

Antonio ELÍAS FERNÁNDEZ

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POSITIONS

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|-----------|---|
| 2021-2023 | Personal Investigador Doctor
Applied Mathematics Dept., OASYS Group, Universidad de Málaga
Junta de Andalucía, co-financed by the EU Social Fund, PAIDI 2020 |
| 2020-2021 | Postdoctoral researcher, OASYS Group, Universidad de Málaga
FlexAnalytics - Advanced Analytics to Empower the Small Flexible Consumers of Electricity. European Research Council (ERC), Starting Grant |

EDUCATION

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|-----------|--|
| 2022 | Acreditado Contratado Doctor ANECA |
| 2015-2020 | Phd in STATISTICS (<i>cum laude</i>), Universidad Carlos III de Madrid
Thesis: "Depth-based methods for functional data analysis"
Advisor: Prof. Raúl JIMÉNEZ |
| 2013-2015 | Msc in Business and Quantitative Methods, Universidad Carlos III de Madrid , Spain
Thesis: "Envelopes for functional data"
Advisor: Prof. Raúl JIMÉNEZ |
| 2009-2013 | Bachelor Degree in Economics, Universidad Carlos III de Madrid , Spain
Thesis: "Conditional Logit with Fixed Effects: Gretl Implementation" |

RESEARCH STAYS

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|-----------|---|
| 2022 | Visiting Researcher, Macquarie University , Sidney, Australia
Working with Hanlin SHANG (1 month) |
| 2018-2019 | Visiting Researcher, Australian National University , Australia
Working with Hanlin SHANG (6 months) |
| 2017 | Visiting Researcher, MOX Laboratory, Politecnico di Milano , Italy
Working with Laura SANGALLI (3 months) |

SCIENTIFIC CONTRIBUTIONS

- A. Elías, R. Jiménez, H.L. Shang (2022). "Depth-based reconstruction method for incomplete functional data", *Computational Statistics*. [link](#).
- A. Elías, S. Pineda, J.M. Morales (2022). "A Functional Data Analysis Approach to Evolution Outlier Detection for Grouped Smart Meters", *Quality Engineering*. [link](#) [R package](#).
- A. Elías, R. Jiménez and J. Yukich (2022). "Localization processes for functional data". *Advances in Data Analysis and Classification*. [link](#) [CRAN R package](#).
- A. Elías, R. Jiménez, A. M. Paganoni, L. M. Sangalli (2022). "Integrated depth for partially observed functional data". *Journal of Computational and Graphical Statistics*, [link](#) [CRAN R package](#).
- I. Úcar, M. Torre, and A. Elías, (2022). "Mind the gender gap: COVID-19 lockdown effects

on gender differences in preprint submissions”, *Plos One*. [link](#)

A. Elías, R. Jiménez, H.L. Shang (2022). ”On projection methods for functional time series forecasting”, *Journal of Multivariate Analysis*. 4, 104890, [link](#) [R package](#).

Y. Aleman-Gomez, A. Arribas-Gil, M. Desco, A. Elías and J. Romo (2022). ”Visualizing Outliers in High Dimensional Functional Data for Task fMRI data exploration”. *Statistics in Medicine*. [link](#) [CRAN R package](#).

A. Caro, A. Elías, D. Peña and Ruey S. Tsay. (2021) ”SLBDD: Statistical Learning for Big Dependent Data”. [CRAN R package](#).

A. Elías, R. Jiménez, A. M. Paganoni, L. M. Sangalli (2019). ”A depth for censored functional data”. Working paper. UC3M Working Papers. Statistics and Econometrics. 17 - 12, Universidad Carlos III de Madrid. [Working paper](#).

A. Elías, R. Jiménez (2017). ”Prediction bands for functional data based on depth measures”. UC3M Working Papers. Statistics and Econometrics. 17 - 12, Universidad Carlos III de Madrid. Departamento de Estadística, 05/2017. [Working paper](#).

SCIENTIFIC DISSEMINATION AND OTHER ACADEMIC ACTIVITIES

2015 - Curr. Conferences and Talks [Detailed List](#)

2015 - Curr. Teaching [Detailed List](#)

2021 - Curr. Coordinator of Functional Data Analysis working group, SEIO
See [web 1](#).

2016 - 2021 Organizer Coding Club UC3M
Jointly with E. García-Portugués, D. Heredia and I. Úcar. See [web](#).

2016 - 2021 Technical Editor of BEIO
The Journal of Statistics and Operational Research (BEIO) of the
Spanish Society of Statistics and Operational Research (SEIO). See [web](#).

Teaching Innovation Projects (see [web](#))

2018 “Real Business Analytics” and “Real Data Journalism”

2017 “Teaching statistics through case studies”

2016 Data Science Summer Camp
FECYT and UC3M

INDUSTRIAL CONTRIBUTIONS

2021-2022	Bettergy, S.L. <i>Dimensioning and optimal operation of energy storage systems with energy production photovoltaic (Art. 83)</i> Forecasting household load curves.
2020-2023	ORANGE ESPAGNE S.A.U. <i>Network Quality Evaluation (Art. 83)</i> Net Promoting Scores (NPS) data analysis and drivers.
2018	Kinequo - KNQ Technologies <i>Log files as a source of data insights (Art. 83)</i> Development of resources allocation tools, worker efficiency indexes and forecasting system errors.
2017	Orbitare A.G. <i>Space Loop Proof of Concept (Art. 83)</i> Qualitative research about the potential feasibility of the project, strengths, weaknesses, opportunities and threats.
2016	Instituto Flores de Lemus, Universidad Carlos III de Madrid <i>Programming Support and Maintenance</i> Integrated prediction system composed by R, Matlab, Tramo, Seats, Dbank and Excel.
2014-2015	Redkampus Press S.L. <i>Market Study (Art. 83)</i> Introduction and Acceptance of New Insurance Products for University Students. Final client Antares and Pléyade, Telefónica Group.

OTHER PROFESSIONAL EXPERIENCES

2020	Universidad Carlos III de Madrid - Comunidad de Madrid <i>International scientific collaboration: network analysis with a gender perspective.</i> Data harvesting of JCR publications through the API of Web of Science. Genderize data set and network analysis.
2012 - 2018	Integration and Disability Department, Universidad Carlos III de Madrid <i>Volunteering</i> Teaching support and materials adaptation
2016	AFANIAS <i>Volunteering</i> Supporting leisure activities for people with functional diversity
2013	FSL India <i>Volunteering</i> School sanitation and teaching. (One month)
2013	General Consulate of Spain in New York <i>Consulate Officer</i> Visa processing and interviewer (4 months)
2013	Bank of Spain, Department of Economics, Statistics and Research. <i>Fellowship</i> "Credibility of Fiscal Plans" (6 months)

COMPETITIVE GRANTS AND AWARDS

2021 - 2023	Postdoctoral Research Grant, Junta de Andalucía , EU Social Fund.
2017 and 2018	Predoctoral Research Stay Grant (FPU), Ministry of Education
2016 - 2018	"Outstanding Teaching Recognition", Universidad Carlos III de Madrid Sampling Theory, Probability I, Probability II and Statistics for Journalism and Media Communication.
2016-2019	Predoctoral Research Grant (FPU), Ministry of Education
2015-2016	Research Grant (PIFP), Universidad Carlos III de Madrid
2013-2015	Grant for Master Studies, Universidad Carlos III de Madrid

TECHNICAL SKILLS

R, Rmarkdown, Python, Github, markdown, \LaTeX , SQL, HTML, CSS, JavaScript.

LANGUAGES

SPANISH: Mother tongue ENGLISH: Fluent

Conferences and Talks

- 02/2023 [Invited Talk] *VI Congreso de Jóvenes Investigadores de la Real Sociedad Matemática Española*, León. Avances y aplicaciones de la Estadística: "Integrated Depths for Partially Observed Functional Data".
- 11/2022 [Invited Talk] *Advanced Statistics Seminar*, Prague University. "Depth-based Pormanteau Test for Functional Time Series". Organised by Stanislav Nagy.
- 07/2022 [Invited Talk] *17th Conference of the International Federation of Classification Societies*, University of Porto, Portugal. "Depth-based classification for Partially Observed Functional Data".
- 06/2022 [Invited Talk] *XXXIX National Congress of Statistics and Operational Research*, SEIO, "Functional depth measures in the context of functional time series".
- 11/2021 [Assistance] *New Bridges between Mathematics and Data Science*, Valladolid, Spain.
- 06/2021 [Contributed] Ramiro Melendreras Award Seminar, *National Congress of Statistics and Operational Research*.
- 12/2021 [Invited Talk] *14th International Conference of the ERCIM WG on Computational and Methodological Statistics*, King's College London, UK. "Evolution outliers in high dimensional functional time series".
- 10/2021 [Contributed] *INFORMS Annual Meeting*, Anaheim Convention. "Depth-based Outlier Detection for Grouped Smart Meters: A Functional Data Analysis Toolbox"
- 09/2020 [Contributed] *International Symposium of Forecasting*. Title of the talk: "On nearest neighbour projection methods for functional time series forecasting". **Rio de Janeiro, Brazil**. Online.
- 09/2019 [Invited Talk] *Y-BIS Young Business and Industrial Statisticians Workshop on Recent Advances in Data Science and Business Analytics*. Title of the talk: "A depth-based method for functional time series forecasting". **Istanbul, Turkey**.
- 09/2019 [Invited Talk] *XXXVIII National Congress of Statistics and Operational Research*, SEIO. Title of the talk: "A depth-based method for functional time series forecasting". Alcoi, **Alacant, Spain**.
- 07/2019 [Invited Talk] *European Meeting of Statisticians*. Title of the talk: "Depth measures for partially observed functional data". Palermo, Sicily, **Italy**.
- 11/2019 [Contributed Talk] *II SYSORM 2019: Spanish Young Statisticians and Operational Researchers Meeting*. "Embedding uncertainty to integrated depth measures for partially observed functional data". Madrid, **Spain**.
- 05/2019 [Organizing Committee] *III International Workshop on Advances in Functional Data Analysis*. Spanish Society of Statistics and Operational Research (SEIO), FDA Group. Centro de Encuentros Matemáticos, Cantabria, **Spain**.
- 12/2018 [Attended] *MATRIX 2018*. Functional Data and Beyond. 8-9 December, Melbourne, **Australia**.
- 12/2018 [Attended] Summer School and Conference, 2018. College of Business and Economics. December, Sidney, **Australia**.
- 12/2018 [Invited Speaker] *CMStatistics 2018: Tenth Computational and Methodological Statistics*. "Exploratory functional data analysis from depth-based neighborhoods ". 16-18 December, London, **UK**.
- 10/2018 [Contributed Talk] *Coding Club UC3M "An introduction to Shiny II"*. Madrid, **Spain**.

- 06/2018 [Contributed Talk] *Coding Club UC3M*. “An introduction to Shiny as a teaching resource”. Madrid, **Spain**.
- 12/2017 [Invited Speaker] *CMStatistics 2017*: Tenth Computational and Methodological Statistics. “Prediction bands for functional data based on depth measures”. 16-18 December, London, **UK**.
- 11/2017 [Contributed Talk] *I SYSORM 2017*: Spanish Young Statisticians and Operational Researchers Meeting. “Prediction bands for functional data based on depth measures”. Granada, **Spain**
- 05/2017 [Internal Seminar] *Laboratory for Modeling and Scientific Computing MOX*, Department of Mathematics. University of Politecnico di Milano. “Prediction bands for functional data based on depth measures”. Milano, **Italy**.
- 06/2017 [Poster Session] *IWFOS 2017*: Fourth International Workshop on Functional and Operatorial Statistics. “Prediction bands for functional data based on depth measures”. A Coruña, **Spain**.
- 02/2017 [Local Committee] *II International Workshop on Advances in Functional Data Analysis*. Spanish Society of Statistics and Operational Research (SEIO). Universidad Carlos III de Madrid, **Spain**.
- 09/2016 [Contributed Talk] *XXXVI National Congress of Statistics and Operational Research*. Title of the talk: “Plots for Functional Data Forecasting”. Toledo, **Spain**.
- 02/2016 [Attended] *Small Area Estimation*. ICMAT, UC3M. Madrid, **Spain**.
- 02/2016 [Granted] *Statistical Learning Week*. Centre International de Recherche in Mathématiques (CIRM) in Marsella, **France**.
- 11/2015 [Local Committee] *I International Workshop on Advances in Functional Data Analysis*. Spanish Society of Statistics and Operational Research (SEIO). Universidad Carlos III de Madrid, **Spain**.
- 09/2015 [Attended] *Intensive Research Programme on Statistical Advances for Complex Data*. Mini course: Graph Theoretic Methods in Multivariate Statistics. Centre de Recerca Matemàtica (CRM). Universitat Autònoma de Barcelona, **Spain**.

Teaching

- 2019-2020 Statistics for Marketing and Media Communication. Master in Marketing and Media Communication, UC3M.
- 2018-2019 Statistics for Marketing and Media Communication. Master in Marketing and Media Communication, UC3M.
- 2017-2018 [Assistant] Statistics for Journalism and Media Communication. Double Degree in Journalism and Media Communication, UC3M.
- 2016-2017 [Assistant] Elemental Statistical Theory I, Statistics for Computer Engineer. Degree in Statistics and Business, UC3M.
- 2015-2016 [Assistant] Elemental Statistics Theory I and II. Degree in Business and Statistic, UC3M.
- 2014-2015 [Assistant] Statistics for Journalism. Degree in Journalism, UC3M. Material adaptation for student with functional diversity.
- 2013-2015 [Advisor Assistant] Final projects, Degree in Statistics and Business, UC3M. Topics on Text Mining and Statistical Learning.
- 2013-2015 [Assistant] Research Techniques, Statistical Inference Methods II, Sampling Methods. Degree in Business Administration, UC3M.