



Nicolás Hernández Banadik

CONTACT INFORMATION

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Getafe, Madrid 28903 Spain

RESEARCH INTERESTS

Functional data analysis, Kernel learning methods, Data Mining, Machine Learning and Statistical Computing with applications, Technology and Economics.

EDUCATION

Universidad Carlos III de Madrid, Getafe, Madrid Spain

Ph.D. Candidate, Statistics, December 2015 (expected graduation date: December 2018)

- Thesis: "Kernel learning methods for multivariate functional data with applications to prediction, classification and outlier detection"
- Advisor: Alberto Muñoz García.

Master of Science in Business and Quantitative Methods, July 2015

- Dissertation Topic: "Deep Bootstrap Predictions for Univariate, Multivariate and Functional Time Series."
- Advisor: Juan Romo Urroz

Center for Economic Research (CINVE), Montevideo, Uruguay

Advanced Training Program in Quantitative Methods, June, 2012

Universidad ORT Uruguay, Montevideo, Uruguay

B.S. Economics, May, 2011 (GPA: 8.8/Top 5%)

REFEREED JOURNAL PUBLICATIONS

Martos, G., Hernández, N., Muñoz, A., & Moguerza, J. M. (2018). "Entropy Measures for Stochastic Processes with Applications in Functional Anomaly Detection". *Entropy*, 20(1), 33.

REFEREED CONFERENCE PAPERS

N. Hernández, A. Muñoz. (2016). "Kernel Depth Measures for Functional Data with Application to Outlier Detection". *Lecture Notes in Computer Science*, vol 9887, pp 235-242.

PAPERS IN PROGRESS

"Kernel Depth Measures for Stochastic Process with Applications to Outlier Detection". With G. Martos (Universidad de Buenos Aires and CONICET) and A. Muñoz (Universidad Carlos III de Madrid).

"Domain Selection For functional Data Classification". With G. Martos (Universidad de Buenos Aires and CONICET) and A. Muñoz (Universidad Carlos III de Madrid).

"Prediction of Spatio-temporal functional data". With G. Martos (Universidad de Buenos Aires and CONICET) and A. Muñoz (Universidad Carlos III de Madrid).

CONFERENCE
PRESENTATIONS
AND POSTERS

N. Hernández, G. Martos & A. Muñoz. 2017. “Domain Selection For functional Data Classification”. 11th International Conference on Computational and Financial Econometrics (CFE 2017) , London, UK, December 16-18, 2017.

N. Hernández, A. Muñoz. 2017. “Kernel Depth Function for Functional Data” (Poster). Statlearn’17 - 8th Statlearn workshop a conference of the French Society of Statistics (SFdS), Lyon, France, April 5-8, 2017.

N. Hernández, A. Muñoz. 2016. “Kernel Depth Functions for Functional Data with Application to Outlier Detection”. 25th International Conference on Artificial Neural Networks, Barcelona, Spain, September 6-9, 2016.

“Applied Markov Chains: a variant of the closed Knights tour problem”. Science week Community of Madrid, Universidad Carlos III de Madrid, Madrid, Spain, November, 2015

“Deep Bootstrap Predictions for Univariate, Multivariate and Functional Time Series”. Internal Seminar, Department of Statistics, Universidad Carlos III de Madrid, Madrid, Spain, July 14, 2015.

ACADEMIC
EXPERIENCE

Universidad Carlos III de Madrid, Getafe, Madrid Spain

Time Series Econometrics. Bachelor in Statistics and Business. **September, 2016 - present**
Lecturer

Statistics. Engineering Program for International Students. **September, 2016 - present**
UC3M International School
Lecturer

Quantitative Methods in Management. MBA. **August, 2015 - present**
Lecturer

Prediction Techniques. Bachelor in Statistics and Business. **2015**
Assistant Professor

Statistics. Bachelor in Business Administration. **2015**
Assistant Professor

Time Series Econometrics. Bachelor in Statistics and Business. **2014**
Assistant Professor

Time Series Econometrics. Bachelor in Finance and Accounting **2014 - 2015**
Assistant Professor

Universidad ORT Uruguay, Montevideo, Uruguay

Managerial Economics. Bachelor in Business Administration. **2012**
Lecturer

Mathematics. Bachelor in Business Administration. **2012**
Lecturer

| | | |
|----------------------------|---|---|
| | <i>Economics Principles. Bachelor in Economics</i> | 2011 - 2013 |
| | Assistant Professor | |
| | <i>Mathematical Economics. Bachelor in Economics</i> | 2009 - 2013 |
| | Assistant Professor | |
| PROFESSIONAL EXPERIENCE | Department of Economics, CPA-Ferrere Consultants , Montevideo, Uruguay. <i>Senior Research Analyst</i> Jan, 2010 - August, 2013 | |
| | <ul style="list-style-type: none"> • Fraud detection models for the National Customs Agency of Uruguay, (DNA) • Development of an econometric model that estimate the likelihood of underreported income by employees in the manufacturing sector, through the processing of the Household Survey for the Institution of Social Security. • Estimation of econometric models to develop a Fiscal Risk Map to detect fraudulent companies for the Government Taxation Office (DGI). • Design of the sample for the survey of net energy consumption in the industrial sector for the Department of Industry and Energy. • Impact analysis on financial inclusion of banking policies. • Socio-economic impact assessment of a great economic significance iron mining project in Uruguay. • Estimation of housing demand for low income households of the Institute of Social Security's Housing Program. • Technical Report of the Credit Card Market, analyzing the regulatory, efficiency and equity aspects. | |
| | Uruguay Chamber of Industry , Montevideo, Uruguay <i>Research Assistant</i> Aug, 2009 - Dec, 2009 | |
| | National Agency for Research and Innovation (ANII) , Montevideo, Uruguay <i>Research Assistant</i> Sep, 2008 - May, 2009 | |
| HONORS AND AWARDS | Scholarship for Doctoral studies (PIF). Universidad Carlos III de Madrid, 2015 - present. Scholarship for postgraduate studies. Universidad Carlos III de Madrid, 2013-2015. | |
| SERVICES | Reviewer for the Neurocomputing journal. Reviewer for the proceedings at the conference: European Symposium on Artificial Neural Networks, Computational Intelligence and Machine Learning. | |
| LANGUAGES | <i>Spanish</i> <i>English</i> | Mother tongue Advanced (Working proficiency) |
| COMPUTER SKILLS | <ul style="list-style-type: none"> • R, Eviews, SPSS (Advanced). • Matlab, Stata (Intermediate). • Applications: L^AT_EX, Microsoft Office • Operating Systems: Linux, Windows. | |
| OTHER SKILLS | Ability to work under pressure, adaptability, creative thinking, self-motivated. | |

ACADEMIC
REFERENCES

Alberto Muñoz García. Associate Professor. Department of Statistics. Universidad Carlos III de Madrid (Ph.D. Advisor)
E-mail: alberto.munoz@uc3m.es

Gabriel Martos Venturini . Research Associate. Facultad de Ciencias Naturales y Exactas. Universidad de Buenos Aires and CONICET.
E-mail: gabriel.martos@ic.fcen.uba.ar

PROFESSIONAL
REFERENCES

Gabriel Oddone. Partner. CPA-Ferrere Consultants. Uruguay.
E-mail: goddone@cpaferrere.com

Alfonso Capurro. Senior Manager. CPA-Ferrere Consultants. Uruguay.
E-mail: acapurro@cpaferrere.com