal.inria.fr/hal-00853242>

Contributions to open-source software projects

- Neuro-Imaging nipy <http://nipy.org>, Nilearn <http://nilearn.github.io>, pypreprocess <https://github.com/neurospin/pypreprocess>
- Personal projects See complete list on my github profile: <https://github.com/dohmatob>
- My *Open Source Report Card* Tentatively, an impartial automatically generated statistical summary of my “contributions heat map” can be found at <http://osrc.dfm.io/dohmatob/>

Scientific Talks

- PRNI 2014 At the PRNI (Pattern Recognition in Neuroimaging) conference that took place 3rd – 6th June 2014 (Max-Planck Institute for Intelligent Systems, Tuebingen – Germany), I presented my work, “*Benchmarking solvers for $TV\text{-}\ell_1$ least-squares and logistic regression in brain imaging*” (<http://hal.inria.fr/hal-00991743>).

Hackathon Experience

- Parietal retreat 2014 During the last retreat of our team (Parietal – INRIA) to Normandy (6th – 8th April 2014), Virgile FRITSCH and I did VBM (Voxel-Based Morphometry) on a public dataset (Oasis database). The outcome of this sprint is summarized here <https://github.com/Parietal-INRIA/parietal-python/wiki/VBM-dataset-for-nilearn>
- Google Hash Code Paris 2014 In this competition (4th – 5th April 2014), I teamed with 2 other members to realize the task of implementing a street-viewer for Paris. The underlying problem can be formulated as a multi-objective TSP. Our algorithm was a Monte-Carlo (random walks on the roadmap of Paris).
- Brainhack 2013 The hackathon held 23rd – 26th October 2013 in Paris. With Alexandre Gramfort, I worked on the preprocessing and statistical analysis (second-level GLM) of Henson’s multi-modal (fMRI, EEG/MEG, DTI) faces vs objects dataset.

Languages

- Bilingual English (fluent), French (fluent)

Awards and Scholarships

- 2014 Honourable Mention (2nd price) awarded to the paper “*Benchmarking solvers for $TV\text{-}\ell_1$ least-squares and logistic regression in brain imaging*”, by E. DOHMATOB, A. GRAMFORT, B. THIRION, G. VAROQUAUX (<http://hal.inria.fr/hal-00991743>), presented at the 4th international workshop on Pattern Recognition in NeuroImaging (PRNI 2014), Max-Planck Institute for Intelligent Systems, Tuebingen – Germany
- 2009 - 2011 Erasmus Mundus, University of Bordeaux 1

Interests

- Research Machine learning, optimization, image registration, stochastics and statistics, cryptology, human connectome mapping
- Hobbies Reading, dancing, running