ANA ARRIBAS GIL
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Personal information	Contact information

Last name: Arribas Gil

First name: Ana

Date of birth: December 15th, 1979

Place of birth: Madrid, Spain

Nationality: Spanish

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Education

2003-2007 PhD in Statistics, Université Paris-Sud XI, France.
Title: "Estimation in hidden variable models. Application to the alignment of biological sequences". Advisor: Elisabeth Gassiat, (www.math.u-psud.fr/∼gassiat).

2002-2003 D.E.A., *Diplôme d'Études Avancées* (Master's degree) on Stochastic and Statistic Modelling, Université Paris-Sud XI, France.

1997-2001 B.S. in Mathematics, Universidad de Oviedo, Spain.

Research interests

- Statistical methods in computational biology: biological sequences alignment and comparison, hidden variable models, bioinformatics algorithms.

- Longitudinal and functional data analysis: robust estimation, mixed-effects models for repeated measures and time warping.

Academic positions held

2007- Assistant Professor (tenure track) in the Department of Statistics at Universidad Carlos III de Madrid (Spain).

2006-2007 Teaching Assistant (Senior) in the Department of Mathematics at Université Paris-Sud XI, France.

2003-2006 Teaching Assistant (Junior) in the Faculty of Pharmacy at Université Paris 5 (France).

Publications

- A. Arribas-Gil and J. Romo. Discussion of "Multivariate Functional Outlier Detection" by M. Hubert, P. Rousseeuw and P. Segaert, *Statistical Methods and Applications*, (DOI) 10.1007/s10260-015-0328-5, 2015.
- A. Arribas-Gil, R. de la Cruz, E. Lebarbier and C. Meza. Classification of longitudinal data through a semiparametric mixed-effects model based on lasso-type estimators, *Biometrics*, 71(2), 333-343, 2015.
- A. Arribas-Gil and J. Romo. Shape Outlier Detection and Visualization for Functional Data: the Outliergram, *Biostatistics*, 15(4), 603–619, 2014.
- I. Albarrán, P. Alonso, A. Arribas-Gil and A. Grané. Can Personal Dependency Paths Help to Estimate Life Expectancy Free of Dependency? In *Mathematical and Statistical Methods for Actuarial Sciences and Finance*, p. 1-5, Cira Perna and Marilena Sibillo (Eds.), ISBN 978-3-319-05014-0, Springer, 2014.
- A. Arribas-Gil and H-G- Müller. Pairwise dynamic time warping for event data, *Computational Statistics and Data Analysis*, 69, 255–268, 2014.
- A. Arribas-Gil, K. Bertin, C. Meza and V. Rivoirard. Lasso-type estimators for semiparametric nonlinear mixed-effects models estimation, *Statistics and Computing*, 24(3), 443–460, 2014.
- A. Arribas-Gil and C. Matias. A context dependent pair hidden Markov model for statistical alignment, *Statistical Applications in Genetics and Molecular Biology*, 11(1), Article 5, 2012.
- A. Arribas-Gil and J. Romo. Robust depth-based estimation in the time warping model. *Biostatistics*, 13(3): 398–414, 2012.
- A. Arribas-Gil. Parameter estimation in multiple-hidden i.i.d. models from biological multiple alignment. *Statistical Applications in Genetics and Molecular Biology*, 9(1), Article 10, 2010.
- A. Arribas-Gil, D. Metzler and J.-L. Plouhinec. Statistical alignment with a sequence evolution model allowing rate heterogeneity along the sequence. *IEEE/ACM Transactions on Computational Biology and Bioinformatics*, 6(2), 281–295, 2009.
- A. Arribas-Gil, E. Gassiat and C. Matias. Parameter estimation in pair hidden Markov models. *Scandinavian Journal of Statistics*, 33(4), 651–671, 2006.

Working papers

- R. de la Cruz, C. Meza, A. Arribas-Gil and R. J. Carroll. Bayesian Regression Analysis of Data with Random Effects Covariates from Nonlinear Longitudinal Measurements, `http://arxiv.org/abs/1310.8176`, 2013.
- I. Albarrán, P. Alonso and A. Arribas-Gil. Dependency evolution in Spanish disabled population: a functional data analysis approach. *UC3M Working papers, Statistics and Econometrics*, 13-03, `http://hdl.handle.net/10016/16239`, 2013.

Teaching experience

Assistant professor at Universidad Carlos III de Madrid, Spain:

- M.A. in Quantitative Methods for the Actuarial Sector: Simulation (2015).
- B.A. in Statistics: Elementary Statistical Theory II (2014-2015), Exploratory Data Analysis (2012), Time Series (2009).
- B.A. in Business Administration, B.A. in Economics: Introduction to Statistics (2008-2009), Statistics I (2008-2014), Statistics II (2010-2011), Statistics III (2007).
- Statistics III: B.A. in Business Administration, Universidad Carlos III de Madrid (Spain), 2007.

Teaching assistant at Université Paris-Sud and Université Paris 5, France:

- M.S. in Bioinformatics and Biostatistics: Statistical Modelling (2006).
- M.S. in Mathematical Engineering: Time Series I (2006), Time Series II (2006).
- B.S. in Pharmacy: Mathematics I (2003-2006).

Invited talks at conferences and seminars (from 2010)

dec.2014	7th International Conference of the ERCIM Working Group on Computing & Statistics, ERCIM 2014, Pisa, Italy. "Two dimensional representation of functional data for outlier detection".
jun.2014	2nd Conference of the International Society for Nonparametric Statistics, Cádiz, Spain. "Visualization of shape outliers in functional data samples".
jan.2014	Seminar of the Laboratoire 'Statistique et Génome', CNRS-INRA, Évry, France. "Multiple alignment of curves through pairwise dynamic time-warping".
nov.2013	Seminar of the Department of Statistics, North Carolina State University, Raleigh, USA. "Shape Outlier Detection and Visualization for Functional Data".
june 2013	Seminar of Statistics, Institut de Mathématiques de Toulouse, Toulouse, France. "Time-warping and robustness in functional data analysis".
dec. 2012	5th International Conference of the ERCIM Working Group on Computing & Statistics, Oviedo, Spain. "Analysis of dependency evolution in Spanish disabled population through functional data".
june 2012	1st Conference of the International Society for Nonparametric Statistics, Chalkidiki, Greece. "Pairwise dynamic time warping for event data".
sept. 2011	Congreso de Jóvenes Investigadores de la Real Sociedad Matemática Española, Soria, Spain. "A context dependent pair hidden Markov model for statistical alignment".
may 2011	Seminar of the Department of Statistics, University of California, Davis, USA. "Robust depth-based estimation in the time-warping model".
jul. 2010	5th International Workshop on Applied Probability, Colmenarejo, Spain. "Parameter estimation en multiple hidden i.i.d. models from biological multiple alignment".

jun. 2010	International Conference on Robust Statistics, ICORS 10, Prague, Czech Republic. "Robust estimation in the time warping problem through functional data depth".
feb. 2010	Workshop on Inference in Stochastic Models of Sequence Evolution, Mathematical Biosciences Institute, The Ohio State University, USA: "Parameter estimation in models for sequence alignment".

Fellowships and research projects

- Postdoctoral Fellowship 'José Castillejo' from Ministerio de Educación Spain, February-July 2011.
- Doctoral Fellowship from Ministère de l'Education Nationale, France, 2003-2006.
- Postgraduate Fellowship from 'La Caixa', Spain, 2002-2003.
- Research Project ECO2011-25706, Ministerio de Ciencia e Innovación, Spain. Principal investigator: Juan Romo. Period 2012-2014.
- Research Project MTM2010-17323, Ministerio de Educación y Ciencia, Spain. Principal investigator: Aurea Grané. Period 2011-2013.
- Research Project ECO2008-05080, Ministerio de Educación y Ciencia, Spain. Principal investigator: Juan Romo. Period 2009-2011.
- Research Project HI2008-0069, Ministerio de Educación y Ciencia, Spain. Principal investigator: Daniel Peña. Period 2009-2010.
- Research Project CCG08-UC3M/HUM-4467, Comunidad de Madrid-Universidad Carlos III de Madrid, Spain. Principal investigator: Rosa Lillo. Period 2009.
- Research Project SEJ2005-06454, Ministerio de Educación y Ciencia, Spain. Principal investigator: Juan Romo. Period 2005-2008.

Competences

IT:	OS	Unix, Linux, Windows, Mac OS X.
	Programming	FORTRAN, Matlab, R.
Languages:	English	Intermediate level (written and spoken).
	French	Fluent.
	Spanish	Native.

References

Elisabeth Gassiat, Full Professor at Université Paris-Sud XI, France.
`elisabeth.gassiat@math.u-psud.fr`

Juan Romo, Full Professor at Universidad Carlos III de Madrid, Spain.
`juan.romo@uc3m.es`