FLORENCIA G. LEONARDI

Instituto de Matemática e Estatística
Universidade de São Paulo
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PERSONAL DATA

Born August 29, 1978.
Married, 3 children.

EDUCATION

2003–2007	Ph.D. in Bioinformatics, Universidade de São Paulo (Brazil). Advisors: Antonio Galves and Hugo A. Armelin.
1998–2002	Bachelor in Mathematics, Facultad de Ciencias Exactas y Naturales, Universidad Nacional de Mar del Plata (Argentina).

POSITIONS

2017–Present	Associate Professor, at Instituto de Matemática e Estatística, Universidade de São Paulo (Brazil).
2014–2016	Scientific guest, ETH Zurich (Switzerland).
2008–2017	Adjoint Professor, at Instituto de Matemática e Estatística, Universidade de São Paulo (Brazil).
2007–2008	Post-doctoral fellow, Instituto de Matemática e Estatística, Universidade de São Paulo (Brazil).
2004–2006	Teaching assistant of undergraduate courses in Statistics, Departamento de Estatística, Instituto de Matemática e Estatística, Universidade de São Paulo (Brazil).

OTHER PROFESSIONAL ACTIVITIES

2022–present	Associate Editor of Ensaios Matemáticos.
2022–present	Associate Editor of Brazilian Journal of Probability and Statistics.
2019–Present	Associate Editor of the Latin American Journal of Probability and Statistics - ALEA.
2020–2022	Associate Editor of Journal of Applied Probability and Advances in Applied Probability.
2019–2021	Chair of the Latin American Regional Committee of the Bernoulli Society.

FELLOWSHIPS AND AWARDS

2021–present	Research fellowship, level 1D, Conselho Nacional de Desenvolvimento Científico e Tecnológico (CNPq), Brazil.
2020	Elected member of the International Statistical Institute (ISI).
2020	Johannes Kepler Prize, Sociedade Brasileira de Matemática Aplicada e Computacional (SBMAC), for the work "Context tree selection and linguistic rhythm retrieval for written texts", published in 2012 in Annals of Applied Statistics and written in collaboration with A. Galves, C. Galves, J. Garcia and N. Garcia.
2010–2020	Research fellowship, level 2, Conselho Nacional de Desenvolvimento Científico e Tecnológico (CNPq), Brazil.
2014–2016	Research fellowship, Fundação de Amparo à Pesquisa do Estado de São Paulo (FAPESP), Brazil.
2013	L'Oréal award "For Women In Science", Brazil.
2007–2008	Post-doctoral fellowship, Fundação de Amparo à Pesquisa do Estado de São Paulo (FAPESP), Brazil.
2003–2007	PhD grant, Coordenação de Aperfeiçoamento de Pessoal de Nível Superior (CAPES), Brazil.
08-12/2002	Research fellowship, Facultad de Ciencias Exactas y Naturales, Universidad Nacional de Mar del Plata, Argentina.
2002	Laurate student, Universidad Nacional de Mar del Plata, Argentina.
2001–2002	Graduate fellowship, FOMEC 303-Universidad Nacional de Mar del Plata, Argentina.

PUBLICATIONS

2023	with R. Carvalho and I. Frondana. *Structure recovery for partially observed discrete Markov random fields on graphs under not necessarily positive distributions*, Scandinavian Journal of Statistics, *(accepted)*.
2023	with L. Prates, R. Lemes and T. Hünemeier. *Population-based change-point detection for the identification of homozygosity islands*, Bioinformatics, 39, pp. 1–8.
2021	with M. Lopez-Rosenfeld, D. Rodriguez, M. Severino and M. Sued. *Independent block identification in multivariate time series*, Journal of Time Series Analysis, 42(1), pp. 19–33.
2020	with A. Cerqueira. *Estimation of the Number of Communities in the Stochastic Block Model*, IEEE Transactions on Information Theory, 60(10), pp. 6403–6412.
2020	with A. Cerqueira and A. Garivier. A note on perfect simulation for exponential random graph models. *ESAIM Probability and Statistics*, ESAIM P & S, vol. 24, pp. 138–147.
2018	with B. M. de Castro, R.B. Lemes, J. Cesar, and T. Hünemeier. A model selection approach for multiple sequence segmentation and dimensionality reduction. *Journal of Multivariate Analysis*, 167, pp. 319–330.

2017 with A. Cerqueira, D. Fraiman and Claudia D. Vargas. A test of hypotheses for random graph distributions built from EEG data. *IEEE Transactions on Network Science and Engineering*, **4**(2), pp. 75–82.

2016 with P. Bühlmann. Comments on: A random forest guided tour. *Test*, **25**(2), pp. 239–246.

2015 with S. Gallo. Nonparametric statistical inference for the context tree of a stationary ergodic process. *Electronic Journal of Statistics*, **9**(2), pp. 2076–2098.

2015 with I. Armendáriz, P.A. Ferrai and P. Groisman. Finite cycle Gibbs measures of permutations of $\mathbb{Z}^d$. *Journal of Statistical Physics*, **158**(6), pp. 1213–1233.

2014 with P. Collet. Loss of memory of hidden Markov models and Lyapunov exponents. *Annals of Applied Probability*, **24**(1), pp. 422-446.

2012 with A. Galves, C. Galves, J. Garcia and N.L. Garcia. Context tree selection and linguistic rhythm retrieval from written texts. *Annals of Applied Statistics*, **6**(1), pp. 186-209.

2011 with A. Garivier. Context tree selection: a unifying view. *Stochastic Processes and their Applications*, **121**(11), pp. 2488-2506.

2010 Some upper bounds for the rate of convergence of penalized likelihood context tree estimators. *Brazilian Journal of Probability and Statistics*, **24**, pp. 321-336.

2009 with J.R. Busch, P.A. Ferrari, A.G. Flesia, R. Fraiman and S. Grynberg. Testing statistical hypothesis on random trees and applications to the protein classification problem. *The annals of applied statistics*, **3**, pp. 542-563.

2008 with G. Flesia and R. Fraiman. Pattern recognition on random trees associated to protein functionality families In: 2 BIOMAT, 2008, La Falda. *Actas de la Academia Nacional de Ciencias de Córdoba*, Argentina, J. Tirao (Ed).

2008 with P. Collet and A. Galves. Random perturbations of stochastic processes with unbounded variable length memory. *Electronic Journal of Probability*, **13**, pp. 1345-1361.

2008 with A. Galves. Exponential inequalities for empirical unbounded context trees. In and Out of Equilibrium 2 (Sidoravicius, V.; Vares, M.E., Eds.), *Progress in Probability*, **60**, pp. 257-270.

2006 A generalization of the PST algorithm: modeling the sparse nature of protein sequences. *Bioinformatics*, **22**(11), pp. 1302-1307.

2006 with J. Barrera, R.M. Cesar Jr., D.C Martins Jr., E.F. Merino, R.Z.N Vêncio, M.M. Yamamoto, C.A.B. Pereira and H.A. del Portillo. Constructing probabilistic genetic networks of Plasmodium falciparum from dynamical expression signals of the intraerythrocytic development cycle. In: McConnell; Lin and Hurban. (Org.). *Methods of Microarray Data Analysis V*, chapter 2. Springer.

2005 with A. Galves. Sequence motif identification and protein family classification using probabilistic treest. In: Simpósio Brasileiro de Bioinformática, BSB 2005, São Leopoldo, RS, Brasil. *Lecture Notes in Computer Science*, 3594, pp. 190-193, Springer.

BOOKS

2021 with D. Hernández-Hernández, R.H. Mena and J.C. Pardo Millán (editors). *Advances in Probability and Mathematical Statistics. Conference proceedings of CLAPEM 2019, Mérida, Mexico*, Birkhäuser, Cham.

2021 with A. Galves and G. Ost. *Statistical model selection for stochastic systems with applications to Bioinformatics, Linguistics and Neurobiology*, Editora do IMPA.

INVITED CONFERENCES

2023 Community detection with maximum likelihood for the Stochastic Block Model. XXVI Escola Brasileira de Probabilidade, São Paulo, Brazil.

2020 Detecção de estruturas de dependência em processos estocásticos. VII Encontro Baiano de Estatística. Virtual conference.

2019 Aprendizagem estatística em alta dimensão. Invited organized session, 32 Colóquio Brasileiro de Matemática. Rio de Janeiro, Brazil.

2019 Theory and Practice in Machine Learning and Computer Vision Workshop. ICERM-Brown University, Providence, USA.

2018 Some new results on the model selection problem for the Stochastic Block Model. CIMPA School "Geometry and scaling of random structures". Buenos Aires, Argentina.

2016 Computationally efficient change point detection for high-dimensional regression. Brazilian Symposium in Probability and Statistics (SINAPE). Porto Alegre, Brazil.

2016 Neighborhood selection for discrete Markov random fields on graphs. XX Brazilian School of Probability. São Carlos, Brazil.

2012 Non-parametric inference for functionals of stochastic processes. IV Latin American Congress of Mathematicians. Córdoba, Argentina.

2012 The Smallest Maximizer Criterion for context tree selection. 3rd Indo-Brazilian Symposium in Mathematics. Rio de Janeiro, RJ, Brazil.

2012 A variable range Markov random field model to find SNPs dependence windows. Simpósio Nacional de Probabilidade e Estatística (SINAPE). João Pessoa, PB, Brazil.

2009 Context tree selection: a unifying view. XI CLAPEM, Latin American Congress of Probability and Mathematical Statistics. Naiguatá, Venezuela.

2009 Context tree selection and linguistic rhythm retrieval from written texts. 13th Brazilian School of Probability. São Sebastião, SP, Brazil.

2008 Random perturbations of stochastic chains with unbounded variable length memory. 5th ERPEM, Regional Meeting of Probability and Mathematical Statistics. Solís, Uruguay.

STUDENTS

Master

Leonardo Hanao Gabriel (present)
Nicholas Gialluca Domene (present)
Rodolfo Riani Sundfeld (present)
Rodrigo R. S. de Carvalho (2023)
Alberto R. Ferreira (2022)
Ana Gabriela F. da Silva (2022)
Lênon G. S. Alípio (2021)
Lucas de Oliveira Prates (2021)
Felipe Castro de Britto (2021)

Lucas Peinado Bruscato (2020)
Thales E.S. de Melo (2019)
Andressa Cerqueira (2014)
Bruno M. de Castro (2013)

Doctor
Luiza Tuler Veloso (present)
Tiago Pereira Marques (present)
Lucas de Oliveira Prates (present)
Anny K. G. Rodrigues (present)
Magno Tairone Severino de Freitas (present)
Cristel E. V. Tapia (co-advisor, 2022)
Andressa Cerqueira (2018)
Iara M. Frondana (2016)

Postdocs
Alex Rodrigo de Sousa (2019-2022)
Ricardo Felipe Ferreira (2019)

LANGUAGES

Spanish: native competence.
Portuguese: fluent.
English: fluent.
French: fluent.

São Paulo, October 2023