

GUILLAUME OBOZINSKI

**Ecole des Ponts - ParisTech - Equipe Imagine
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Education

- 2003–2009** **PhD in Statistics, University of California at Berkeley, CA, USA.**
Dissertation: “ Simultaneous Variable Selection and Simultaneous Subspace Selection for Multitask Learning ”
Advisor: *Prof. Michael Jordan*
- 2002–2003** **Graduate program, Mathematical Sciences, Johns Hopkins University, MD, USA.**
- 2001–2002** **Ecole Normale Supérieure de Cachan, France.**
M.S. in Applied Mathematics (Machine Learning and Computer Vision)
- 1999–2001** **Ecole Normale Supérieure de Cachan, France.**
B.S. in Mathematics (emphasis in Probability and Statistics) and Computer Science

Professional Experience

- 01/2013 - Now** **Ecole des Ponts ParisTech, CS dpt., Imagine team. RESEARCHER.**
- 09/2010-12/2012** **INRIA - Sierra project. RESEARCHER.**
- 02/2009-08/2010** **INRIA - Willow project. POSTDOCTORAL RESEARCHER.**
- 2004**
(2 months) **Intel, Architecture Research Lab., Santa-Clara, CA. INTERNSHIP.**
Project: Parallel algorithm for structure learning of directed acyclic graphical models
- 2002**
(3 months) **Laboratoire de Neurosciences Cognitives et Imagerie Cérébrale,
CNRS UPR-640, Hôpital de la Salpêtrière, Paris, France. INTERNSHIP.**
Automatic segmentation and analysis of MEG images *with Prof. Sylvain Baillet.*
- 2000 & 2001**
(5 months total) **Computer Vision Lab., Caltech, Pasadena, CA. UNDERGRADUATE RESEARCH FELLOW.**
Unsupervised learning for handwritten signature recognition *with Prof. Pietro Perona.*

Awards

Evelyn Fix Memorial Medal, “*awarded to PhD student showing the greatest promise in statistical research, with preference for applications to biology and problems of health*”, University of California at Berkeley, 2009, for research on predictions of the molecular function of proteins.

Teaching: courses

- Since 2016** **In charge of the program in statistics and machine learning in the master**,
Specialised Master program *Décision et Systèmes d'Information Géolocalisée (DéSIGéo)*,
ENPC, ENSG, CNAM.
- Since 2014** **Machine learning**, Master 1 level, Ecole des Ponts (co-teaching).
- Since 2013** **Information processing and Computer Vision**, Master 1, Ecole des Ponts (co-teaching).
- Since 2010** **Probabilistic Graphical Models**, Master 2 level, Master MVA (Mathématiques/Vision/
Apprentissage) at Ecole Normale Supérieure de Cachan (co-teaching).
- 2011–2013** **Introduction to machine learning**, sophomore level, Ecole Normale Supérieure de Paris
(co-teaching).

Teaching: tutorials, summer schools and short courses

- 2014**
(18h) **Statistical Learning**,
Intensive course of the PhD programs SOCN and CIL, Louvain-la-Neuve, Belgium.
- 2012**
(7.5h) **Probabilistic graphical models for Information Retrieval**,
Russian Summer School in Information Retrieval (RuSSIR 2012), Yaroslavl, Russia.
- 2010-2012**
(3×3h) **Introduction to Graphical Models**,
Master 1 level, Ecole des Mines de Paris, ParisTech.
- 2011**
(10h) **Lasso and Sparse convex methods**,
Summer school on Sparsity and Model Selection, Centro de Matematica Montevideo Uruguay,
Montevideo, Uruguay.
- Sept. 2010**
(1.5h) **Tutorial “ Sparse methods for machine learning: Theory and algorithms ”**, Euro-
pean Conference on Machine Learning, Barcelona.
- 2010**
(3h) **ℓ_1 -regularization and other convex sparse methods**,
Summer School on Sparsity in Image and Signal Analysis at Hólar, Iceland.

5 Main Publications

- **Support Union Recovery in High-Dimensional Multivariate Regression**, G. Obozinski, M.J. Wainwright, M.I. Jordan, *Annals of Statistics*, 39 (1), p.1-47, 2011.
- **Genomic Privacy: Limits of Individual Detection in a pool**, S. Sankararaman¹, G. Obozinski¹, M.I. Jordan, E. Halperin, *Nature Genetics*, 41:965-967, 2009.
- **Joint Covariate Selection and Joint Subspace Selection for Multiple Classification Problems**, G. Obozinski, B. Taskar, M.I. Jordan, *Statistics and Computing*, 20(2): 231-252, 2010.
- **Group Lasso with overlap and graph Lasso**, L. Jacob, G. Obozinski, J.-P. Vert, *International Conference in Machine Learning*, 2009.
- **Optimization with sparsity-inducing penalties**, F. Bach, R. Jenatton, J Mairal, G. Obozinski *Foundations and Trends in Machine Learning*, 2012.

Selected Talks

- 06/2006** Multitask Feature Selection,
workshop Structural Knowledge Transfer for Machine Learning, ICML2006, Pittsburg, PA.
- 01/2009** Support union recovery in high-dimensional multivariate regression,
Machine Learning seminar, University of Pennsylvania, Philadelphia, PA.
- 02/2010** From sparsity to structured sparsity,
Statistics laboratory, University of Cambridge, UK.
- 06/2010** Structured Sparse Principal Component Analysis,
Sustain workshop on sparse structures, University of Bristol, UK.
- 12/2010** Structured regularization and MKL,
NIPS workshop: "New Directions in Multiple Kernel Learning", Whistler, BC, Canada.
- 01/2011** Structured Sparse Coding: Efficient algorithms and applications,
BIRS workshop "Sparse Statistics, Optimization and Machine Learning", Banff, Alberta, Canada.
- 06/2011** Convex relaxation for Combinatorial Penalties,
Mini-Workshop: "Mathematics of Machine Learning", Oberwolfach, Germany.
- 07/2012** Convex relaxation for Combinatorial Penalties,
World Congres in Probability and Statistics, Istanbul, Turkey.
- 04/2013** Relational learning with many relations,
Oxford Robotics Research Seminar, Oxford, UK.
- 07/2015** Tight convex relaxations for sparse matrix factorization,
Joint conference of the Institute of Mathematical Statistics and the Australian Statistical Society, Sydney, Australia.

¹The two first authors contributed equally to this work

Professional Activities

Area chair	AISTATS 2012-2013, NIPS 2013-2014, 2016, ICML 2015
Journal Review	Annals of Statistics (AOS), Journal of Machine Learning Research (JMLR), Journal of the Royal Statistical Society (JRSS), Electronic Journal of Statistics (EJS), IEEE Transaction on Signal Processing (TSP), IEEE Transactions on Information theory, IEEE Transactions on Pattern Analysis and Machine Intelligence (TPAMI), Machine Learning, Statistics and Computing (STCO), Artificial Intelligence , Journal of Computational and Graphical Statistics (JCGS), IEEE/ACM Transactions in Computational Biology and Bioinformatics (TCBB).
Conf. Reviews	International Conference on Neural Information Processing Systems (NIPS), International Conference on Machine Learning (ICML), European Conference on Machine Learning (ECML), International Conference on Artificial Intelligence and Statistics (AI-Stats), Conference on Uncertainty in Artificial Intelligence (UAI), Conference on Learning Theory (COLT).
Workshop/colloq. organisation	ICML 2011 workshop "Structured Sparsity: Learning and Inference Workshop", 2/7/2011, Bellevue, Washington, USA. NIPS 2011 workshop "Sparse Representation and Low-rank approximation", 16/12/2011, Sierra Nevada, Spain. ICML 2012 workshop "Sparsity, Dictionaries and Projections in Machine Learning and Signal Processing", 30/06/2012, Edinburgh, UK. Workshop "Statistical Learning Methods for Computer Experiments", 28/05/2014, Université Paris Descartes, Paris, France. Journée "Data Science and Massive Data Analysis", 12/06/2014, Labex Bézout, Champs- sur-Marne, France. Colloque "Perspectives and New Challenges in Data Sciences", 03/02/2016, Ecole des Ponts ParisTech, Champs-sur-Marne, France. Optimization workshop of the DALI meeting, 01/4/2016, Sestri Levante, Italy.
PhD Examiner	Rodolphe Jenatton , "Structured Sparsity-Inducing Norms: Statistical and Algorithmic Properties with Applications to Neuroimaging", 24 novembre 2011. Pierre-André Savalle , "Interactions entre Rang et Parcimonie en Estimation Pénalisée", 21 octobre 2014. Alix Lheritier , "Non-parametric Methods for Learning and Detecting Multivariate Statis- tical Dissimilarity", 23 novembre 2015.

Languages

French	Native speaker
English	Fluent
German	Intermediate
Programming	Matlab (experienced), Caml, C, C++, Unix shell