

PROFESSIONAL  
CONTACT  
INFORMATION

**Position:** Postdoc. Research Fellow sponsored by [Fond. Math. Jacques Hadamard](#) under contract with the [École Polytechnique](#),  
**Institution:** [Centre de Recherche en Économie et Statistique \(CREST\)](#):  
 a research center of [ENSAE ParisTech](#) & [École Polytechnique](#).  
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 ENSAE  
 Campus de l'École Polytechnique  
 5, Avenue Henri le Chatelier  
 91120, Palaiseau, France  
 Nationality: Brazilian & British  
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## CONTACT

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 Paris, 75013, France  
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RESEARCH  
INTERESTS

- *High-dimensional inference and statistical learning*: statistical analysis, connections to sparse optimization, statistical-computational trade-offs, robust statistics.
- *Provable efficient algorithms for large-dimensional stochastic optimization problems*: stochastic approximation, randomization, variance-reduction, robustness.
- *Probabilistic/statistical analysis*: concentration inequalities and empirical processes, computationally efficient model selection and their oracle inequalities.
- *Specific models from economics, finance and machine learning*.

Side interests include some aspects of multi-agent optimization: distributed optimization, on-line learning and computational game theory.

## EDUCATION

**Instituto Nacional de Matemática Pura e Aplicada, Rio de Janeiro, RJ, Brazil**  
 ([UMI 2924-CNRS](#))

PhD in Mathematics (Optimization), (2011-2015).  
 (Qualifying exams: Optimization and Probability)

- Thesis: *Algorithms for stochastic variational inequalities: convergence and complexity analysis*.
- Advisors: Alfredo Iusem (IMPA) and Alejandro Jofré (CMM-DIM, Uni. de Chile).
- With 1 year visit at the Center for Mathematical Modeling (CMM) - Universidad de Chile ([UMI 2807-CNRS](#)).

**Instituto Nacional de Matemática Pura e Aplicada, Rio de Janeiro, RJ, Brazil**

M.Sc. in Mathematics (2008-2010)

- Advisor: Marcelo Viana

**Instituto Tecnológico de Aeronáutica, São José dos Campos, SP, Brazil**

B.S. in Electronic Engineering (2002-2007),

With 1 year research visit at the [German Aerospace Center \(DLR\)](#), Microwaves and Radar Institute. Advisor: Dr. Rolf Scheiber (DLR).

Undergraduate thesis: *Target separation in SAR image with the MUSIC algorithm*.

(GPA: 84%, Class position: 5th out of 23 students.)  
(Exam admission rate: 1.58%, 131 out of 8287.)

PUBLICATIONS  
SUBMITTED OR  
ACCEPTED

*Restricted eigenvalue property for corrupted Gaussian designs*, submitted (with A. Dalalyan).

*Sample average approximation with heavier tails II: localization in stochastic convex optimization and persistence results for the Lasso*, under major revision, 2nd round, *Mathematical Programming* (with R.I. Oliveira).

*Sample average approximation with heavier tails I: non-asymptotic bounds with weak assumptions and stochastic constraints*, under major revision, 2nd round, *Mathematical Programming* (with R.I. Oliveira).

*Variance-based extragradient method with line search for stochastic variational inequalities*, under major revision, 2nd round, *SIAM Journal on Optimization* (with A. Iusem, A. Jofré and R.I. Oliveira).

*Incremental constraint projection methods for monotone stochastic variational inequalities*, *Mathematics of Operations Research*, [DOI](#) (with A. Iusem, A. Jofré).

*On variance reduction for stochastic smooth convex optimization with multiplicative noise*, *Mathematical Programming*, [DOI](#) (with A. Jofré).

*Extragradient method with variance reduction for stochastic variational inequalities*, *SIAM Journal on Optimization*, [DOI](#) (with A. Iusem, A. Jofré and R.I. Oliveira).

*Algorithms for stochastic variational inequalities: convergence and complexity analysis*, PhD Thesis, IMPA, Dec. 2015.

*Estimador MUSIC: resolvendo um problema de Probabilidade com Álgebra Linear*, *Matemática Universitária*.

*Target separation in SAR image with the MUSIC algorithm*, *Proceedings of the IEEE International Geoscience and Remote Sensing Symposium* (with M. Nannini and R. Sheiber).

JOURNAL REVIEWS

*Journal of the Royal Statistical Society - Series B*, *Mathematical Programming*, *Computational Optimization and Applications*, *Journal of Optimization Theory and Applications*, *Set-valued and Variational Analysis*, *Optimization Methods & Software*

HONORS AND  
GRANTS

- 2019 Travel grant from ICERM-Brown University: Workshop on Optimization Methods for Computer Vision and Image Processing 2019, Providence, USA.
- 2018 Travel grant from CREST: International Congress of Mathematicians (ICM) 2018 and XXII Brazilian School of Probability (EBP), Rio de Janeiro, Brazil.
- 2018 Travel grant from CREST: International Symposium on Mathematical Programming (ISMP) 2018, Bordeaux, France.
- 2017 Fondation Mathématique Jacques Hadamard Postdoctoral Fellowship laureation.
- 2017 Travel grant from CRM-IMPA: 1st CRM-IMPA Joint Workshop (Satellite Meeting of the Mathematical Congress of the Americas), Centre de Recherches Mathématiques, Montréal, Canada.
- 2017 Travel grant from CMM: SIAM Conference on Optimization, Vancouver, Canada.
- 2017 Travel grant from SAMSI: SAMSI Workshop on the Interface between Statistics and Optimization (WISO), Duke University, Durham, USA.
- 2017 Research visiting grant from IMPA: February, IMPA, Rio de Janeiro, Brazil.
- 2016 Research visiting grant from IMPA: May-June, IMPA, Rio de Janeiro, Brazil.
- 2016 Travel grant from IMPA: Workshop on Analysis and Applications of Stochastic Systems, Rio de Janeiro, Brazil.
- 2016 Research visiting grant from IMPA: Jan-Feb, IMPA, Rio de Janeiro, Brazil.
- 2016 Travel grant from IPAM-UCLA: IPAM-UCLA Workshop on Optimization and Equilibrium in Energy Economics, Los Angeles, USA.
- 2014 Travel grant from CIME-EMS: CIME-EMS Summer School on Centralized and Distributed Multi-agent Optimization, Cetraro, Italy, Centro Internazionale Matematico Estivo/European Mathematical Society.
- 2010 Warwick Postgraduate Research Scholarship (*respectfully declined*), University of Warwick - UK.
- 2010 CAPES-Fulbright PhD scholarship (*respectfully declined*).
- 2008 Travel grant from CNPq: Second Symposium in Scattering and Spectral Theory, Serrambi, Brazil.
- 2007 Honors Mention in Mathematics (ITA).
- 2006 Research scholarship (for the best 3 students of ITA's Electronic Engineer class of 2006), German Aerospace Center (DLR), Munich, Germany.

PRESENTATIONS

*11th International Conference of the ERCIM WG on Computational and Methodological Statistics (CMStatistics)* ([by invitation](#)) - Pisa - Italy (December 2018). Organizers: Guillaume Lecué, Matthieu Lerasle, Adrien Saumard - [Forthcoming](#).

*PGMO Days - Paris, Saclay - France* (November 2018) - [Forthcoming](#).

*International Workshop Machine Learning and AI - Télécom ParisTech* - Paris - France (September 2018).

*XXII Brazilian School of Probability (EBP)* - Rio de Janeiro - Brazil (July 2018).

*International Symposium on Mathematical Programming (ISMP)* ([by invitation](#)) - Bourdeaux - France (July 2018). Chair: Jorge Nocedal (Northwestern). Some co-speakers: Léon Bottou, Frank Curtis, Jorge Nocedal, Uday Shanbhag, R. Bollapragada.

*CREST-CMAP ENSAE-École Polytechnique Statistics Seminar* ([by invitation](#)) - Paris, Saclay - France (December 2017). Organizers: Alexandre Tsybakov, Cristina Butucea, Éric Moulines and Mathieu Rosenbaum.

*PGMO Days - Paris, Saclay - France* (November 2017).

31<sup>0</sup> *Colóquio Brasileiro de Matemática* ([by invitation](#)) - Rio de Janeiro - Brazil (July/August 2017).

*SIAM Conference on Optimization - Vancouver - Canada* (May 2017).

*Optimization and Equilibrium, Two-days Workshop* ([by invitation](#)) - Concepción - Chile (April 2017).

*Workshop on Variational and Stochastic Analysis* ([by invitation](#)) - Santiago - Chile (March 2017).

*Workshop on the Interface of Statistics and Optimization (WISO)* - Durham - USA (February 2017), Poster.

*XX Brazilian School of Probability* - São Carlos - Brazil (July, 2016).

*International Conference on Stochastic Programming (ICSP)* - Búzios - Brazil (June, 2016).

*Workshop on Analysis and Applications of Stochastic Systems* ([by invitation](#)) - Rio de Janeiro - Brazil (March, 2016).

*Universidade Federal de São Paulo: Applied Mathematics Seminar* - São José dos Campos - Brazil (November 2015).

*Center for Mathematical Modelling: Optimization Seminar* - Santiago - Chile (September 2015).

*University of Southampton: CORMSIS Seminar* - Southampton - UK (July 2015).

*International Symposium on Mathematical Programming (ISMP)* - Pittsburgh - USA (July 2015).

*Instituto Nacional de Matemática Pura e Aplicada (IMPA): Optimization Seminar* - Rio de Janeiro - Brazil (April 2015).

*Instituto Nacional de Matemática Pura e Aplicada (IMPA): Optimization Seminar* - Rio de Janeiro - Brazil (September 2014)

*IEEE International Geoscience and Remote Sensing Symposium* - Barcelona - Spain (July, 2007).

PARTICIPATION IN  
WORKSHOPS AND  
CONFERENCES

*German Aerospace Center (DLR), Institut für Hochfrequenztechnik und Radarsysteme* - Oberpfaffenhofen - Germany (December, 2006).

*ICERM Workshop on Optimization Methods in Computer Vision and Image Processing* - Providence - USA (April & May 2019) - **Forthcoming**.

*11th International Conference of the ERCIM WG on Computational and Methodological Statistics (CMStatistics)* - Pisa - Italy (December 2018) - **Forthcoming**.

Meeting in Mathematical Statistics 2018 - Frejus - France (December 2018) - **Forthcoming**.

Horizon Math: Intelligence Artificielle - Paris - France (November 2018) - **Forthcoming**.

*9ème Séminaire Itzykson* “Computational and information-theoretic phase transitions in large-scale inference problems” by L. Massoulié (MSR-INRIA), L. Zdeborova (IPhT CEA) and A. Montanari (Stanford) - Paris - France (November 2018) - **Forthcoming**.

*Journée AFIA-SFdS @ IHP* - Paris - France (September 2018).

*International Workshop Machine Learning and AI - Telecom ParisTech* - Paris - France (September 2018).

*International Congress of Mathematicians (ICM)* - Rio de Janeiro - Brazil (August 2018).

*XXII Brazilian School of Probability (EBP)* - Rio de Janeiro - Brazil (July 2018).

*International Symposium on Mathematical Programming (ISMP)* - Bourdeaux - France (July 2018).

*CRITEO Machine Learning in the Real World* - Paris - France (June 2018).

*LPSM Kick-off conference* - Paris - France - (June 2018).

*Workshop on Statistical Inference in Energy Markets* - Institut Henri Poincaré, Paris - France (May 2018).

*Statistics/Learning at Paris-Saclay (3rd Edition)* at IHES, Bures-sur-Yvette, France (January 2018).

*PGMO Days*, Paris-Saclay, France (November 2017).

*Journée francilienne d'accueil des Post-Doctorants* at IHES, Bures-sur-Yvette, France (October 2017).

*XXI Brazilian School of Probability*, Rio de Janeiro, Brazil (July/August 2017).

31<sup>o</sup> *Colóquio Brasileiro de Matemática*, Rio de Janeiro, Brazil (July/August 2017).

*1st CRM-IMPA Joint Workshop: Challenges at the interface of optimization and stochastic processes (Satellite Meeting of the Mathematical Congress of the Americas)*, Montréal, Canada (July 2017).

*Organizers:* Louigi Addario-Berry (McGill), Roberto I. Oliveira (IMPA), Prasad Tetali (Georgia Tech). *Speakers:* Emmanuel Abbe (Princeton), Alessandro Arlotto (Duke), Gérard Ben Arous (New York), Wei-Kuo Chen (Minnesota), Ronen Eldan (Weizmann Institute), Dmitry Panchenko (MIT), Gabor Pete (Budapest), Kavita Ramanan (Brown), Subhabrata Sen (Stanford), Nike Sub (Berkeley), Konstantin Tikhomirov (Princeton), Nicole

Tomczak-Jaegermann (Alberta), Lenka Zdeborova (Paris-Saclay).

*SIAM Conference on Optimization*, Vancouver, Canada (May 2017).

*Optimization and Equilibrium, Two-days Workshop*, Concepción, Chile (April 2017).

*Workshop on Variational and Stochastic Analysis*, Santiago, Chile (March 2017).

*Speakers include:* Boris Mordukhovich (Detroit University), Jiri Outrata (Charles University, Prague), Terry Rockafellar (University of Washington), Teemu Pennanen (King's College), Dylan Possamai (Paris-Dauphine), Miguel Olin Baron (Paris-Dauphine), Thibaut Mastrolia (École Polytechnique), Philip Thompson (CMM-Chile).

*SAMSI Workshop on the Interface of Statistics and Optimization (WISO)*, Duke University, Durham, USA (February 2017).

*Speakers include:* Yonina Eldar (Technion), Jianqing Fan (Princeton), Michael Jordan (Berkeley), Arkadi Nemirovski (Georgia Tech), Alex Shapiro (Georgia Tech), Bernd Sturmfels (Berkeley), Martin Wainwright (Berkeley), Margaret Wright (Courant), Stephen Wright (Wisconsin-Madison).

*School and Workshop Equilibria in Games: existence, selection and dynamics*, Center for Mathematical Modeling, Uni. Chile, Santiago, Chile (January 2017).

*Speakers:* S. Govindan (Rochester), J. Hillas (Auckland), A. Jofré (CMM, UChile), R. Laraki (Paris-Dauphine), A. Mc Lennan (Queensland), S. Sorin (Pierre et Marie Curie), T. Tomala (HEC Paris), A. Vermeulen (Maastricht), Y. Viossat (Paris-Dauphine), B. von Stengel (London School of Economics), Terry Rockafellar (University of Washington).

*XVIII CLAIO: Latin-Iberoamerican Conference on Operations Research*, PUC, Santiago, Chile (October, 2016).

*XX Brazilian School of Probability*, ICMC-USP, São Carlos, Brazil (July, 2016).

*International Conference on Stochastic Programming (ICSP)*, Búzios, Brazil (June, 2016).

*Workshop on Analysis and Applications of Stochastic Systems*, IMPA, Rio de Janeiro, Brazil (March, 2016).

*Coloquio Optimización A mediodía de Optimización y análisis variacional*, Center for Mathematical Modeling, Santiago, Chile (March, 2016).

*Speakers:* D. Bertsekas (MIT), A. Dontchev (Mathematical Reviews and Univ. of Michigan) and R.T. Rockafellar (Uni. of Washington).

*Workshop on Optimization and Equilibrium in Energy Economics (IPAM-UCLA)*, Institute of Pure and Applied Mathematics, Los Angeles, USA (January, 2016).

*International Symposium on Mathematical Programming (ISMP)*, Pittsburgh, USA (July, 2015).

*High Dimensional Phenomena in Probability, Statistics and Signal Processing*, IMPA, Rio de Janeiro, Brazil.

*Speakers:* Afonso Bandeira (Princeton), Alex Belloni (Duke), Roberto I. Oliveira (IMPA), Holger Rauhut (Aachen), Emile Richard (Stanford) and Joel Tropp (Caltech) (November, 2014).

*Optimization meets General Equilibrium theory, dynamic contract and finance*, CMM, Santiago, Chile (December, 2014).

*Centralized and Distributed Multi-agent Optimization: Models and Algorithms*, Centro Internazionale Matematico Estivo/European Mathematical Society Summer School, Cetraro, Italy (July 2014).

*Organizers*: Francisco Facchinei and J-S. Pang.

*International Symposium in Generalized Convexity and Monotonicity*, IMPA, Rio de Janeiro, Brazil (August, 2014).

*2nd International Conference on Variational Analysis and Optimization*, CMM, Santiago, Chile (January, 2014).

*XI International Seminar on Optimization and Related Areas*, Lima, Peru (October, 2013).

*IX Brazilian Workshop on Continuous Optimization*, Luiz Correa, Brazil (July-August, 2012).

*International Symposium on Mathematical Programming*, Berlin, Germany (August, 2012).

*International Conference on Frontiers of Mathematics*, Rio de Janeiro, Brazil (April, 2012).

*27o Colóquio Brasileiro de Matemática*, Rio de Janeiro, Brazil (Julho, 2009).

*Conferência em Homenagem ao Prof. Elon Lima em ocasião aos seus 80 anos*, Rio de Janeiro, Brazil (September, 2009).

*Encontro Matemática Brasil-França*, Rio de Janeiro, Brazil (September, 2009).

*Second Symposium on Scattering and Spectral Theory*, Recife, Brazil (August, 2008).

*AMS - SBM First Joint Meeting*, Rio de Janeiro, Brazil (June, 2008).

*26o Colóquio Brasileiro de Matemática*, Rio de Janeiro, Brazil (August, 2007).

*IEEE International Geoscience and Remote Sensing Symposium*, Barcelona, Spain (July, 2007).

COMPLEMENTARY  
EDUCATION

Mini-course: *Introduction to Asymptotic Geometric Analysis*, Lecturer: C. Hugo Jimenez, IMPA, (2015).

*Centralized and Distributed Multi-agent Optimization: Models and Algorithms*, CIME-EMS Summer School in applied mathematics. (Credit hours: 50h). Centro Internazionale Matematico Estivo & European Mathematical Society.

Lectures: Zhi-Quan Luo (Minnesota): *Optimization Methods for Resource Management: Complexity, Duality and Approximation*, Angelia Nedic (Illinois): *Distributed Optimization over Networks*, Jong-Shi Pang (Southern California): *Differential Variational Inequalities*, Gesualdo Scutari (New York): *Advanced Decomposition Algorithms for Multi-agent Systems*.

Mini-course: *Randomness, Matrices and High Dimensional Problems*, Lecturers: Afonso Bandeira (Princeton) & Roberto Oliveira (IMPA), 10th Regional Meeting on Probability and Mathematical Statistics, IMPA, Brazil, (2014).

Mini-course: *High-dimensional estimation: Econometric models*, Lecturer: Alexandre Belloni (Duke), 10th Regional Meeting on Probability and Mathematical Statistics, IMPA, Brazil, (2014).

Mini-course: *Concentration inequalities with applications*, Lecturer: Gábor Lugosi (Pompeu Fabra), 10th Regional Meeting on Probability and Mathematical Statistics, IMPA, Brazil, (2014).

Reading course: *Topics in Stochastic Variational Analysis*, IMPA, (2014).

TEACHING &  
PROFESSIONAL  
EXPERIENCE

Center for Mathematical Modeling (CMM) - Universidad de Chile ([UMI 2807-CNRS](#)), Santiago, Chile. Position: Post-doctoral Research Fellow (03.01.2016 - 30.09.2017).

IMPA, Rio de Janeiro, Brazil. Position: Visiting Researcher (01.02.2017-28.02.2017).

IMPA - Rio de Janeiro, Brazil. Position: Visiting Researcher (01.05.2016 - 30.06.2016).

IMPA - Rio de Janeiro, Brazil. Position: Visiting Researcher (04.01.2016 - 29.02.2016).

CMM - Universidad de Chile, Santiago, Chile. Position: research visit (08.06.2015 - 10.31.2015).

CMM - Universidad de Chile, Santiago, Chile. Position: research visit (11.17.2014 - 01.17.2015).

CMM - Universidad de Chile, Santiago, Chile. Position: research visit (05.03.2013 - 01.06.2014).

CMM - Universidad de Chile, Santiago, Chile. Position: research visit (11.09.2013 - 01.09.2014).

IMPA - Rio de Janeiro, Brazil. Position: Teaching Assistant in doctoral programme, course: *Computational Methods in Optimization*, 2013.

IMPA - Rio de Janeiro, Brazil. Position: Teaching Assistant in masters program in mathematical finance, course: *Statistical Methods*, 2013.

EARJ - American School of Rio de Janeiro, Rio de Janeiro, Brazil. Position: Substitute Teacher on *Calculus and Statistics* for the American and International Baccalaureate (IB) diplomas (classes given in English language), 2013.

IMPA - Rio de Janeiro, Brazil. Position: Teaching assistant, masters program, course: *Real Analysis*, 2010.

Orbisat da Amazonia Ind e Aerolevanteamento SA - São José dos Campos, Brazil. Position: Electronic engineering/programmer, 2007.

German Aerospace Center (DLR), Microwave and Radar Institute - Munich, Germany. Position: Research assistant for 1 year during the preparation of my final under-graduation dissertation (see article "Target separation in SAR image with the MUSIC algorithm" in Publications).

COC Vestibulares - São José dos Campos, Brazil. Position: High school mathematics teacher, 2004-2006.

CASD Vestibulares - São José dos Campos, Brazil. Position: High school mathematics teacher for local community (organized by students of ITA), 2004-2005.

Estruturação Vestibulares - São José dos Campos, Brazil. Position: High school mathematics teacher, 2004-2005.

LANGUAGE SKILLS

Portuguese (native language), English (advanced level), Spanish (professional level), French (A2/B1).