Tom Dupré la Tour

Machine-learning/Neuroscience researcher

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Google Scholar

Current position

2019 – present (3.5 years) **Postdoc researcher**, *UC Berkeley*, Berkeley, CA, USA

- Advisor: Jack Gallant
- Deep-learning-based brain encoding models in vision and natural language
- Efficient hyper-parameter search on GPU for large multi-target linear models
- Taxonomy of V4 neurons modeled with a custom deep-learning model architecture
- Quantification of individual differences in encoding models using optimal transport

Education

2015 – 2018 **Ph.D in applied mathematics**, *Télécom Paris*, Paris, France

- Advisors: Alexandre Gramfort and Yves Grenier
- Thesis: "Non-linear models for neurophysiological time-series"
- Developed non-linear autoregressive models to estimate cross-frequency couplings
- Developed convolutional sparse coding models for magneto-encephalography signals
- *Best paper award - 1st prize (Université Paris-Saclay)*
- *Ph.D thesis award - 1st prize (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 – dissertation reviewer)*

2013 – 2015 **M.Sc in EECS**, *ÉPFL*, Lausanne, Switzerland

2010 – 2013 **B.Sc in EECS**, *École polytechnique (X)*, Palaiseau, France

2008 – 2010 **Preparatory school**, *Lycée Saint Louis*, Paris, France

Experience

2015 – present (8 years) **Open-source developer**, *Scikit-learn*

- Development of scikit-learn, the most popular machine learning library in Python
- Solver implementation, API design, library maintenance, code reviews
- *"Fastest promotion ever to the core developer team." (Gaël Varoquaux)*

2016 – 2017 (1 year) **Teaching assistant**, *Télécom Paris*, Paris, France

- Practical data science, linear time-series, advisor for a year-long team project

2014 – 2014 (6 months) **Research intern**, *DxO Labs*, Boulogne-Billancourt, France

- Research on blind deconvolution for motion deblurring in computer vision
- *Dissertation highlighted as an exemplary dissertation by Pierre Vandergheynst (ÉPFL)*

2013 – 2013 (3 months) **Research intern**, *Institut d'Électronique Fondamentale*, Orsay, France

- Research on a calculus paradigm using stochastic binary signals
- *Summa cum laude (top 10% dissertation) (École polytechnique)*

Expertise

(9 years) **Software development:** Python, Cython, Git, LateX, (Matlab), (Javascript)

Data science: machine learning, signal processing, numerical optimization, data analysis, data visualization, neuroimaging, mathematics

Skills: analysis, formalization, abstraction, fast learning, critical thinking, attention to details, clarity of thoughts, writing, automony, mentoring