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Education

- PhD in Statistics, Pontificia Universidad Católica de Chile, Chile, 2012.
    - Thesis: "Theory and Applications of Dependent Nonparametric Bayesian Models for Bounded and Unbounded Responses."
    - Advisor: Fernando Quintana – Co-advisor: Alejandro Jara.
- Bachelor's Degree in Statistics, Universidad del Valle, Colombia, 2006.

Research

Published Papers

- **Barrientos, A. F.**, Bolton, A., Balmat, T., Reiter, J. P., de Figueiredo, J. M., Machanavajjhala, A., Chen, Y., Kneifel, C., and DeLong, M. (2018). Providing access to confidential research data through synthesis and verification: An application to data on employees of the US federal government. *The Annals of Applied Statistics*, 12(2), 1124-1156.

- Akande, O., Reiter, J. P., **Barrientos, A. F.** (2018). Multiple imputation of missing values in household data with structural zeros. Accepted for publication in Survey Methodology.

- Chen, Y., **Barrientos, A. F.**, Machanavajjhala, A., Reiter, J. P. (2018). Is my model any good: differentially private regression diagnostics. *Knowledge and Information Systems*, 54(1), 2018.

- **Barrientos, A. F.**, Jara, A., Quintana, F. A. (2017). Fully nonparametric regression for bounded data using dependent Bernstein polynomials. *Journal of the American Statistical Association*, 112(518), 806-825.

- **Barrientos, A. F.**, Jara, A., Wehrhahn, C., (2017). Posterior convergence rate of a class of Dirichlet process mixture model for compositional data. *Statistics and Probability Letters*, 120, 45-51.

- **Barrientos, A. F.**, Jara, A., Quintana, F. A. (2015). Bayesian density estimation for compositional data using random Bernstein polynomials. *Journal of Statistical Planning and Inference*, 166, 116-125.

- González, J., **Barrientos, A. F.**, Quintana, F. A. (2015) Bayesian nonparametric estimation of test equating functions with covariates. *Computational Statistics & Data Analysis*, 89, 222-244.

- **Barrientos, A. F.**, Jara, A., Quintana, F. A. (2012). On the support of MacEachern's dependent Dirichlet processes and extensions. *Bayesian Analysis*, 7(2): 277–310.

- **Barrientos, A. F.**, Olaya, J., González, V. (2007). A Spline Model for Electricity Demand Forecasting. *Revista Colombiana de Estadística*, 30(2): 187–202.

Book Chapters and

- Chen, Y., Machanavajjhala, A., Reiter, J. P., **Barrientos, A. F.** (2016) Differentially private regression diagnostics. *IEEE International Conference on Data Mining*.

- González, J, **Barrientos, A. F.**, Quintana, F. A. (2015). A dependent Bayesian nonparametric model for test equating. *In Millsap, R.E., Bolt, D.M., van der Ark, L.A., Wang, W.-C. (Eds.) Quantitative Psychology Research*, 213–266. Springer.

Submitted papers

- Wehrhahn, C., Jara, A., **Barrientos, A. F.** (2018+) Small sample properties of Dirichlet process mixture models for data supported on compact intervals Submitted in June 2018.
- Akande, O., Reiter, J. P., **Barrientos, A. F.** (2018+). Simultaneous edit and imputation for household data with structural zeros . Submitted in April 2018.
- Gutiérrez, L., **Barrientos, A. F.**, González, J, Taylor-Rodríguez, D (2018+). A Bayesian nonparametric multiple testing procedure for comparing several treatments against a control. Submitted in February 2018.
- **Barrientos, A. F.**, Canale, A. (2018+). A Bayesian goodness-of-fit test for regression. Submitted in January 2018.
- **Barrientos, A. F.**, Reiter, J. P., Machanavajjhala, A., Chen, Y. (2018+). Differentially Private Significance Tests for Regression Coefficients. Submitted in July 2017.
- **Barrientos, A. F.**, Peña, V. (2018+). Bayesian bootstraps for massive data. Submitted in May 2017.

Teaching Experience

- Instructor, Duke University, STA210, Regression Analysis (Spring 2018).
- Teaching Assistant, Pontificia Universidad Católica de Chile,

    EPG3601, Advanced Statistical Computing, March – July 2010 and 2012.

    EPG3343, Statistical Analysis with Missing Data, March – July 2011.

    EPG3346, Bayesian Nonparametrics Methods, August–December 2011.

- Instructor, School of Industrial Engineering and Statistics, Universidad del Valle, Colombia, July 2006 – February 2008.

Research and Academic Experience

- Postdoctoral Associate, Duke University, March 2015 – Present.
- Visiting Research Fellow, University of Texas at Austin, November–December 2014.
- Research Fellow, Pontificia Universidad Católica de Chile, October 2012 – October 2014.
- Statistical Assistant, School of Engineering of Natural Resources and Environment, Universidad del Valle, Colombia, May 2003 – December 2007.

Presentations

- Differential Private Sign and Significance for Regression Coefficients, The sixth Annual Canadian Statistics Student Conference, Canada, June 2018.
- Differential Private Sign and Significance for Regression Coefficients, Join Statistical Meeting, USA, August 2017.
- Bayesian Bootstraps for Massive Data, 11th Workshop in Bayesian Nonparametrics, France, June 2017.
- Bayesian Bootstraps for Massive Data, V Latin American Meeting on Bayesian Statistics, México, June 2017.

- Differential private sign and significance of regression coefficients, International Conference on Advances in Interdisciplinary Statistics and Combinatorics, USA, September 2016.

- Bayesian nonparametric approaches for the analysis of compositional data based on Bernstein polynomials, Join Statistical Meeting, USA, August 2015.

- Bayesian goodness-of-fit testing for density regression, 10th Workshop in Bayesian Nonparametrics, USA, June 2015.

- Predictor-Dependent Inequality Modeling, Departmental Seminar, University of Texas at Austin, USA, October 2014.

- Bayesian density estimation for compositional data using random Bernstein polynomials, XL Jornadas Nacionales de Estadística, Chile, October 2013.

- Bayesian density estimation for compositional data using random Bernstein polynomials, Departmental Seminar, Collegio Carlo Alberto, Italy, July 2013.

- Bayesian density estimation for compositional data using random Bernstein polynomials, 9th workshop in Bayesian nonparametrics, The Netherlands, June 2013.

- On the support of MacEachern's dependent Dirichlet processes, III Latin American Meeting on Bayesian Statistics and XXXVIII National Meeting of Statistics, Chile, October 2011.

- On the support of MacEachern's dependent Dirichlet processes, 8th Workshop on Bayesian Nonparametrics, Mexico, June 2011.

- Dependent Bernstein polynomials for bounded density regression, IX Seminario Chileno de Estadística Bayesiana, Universidad de Talca, Chile, January 2011.

- Dependent Bernstein polynomials for bounded density regression, IX Congreso Latinoamerica de Sociedades de Estadística, Chile, October 2010.

Referee Experience

Bayesian Analysis, Biometrical Journal, Canadian Journal of Statistics, Computational Statistics & Data Analysis, Electronic Journal of Statistics, Journal of Official Statistics, Journal of Statistical Planning and Inference, Journal of Statistical Software, Journal of the American Statistical Association, Statistics and Computing, and Statistical Science.

Honors, Awards, and Fellowships

- Finalist for Savage Award, Theory & Methods, for best Bayesian dissertation, 2013.
- FONDECYT Fellowship No. 3130400, Chile, 2012.
- Maximum Distinction, PhD in Statistics, Pontificia Universidad Católica de Chile, Chile, 2012.
- "Bayesianos SOCHE" Young Investigator Award, Bayesian Section of the Chilean Society of Statistics, 2010.
- CONICYT Fellowship for Latinoamerican Doctoral Students, Chile, 2008.
- Best Undergraduate Student, Universidad del Valle, 2006.

Direction of Research

Claudia Wehrhahn, PhD Thesis, co-advisor, 2013 to 2016 (Postdoctoral Associate, Applied Math and Statistics, UC Santa Cruz, USA.).