TOM DUPRELATOUR

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Postdoc 2019-present	**University of California Berkeley**, Berkeley, USA Building machine learning models for neuroimaging. Advised by Jack Gallant.

EDUCATION

PhD 2015-2018	**Télécom Paris**, Paris, France Thesis: "Non-linear models for neurophysiological time-series" Advised by Alexandre Gramfort and Yves Grenier. *Best paper award - 1st prize in doctoral school (Université Paris-Saclay).* *PhD thesis award - 1st prize in Signal, Image & Vision (Club EEA, GRETSI, GdR ISIS).* *"This is technically the most advanced PhD thesis I have ever seen, and the second best doesn't even come close to it." (Guido Nolte - manuscript reviewer)*
MS 2013-2015	**École Polytechnique Fédérale de Lausanne**, Lausanne, Switzerland Master degree in information technology: Machine learning, signal processing, image processing, distributed systems, wireless communications, etc.
MS 2010-2013	**École Polytechnique**, Palaiseau, France Engineer degree in *top* French "Grandes Ecoles": Cross-curricular formation, mathematics, physics, computer science. Major in electrical engineering.
CPGE 2008-2010	**Lycée Saint Louis**, Paris, France A 2-year intensive program for admission to French "Grandes Ecoles". Linear algebra, calculus, physics.

EXPERIENCE

Teaching assistant 2016 - 2017	**Télécom ParisTech**, Paris, France Teaching assistant in the following classes: sigma202a - Linear time-series (first year of master). Data camp - One week on practical Data Science (second year of master). PACT - Year-long innovative team project (last year of bachelor).
Research engineer 2015 (5 months)	**Télécom ParisTech**, Paris, France Development of scikit-learn, a machine learning library in Python. Implementation of new solvers for linear models, and matrix factorization. *"Fastest inclusion in the core developers team." (Gael Varoquaux)*
Research intern 2014 (6 months)	**DxO Labs**, Boulogne-Billancourt, France Research on blind deconvolution for motion deblurring in computer vision. *State of the art improvement (confidential).* *Research report used as a exemplary reference by Pierre Vandergheynst (EPFL).*
Research intern 2013 (3 months)	**Institut d'Électronique Fondamentale**, Orsay, France Research on a calculus paradigm using stochastic binary signals. Implementation in Matlab, and in Cadence with analog CMOS circuits. *Summa cum laude for my research report (top 10%) (Ecole polytechnique).*
First responder 2011 (7 months)	**Paris Fire Brigade**, Paris, France Member of a first responders unit (full time). Decision making in critical situations (cardiac arrests, accidents, strokes, ...). *Took leadership of the team after four months.*

updated July 2022

SERVICES

Reviewer 2019-2020	Reviews for top machine learning conferences (NeurIPS/ICML/ICLR), and for open-source software journals (JMLR/JOSS/Scipy) *Reviewer award - Free registration for NeurIPS 2019.*
Advisor Nov. 2019	Advices for new contributors in a scikit-learn hackathon, San Francisco, USA Organized by "Women in machine learning and data science".

LANGUAGES

French	Native proficiency
English	Professional working proficiency
Spanish	Limited working proficiency

COMPUTING

I am an active developer, maintainer, and contributor to several scientific packages in the Python community. More details in my GitHub profile: https://github.com/tomdlt.

Skills

languages	Python, Cython, Bash, (Matlab), (Java), (C++)
tools	Git, LateX, MS Office, Adobe Photoshop

Open-source software

scikit-learn	(Core developer) Python - General machine learning.
pactools	(Main author) Python - Phase amplitude coupling in neural time-series.
alphacsc	(Main author) Python - Convolutional dictionary learning in time-series.
himalaya	(Main author) Python - Efficient multiple-target regression models.
voxelwise tutorials	(Main author) Python - Tutorials for voxelwise encoding models.
pycortex	(Maintainer) Python - Surface visualization of fMRI data.

PUBLICATIONS

[**1**] **T. Dupré la Tour**, M. Eickenberg, A. Nuñez-Elizalde, J. L. Gallant.
Feature-space selection with banded ridge regression.
bioRxiv, 2022

[**2**] T. Moreau, M. Massias, A. Gramfort, ..., **T. Dupré la Tour**, ...
Benchopt: Reproducible, efficient and collaborative optimization benchmarks.
arXiv, 2022

[**3**] **T. Dupré la Tour**, M. Lu, M. Eickenberg, J. L. Gallant.
A finer mapping of convolutional neural network layers to the visual cortex.
NeurIPS workshop (SVRHM), 2021

[**4**] L. Grabot, T. W. Kononowicz, **T. Dupré la Tour**, A. Gramfort, V. Doyère, V. van Wassenhove.
The strength of alpha-beta oscillatory coupling predicts motor timing precision.
Journal of Neuroscience, 2019

[**5**] **T. Dupré la Tour***, T. Moreau*, M. Jas, A. Gramfort.
Multivariate convolutional sparse coding for electromagnetic brain signals.
NeurIPS, 2018

[**6**] **T. Dupré la Tour**, Y. Grenier, A. Gramfort.
Driver estimation in non-linear autoregressive models.
ICASSP, 2018

[**7**] **T. Dupré la Tour**, L. Tallot, L. Grabot, V. Doyère, V. van Wassenhove, Y. Grenier, A. Gramfort.
Non-linear autoregressive models for cross-frequency coupling in neural time-series.
PLOS Computational biology, 2017

[**8**] M. Jas*, **T. Dupré la Tour***, U. Simsekli, A. Gramfort.
Learning the morphology of brain signals using alpha-stable convolutional sparse coding.
NeurIPS, 2017

[**9**] **T. Dupré la Tour**, Y. Grenier, A. Gramfort.
Parametric estimation of spectrum driven by an exogenous signal.
ICASSP, 2017

[**10**] **T. Dupré la Tour**, Y. Grenier, A. Gramfort.
Parametric models of phase-amplitude coupling in neural time-series.
BASP workshop, 2017

INVITED TALKS

Apr. 2021   *Convolutional sparse coding for electromagnetic brain signals.*
Noninvasive Mathematics 2021, Genoa, Italy (remote)

Mar. 2021   *Multi-penalty ridge regression for voxelwise encoding models.*
ENS seminar, Lyon, France (remote)

Mar. 2021   *Voxelwise encoding models.*
Cognitive Neuroscience Colloquium, Berkeley, United States (remote)

Aug. 2019   *Non-linear models for neurophysiological time-series.*
GRETSI 2019, Lille, France (remote)

Nov. 2018   *Scikit-learn Transformers, v0.20 and beyond.*
PyParis 2018, Paris, France

Jun. 2018   *Nearest neighbors in scikit-learn estimators, API challenges.*
PyData meetup, Paris, France

Sep. 2017   *Non-linear autoregressive models for cross-frequency coupling in neural time-series.*
C3S 2017, Cologne, Germany

Jun. 2016   *Training with open-source.*
PyData Paris 2016, Paris, France