

Aida Calviño Martínez

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Date of birth: 17th December 1988



Education

- March 2013 **Doctor of Philosophy**, *Cantabria University, Spain*, awarded Cum Laude.
Thesis: Some statistical and mathematical tools for traffic modelling (Supervisor: Professor Enrique Castillo)
- July 2011 **Master of Science in Statistical Techniques**, *Santiago de Compostela University, Spain*, 91.6/100.
- June 2010 **Bachelors Degree in Applied Statistics**, *Complutense University of Madrid, Spain*, 98.3/100.
- June 2009 **Bachelors Degree in Statistics**, *Complutense University of Madrid, Spain*, 97.3/100.

Positions held

- September 2020 - Present **Associate Professor**, *Complutense University of Madrid, Spain*.
- October 2015 - September 2020 **Assistant Professor**, *Complutense University of Madrid, Spain*.
- October 2014 - September 2015 **Post-doctoral Researcher**, *University Rovira i Virgili, Spain*.
- August 2011 - September 2014 **Pre/Post-doctoral Researcher**, *Cantabria University, Spain*.
- April 2013 - August 2013 **Visiting scholar**, *Hong Kong University of Science and Technology, Hong Kong*.
- January 2010 - June 2010 **Research assistant**, *Microbiology National Center (ISC-III), Spain*.
- January 2010 - June 2010 **Research assistant**, *Statistical School of Complutense University of Madrid, Spain*.
Supported by the Madrid Community Grant for excellent students.
- January 2009 - June 2009 **Research assistant**, *Statistical School of Complutense University of Madrid, Spain*.
Supported by the Madrid Community Grant for excellent students.
- January 2008 - June 2008 **Research assistant**, *Statistical School of Complutense University of Madrid, Spain*.
Supported by the Madrid Community Grant for excellent students.
- January 2007 - June 2007 **Research assistant**, *Statistical School of Complutense University of Madrid, Spain*.
Supported by the Madrid Community Grant for excellent students.

Awards

- Winner of the *SAS Spain Hackathon Challenge 2018*, for solving a *Data4good* challenge for the Madrid City Council.
- III International Abertis Chair Prize, doctoral thesis category, 2014.
- XI Abertis Prize for Research on Transport Infrastructure Management awarded by the Abertis-UPC Chair for the best doctoral thesis, 2014.
- Spanish National Award for Excellence in Academic Performance, 2011.
- Extraordinary award for the Degree in Applied Statistics (Complutense University of Madrid) 2009/2010.
- Spanish National Award for Excellence in Academic Performance, 2010.
- Experimental sciences Complutense award (Complutense University of Madrid) 2008/2009.
- Extraordinary award for the Degree in Statistics (Complutense University of Madrid) 2008/2009.

Publications

Conference

Aida Calviño. On random-forest-based prediction intervals. In Cesar Analide, Paulo Novais, David Camacho, and Hujun Yin, editors, *Intelligent Data Engineering and Automated Learning – IDEAL 2020*, pages 172–184, Cham, 2020. Springer International Publishing.

A. Calviño, P. Aldeguer, and J. Domingo-Ferrer. Factor Analysis for Anonymization. In *2017 IEEE International Conference on Data Mining Workshops (ICDMW)*, pages 984–991, New Orleans, LA, Nov 2017. doi: 10.1109/ICDMW.2017.139.

E. Castillo, Z. Grande, A. Calviño, M. Nogal, and A.J. O'Connor. Probabilistic Safety Analysis of High Speed Railway Lines including Human Errors. In J. Pombo, editor, *Third International Conference on Railway Technology: Research, Development and Maintenance*, page paper 73, Stirlingshire, United Kingdom, 2016. Civil-Comp Press. doi: 10.4203/ccp.110.73.

A. Calviño, S. Ricci, and J. Domingo-Ferrer. Privacy-Preserving Distributed Statistical Computation to a Semi-Honest Multi-Cloud. In *2015 IEEE Conference on Communications and Network Security (CNS)*, pages 506–514, Sept 2015. doi: 10.1109/CNS.2015.7346863.

Journal

Aida Calviño, Nirian Martín, and Leandro Pardo. Robustness of minimum density power divergence estimators and wald-type test statistics in loglinear models with multinomial sampling. *Journal of Computational and Applied Mathematics*, 386:113214, 2021.

I. Morro-Mello, A. Padilha-Feltrin, J.D. Melo, and A. Calviño. Fast charging stations placement methodology for electric taxis in urban zones. *Energy*, 188:116032, 2019.

A. Calviño. A simple method for limiting disclosure in continuous microdata

based on principal component analysis. *Journal of Official Statistics*, 33(1):15–41, 2017.

E. Castillo, Z. Grande, and A. Calviño. Bayesian networks-based probabilistic safety analysis for railway lines. *Computer-Aided Civil and Infrastructure Engineering*, 31(9):681–700, 2016.

E. Castillo, Z. Grande, A. Calviño, W.Y. Szeto, and H.K. Lo. A state-of-the-art review of the sensor location, flow observability, estimation and prediction problems in traffic networks. *Journal of Sensors*, vol. 2015, Article ID 903563:26 pages, 2015.

M. Nogal, E. Castillo, A. Calviño, and A.J. O'Connor. Coherent and compatible statistical models in structural analysis. *International Journal of Computational Methods*, 13(02):1640008, 2016.

E. Castillo, A. Calviño, Z. Grande, S. Sánchez-Cambronero, I. Gallego, A. Rivas, and J.M. Menéndez. A Markovian-Bayesian network for risk analysis of high speed and conventional railway lines integrating human errors. *Computer-Aided Civil and Infrastructure Engineering*, 31(3):193–218, 2016.

E. Castillo, A. Calviño, H.K. Lo, J.M. Menéndez, and Z. Grande. Non-planar hole-generated networks and link flow observability based on link counters. *Transportation Research Part B*, 68:239–261, 2014.

E. Castillo, A.J. O'Connor, M. Nogal, and A. Calviño. On the physical and probabilistic consistency of some engineering random models. *Structural Safety*, 51:1–12, 2014.

E. Castillo, A. Calviño, M. Nogal, and H.K. Lo. On the probabilistic and physical consistency of traffic random variables and models. *Computer-Aided Civil and Infrastructure Engineering*, 29:496–517, 2014.

E. Castillo, M. Nogal, and A. Calviño. Two applications of statistics to traffic models. *Communications in Statistics - Theory and Methods*, 43(10-12):2118–2134, 2014.

J.D. Melo, E.M. Carreño, A. Calviño, and A. Padilha-Feltrin. Determining spatial resolution in spatial load forecasting using a grid-based model. *Electric Power Systems Research*, 111:177–184, 2014.

E. Castillo, J.M. Menéndez, S. Sánchez-Cambronero, A. Calviño, and J.M. Sarabia. A hierarchical optimization problem: Estimating traffic flow using gamma random variables in a bayesian context. *Computers and Operations Research*, 41:240–251, 2014.

E. Castillo, M. Nogal, A. Calviño, A. Rivas, and H.K. Lo. A model for continuous dynamic network loading problem with different overtaking class users. *Journal of Intelligent Transportation Systems*, 17(4):328–350, 2013.

E. Castillo, A. Calviño, S. Sánchez-Cambronero, M. Nogal, and A. Rivas. A percentile system optimization approach with and without path enumeration. *Computers and Operations Research*, 40(11):2711–2723, 2013.

E. Castillo, A. Calviño, S. Sánchez-Cambronero, and H.K. Lo. A multi-class user equilibrium model considering overtaking across classes. *IEEE Transactions on Intelligent Transportation Systems*, 14(2):928–942, 2013.

E. Castillo, A. Calviño, J.M. Menéndez, P. Jiménez, and A. Rivas. Deriving the upper bound of the number of sensors required to know all link flows in a traffic network. *IEEE Transactions on Intelligent Transportation Systems*, 14(2):761–771, 2013.

J. Medrano, J. Macías, A. Rivero, S. Resino, S. Naggie, A. Caruz, N. Rallón, A. Calviño, K. Keulen, J.M. Benito, S. Sánchez-Piedra, E. Vispo, P. Barreiro, J. McHutchison, J.A. Pineda, and V. Soriano. Modeling the probability of sustained virological response to peginterferon-ribavirin therapy in hcv-hiv coinfectd patients. *Clinical Infectious Diseases*, 51(10):1209–1216, 2010.

Others

A. Calviño. *Some statistical and mathematical tools for traffic modeling*. PhD thesis, University of Cantabria, ISBN: 9788469574409, 2013.

Conference presentations

- November 2020 **On random-forest-based prediction intervals**, *21st Intelligent Data Engineering and Automated Learning – IDEAL 2020*, Guimaraes, Portugal.
November 4-6, 2020.
- May 2018 **Estimators and Wald-type test statistics in loglinear models with multinomial sampling**, *XXXVII Spanish statistical and operational research society meeting*, Oviedo, Spain.
May 29 - June 1, 2018.
- November 2017 **Factor Analysis for Anonymization**, *2017 IEEE International Conference on Data Mining (10th International Workshop on Privacy and Anonymity in the Information Society)*, New Orleans, USA.
November 18-21, 2017.
- November 2017 **Minimum Density Power Divergence Estimators in Loglinear Models with multinomial sampling**, *1st Spanish Young Statisticians and Operational Researchers Meeting (SYSORM)*, Granada, Spain.
November 13-15, 2017.
- September 2016 **Inferencia para un modelo “step-stress” con censura tipo II progresiva y tiempos de vida log-normales**, *XXXVI Spanish statistical and operational research society meeting*, Toledo, Spain.
September 5-7, 2016.
- September 2015 **Privacy-Preserving Distributed Statistical Computation to a Semi-Honest Multi-Cloud**, *2015 IEEE Conference on Communications and Network Security*, Florence, Italy.
September 28-30, 2015.
- May 2015 **A simple method for limiting disclosure in microdata based on Principal Component Analysis**, *XXXV Spanish statistical and operational research society meeting*, Pamplona, Spain.
May 26-29, 2015.

- April 2012 **A traffic assignment model considering overtaking**, *XXXIII Spanish statistical and operational research society meeting*, Madrid, Spain.
April 17-20, 2012.
- November 2010 **Mathematical methods for epidemic modelling**, *I National meeting for young researchers in experimental design and biostatistics*, Toledo, Spain.
November 24-26, 2010.

Conference collaborations

- July 2014 **Coherent and Compatible Statistical Models in Structural Analysis**, *5th International Conference on Computational Methods*, Cambridge, United Kingdom, July 28-30, 2014.
Coauthors: Nogal, M., Castillo, E., Calviño, A. y O'Connor, A.
- January 2012 **Two applications of Statistics to Traffic Models**, *II Spanish and Mexican mathematical societies joint meeting*, Torremolinos, Málaga, Spain, January 17-20, 2012.
Coauthors: Castillo, E., Nogal, M. and Calviño, A.
- December 2011 **Some applications of Statistics to Traffic Models**, *International Conference on Advances in Probability and Statistics - Theory and Applications: A Celebration of N. Balakrishnan's 30 years of Contributions to Statistics*, Hong Kong, China, December 28-31, 2011.
Coauthors: Castillo, E., Nogal, M. and Calviño, A.
- February 2011 **Modeling the probability of sustained virological response to peginterferon-ribavirin therapy in HCV-HIV coinfectd patients.**, *18th Conference on Retroviruses and Opportunistic Infections*, Boston, Massachusetts, USA, February 27 - March 2, 2011.
Coauthors: Medrano, J., Resino, S., Rallón, N., Naggie, S., Sánchez-Piedra, C., Calviño, A., Caruz, A., Vispo, E., McHutchison, J. and Soriano, S.
- October 2010 **Prediction of mortality using MELD and MELD-Na scores in cirrhotic patients with HIV infection**, *AASLD 2010 Annual Meeting*, Boston, Massachusetts, USA, October 29-30, 2010.
Coauthors: Sánchez-Piedra, C., Medrano, J., Tuma, P., Calviño, A., Resino, S., Martín-Carbonero, L., Arredondo, M., Vispo, E., Labarga, P., Barreiro, P. and Soriano, V.
- March 2010 **Efficacy and safety of TDF+FTC+EFV in naïve patients initiating HAART: an observational study comparing Atripla Vs Truvada/Sustiva exposure**, *16th International Symposium on HIV and Emerging Infectious Diseases*, Marseille, France, March 24-26, 2010.
Coauthors: Sanchez, C.A., Medrano, J., Labarga, P., Vispo, E., Calviño, A., Martín-Carbonero, L., Barreiro, P. and Soriano, V.

Research Projects

- 2019-2021 **Estimacion y contrastes de hipotesis robustos para datos de alta dimension basados en la divergencia de potencias de densidad**, *funded by the Spanish Ministry for Science and Innovation*.
- 2016-2018 **Estimación y contrastes robustos basados en medidas de divergencia para la modelización de dispositivos de un solo uso**, *funded by the Spanish Ministry for Science and Innovation*.
- 2015-2017 **CLARUS: A framework for user centred privacy and security in the cloud**, *funded by the European Commision*.

- 2014-2017 **CO-UTILITY: Conciliating individual freedom and common good in the information society**, *funded by the Templeton World Charity Foundation.*
- 2012-2014 **CO-PRIVACY: Privacidad sostenible para una sociedad de la información sostenible. Subproyecto V-Privacy**, *funded by the Spanish Ministry for Science and Innovation.*
- 2014-2014 **Alternativas para la reducción de coste y aumento de la seguridad en alta velocidad**, *funded by University of Cantabria.*
- 2011-2013 **Métodos de optimización en redes de transporte de ferrocarril y carretera**, *funded by the Spanish Ministry for Science and Innovation.*
- 2009-2011 **Hepatitis C en pacientes coinfectados por VIH/VHC: Influencia de los polimorfismos genéticos de un solo nucleótido (SNPs)**, *funded by the "Fondo de Investigación Sanitaria".*

Lectures

- December 2014 **Some statistical and mathematical tools for traffic modelling**, *Institut français des sciences et technologies des transports, de l'aménagement et des réseaux.*
- May 2014 **Some statistical and mathematical tools for traffic modelling**, *Politécnica University of Cataluña-Barcelona Tech (UPC).*
- February 2014 **Optimization and statistical based solutions for two classic traffic problems**, *Carlos III University of Madrid.*
- November 2013 **Optimization-based solutions for two classic traffic problems**, *West Paraná State University, Brazil.*
- January 2010 **Mathematical methods for epidemic modelling**, *Complutense University of Madrid (Statistical School).*
- May 2009 **Mathematical methods for epidemic modelling**, *Complutense University of Madrid (Statistical School).*

Teaching experience

- 2019/2020 **An Introduction to Statistics as a Methodological Tool for Research (5th edition)**, *Ph.D. School, Complutense University of Madrid, Spain.*
Data Mining Techniques and Methodology (SEMMA), *Masters of Business Intelligence and Data Mining, Complutense University of Madrid, Spain.*
Statistical Estimation I, *Degree on Applied Statistics, Complutense University of Madrid, Spain.*
Probability Theory and Stochastic Processes, *Degree on Applied Statistics, Complutense University of Madrid, Spain.*
- 2018/2019 **An Introduction to Statistics as a Methodological Tool for Research (3rd and 4th editions)**, *Ph.D. School, Complutense University of Madrid, Spain.*
Methodology of Research Work, *Masters of Business Intelligence and Data Mining, Complutense University of Madrid, Spain.*
Data Mining Techniques and Methodology (SEMMA), *Masters of Business Intelligence and Data Mining, Complutense University of Madrid, Spain.*
- 2017/2018 **Statistics**, *Degree on Podiatry, Complutense University of Madrid, Spain.*

- An Introduction to Statistics as a Methodological Tool for Research (1st and 2nd editions)**, *Ph.D. School*, Complutense University of Madrid, Spain.
- Basic Statistics for Health Sciences**, *Masters of Health Care Research*, Complutense University of Madrid, Spain.
- Complementary Training in Data Mining Techniques**, *Masters of Business Intelligence and Data Mining*, Complutense University of Madrid, Spain.
- Data Mining Techniques and Methodology (SEMMA)**, *Masters of Business Intelligence and Data Mining*, Complutense University of Madrid, Spain.
- 2016/2017 **Complementary Training in Data Mining Techniques**, *Masters of Business Intelligence and Data Mining*, Complutense University of Madrid, Spain.
- Data Mining Techniques and Methodology (SEMMA)**, *Masters of Business Intelligence and Data Mining*, Complutense University of Madrid, Spain.
- Advanced Survey Sampling Designs and Official Statistics**, *Degree on Applied Statistics*, Complutense University of Madrid, Spain.
- 2015/2016 **Complementary Training in Data Mining Techniques**, *Masters of Business Intelligence and Data Mining*, Complutense University of Madrid, Spain.
- Advanced Survey Sampling Designs and Official Statistics**, *Degree on Applied Statistics*, Complutense University of Madrid, Spain.
- 2013 **Probability and Statistics for Engineering**, *Masters of Dynamic and Energy Systems*, West Paraná State University, Brazil.
- 2012/2013 **Statistics**, *Degree in Chemical Engineering*, University of Cantabria, Spain.
- 2011/2012 **Mathematical methods for engineering**, *Degree in Mechanical Engineering*, University of Cantabria, Spain.
- Statistics and Numerical Methods**, *Degree in Civil Engineering*, University of Cantabria, Spain.

Advising

- 14 MSc Final Dissertations advised.
- 10 BSc Final Dissertations advised.

Stays in foreign countries

- June 2018 **Maputo (MOZAMBIQUE)** 3 weeks teaching stay in Pedagogical University.
- September 2013 **Foz do Iguaçu (BRAZIL)** 4 months research and teaching stay in West Paraná State University.
- April 2013 **Hong Kong (CHINA)** 4 months research stay in Hong Kong University of Science and Technology under the supervision of Prof. Hong K. Lo.
- May 2012 **Hamilton (CANADA)** 4 months research stay in McMaster University under the supervision of Prof. N. Balakrishnan.
- July 2010 **Brussels (BELGIUM)** Intensive 3 weeks French course.
- June 2009 **Liverpool (UNITED KINGDOM)** Intensive 3 weeks English course.
- July 2007 **Montpellier (FRANCE)** Intensive 3 weeks French course.

Languages

Spanish **Native**

English **Fluent**
French **Fluent**

Computer skills

Statistical software R, SPSS, SAS
Mathematical software Matlab, Mathematica, GAMS, Python
Miscellaneous LaTeX, Windows, Office

Courses attended

March-April 2019 **Introduction to gamification through examples**, *Open University of Catalunya*, 20 hours.
March-May 2017 **Data Analysis with Python**, *Complutense University of Madrid*, 40 hours.
October 2016 **Tasks and surveys on Moodle 2.9**, *Complutense University of Madrid*, 2 hours.
May 2014 **Adobe Photoshop**, *Cantabria University*, 9 hours.
April 2014 **Adobe Acrobat Pro**, *Cantabria University*, 9 hours.
January 2014 **Presenting research: the discourse of the research article**, *Cantabria University*, 8 hours.
January 2014 **Academic writing in Spanish**, *Cantabria University*, 8 hours.
January 2014 **Effective presentations**, *Cantabria University*, 8 hours.
March 2013 **How to avoid voice problems**, *Cantabria University*, 8 hours.
March 2013 **Research data bases and journals**, *Cantabria University*, 6 hours.
February 2013 **Adobe Illustrator**, *Cantabria University*, 9 hours.
November 2012 **Statistical analysis of spatial data**, *Basque statistical institute*, 12 hours.
November 2012 **Introduction to web creation**, *Cantabria University*, 9 hours.
October 2012 **Tutoring and mentoring at the european space for higher education**, *Cantabria University*, 8 hours.

Miscellaneous

- Co-chair of the Organizing Committee of *2nd Spanish Young Statisticians and Operational Researchers Meeting (SYSORM)* held in San Lorenzo del Escorial (Madrid, Spain) in June 2019
- Responsible of the Series of Lectures on Data Science of the Faculty of Statistics (Complutense University of Madrid), academic courses 2017/2018 and 2018/2019
- Referee for the International Journal of Energy Research, Computers & Industrial Engineering Journal and IEEE Intelligent Transportation Systems Magazine
- Educational innovation award by University of Cantabria
- Member of the Spanish Statistical and Operations Research Society