

Dae-Jin Lee

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Personal information

- DoB: November 21, 1980
- Contact information: IE Tower, Paseo de la Castellana, 259E, E-28046, Madrid, Spain
- ORCID: <https://orcid.org/0000-0002-8995-8535>

Research interests

My main areas of research are statistical modelling and computational statistics, with emphasis on semi-parametric and non-parametric regression. I work on penalized splines (P-splines, B-splines, tensor product smooths) and mixed-effects models (GLMMs, nonlinear mixed models), and their applications to complex data. The main applications of my work are related to: spatial and spatio-temporal modelling; disease mapping and epidemiology; time series and forecasting; joint models for longitudinal and survival data; patient-reported outcomes and health-related quality of life; ordinal and cost-sensitive classification (e.g. clinical severity); competing risks and recurrent events; statistical methods for sports injury research and load monitoring; pedestrian and crowd dynamics; environmental and ecological statistics; functional data analysis; and data visualization.

Experience

Full-time Assistant Professor (tenure-track) <i>IE University, School of Science and Technology, Madrid, Spain</i>	January 2023 - Current
Knowledge Transfer Unit - Data Science and AI coordinator <i>BCAM – Basque Center for Applied Mathematics, Bilbao, Spain</i>	June 2020 - December 2022
Researcher and Group Leader <i>BCAM – Basque Center for Applied Mathematics, Bilbao, Spain</i>	June 2014 - December 2022
Postdoctoral Fellow <i>CSIRO – Commonwealth Scientific and Industrial Research Organization, Clayton, VIC Australia</i>	Feb 2011 - Feb 2014
Lecturer <i>Department of Statistics, Universidad Carlos III de Madrid, Spain</i>	June 2010 - January 2011
Teaching assistant <i>Department of Statistics, Universidad Carlos III de Madrid, Spain</i>	September 2004 - June 2010

Courses taught (IE University)

- Probability and Statistics (Bachelor in Applied Mathematics), 6 ECTS. Course: 2023-2024 and 2025-2026.
- Statistical Modeling (Bachelor in Applied Mathematics), 6 ECTS. Course: 2024-2025 and 2025-2026.
- Computational Thinking for Data Management and Analysis (Bachelor in Data and Business Analytics; Executive DBA), 6 ECTS. Course: 2023-2024 and 2025-2026.
- Fundamentals of Data Analysis (Bachelor in Data and Business Analytics), 6 ECTS. Course: 2023-2024.
- Sports Analytics (Master in Business Analytics and Big Data; Master in Data Science), 3 ECTS. Course: 2023-2024 and 2025-2026.

- Big Data & Artificial Intelligence in Operations Management (Master in Data Science), 3 ECTS. Course: 2025-2026.
- Statistics for Data Science (Master in Data Science for Professionals), 3 ECTS. Course: 2023-2024 and 2025-2026.
- AI-Machine Learning Foundations (Dual degree in Philosophy, Politics, Law and Economics with Data and Business Analytics), 6 ECTS. Course: 2023-2024 and 2025-2026.

Education

PhD in Statistics

June 2010

Department of Statistics, University Carlos III de Madrid, Spain Thesis: 'Smoothing mixed models for spatial and spatio-temporal data' (supervised by Prof. María Durbán).

M.Sc. in Mathematical Engineering Program (area of Statistics)

October 2006

School of Engineering, University Carlos III de Madrid, Spain

B.Sc. Degree in Statistics

September 2004

University Carlos III de Madrid, Spain

B.Sc. Degree in Business Economics and Management

September 2002

University Carlos III de Madrid, Spain

Supervision of students

PhD. students (finished)

1. Diego Ayma Anza, Department of Statistics, Universidad Carlos III de Madrid, cum laude, December 2016. Topic: "Penalized Composite Link Models for spatial and spatio-temporal aggregated counts" (with M. Durbán).
2. Josu Najera Zuloaga, BCAM-Severo Ochoa, cum laude, December 2017. Universidad del País Vasco/Euskal Herriko Unibertsitatea (UPV/EHU). Title: "Multidimensional and longitudinal Beta-binomial regression for Health-Related Quality of Life outcomes" (with I. Arostegui).
3. Alba Carballo González, Department of Statistics, Universidad Carlos III de Madrid, cum laude, 2020. Topic: "Forecasting with Generalized Additive Models".
4. Leire Citores Martínez, AZTI-BCAM, July 2021. Universidad del País Vasco/Euskal Herriko Unibertsitatea (UPV/EHU). Title: "From habitat to management: a simulation framework for improving statistical methods in fisheries science" (with L. Ibaibarriaga, AZTI).
5. Lore Zumeta Olaskoaga, BCAM-Severo Ochoa, cum laude, February 2024. Universidad del País Vasco/Euskal Herriko Unibertsitatea (UPV/EHU). Title: "Statistical Modelling of Recurrent Events in Sports Injury Research with Applications to Football Injury Data".
6. Candidate: Ibon Martínez Arranz. Title of thesis: "Genetic Algorithms Applied to Translational Strategy in MASH. Learning from Mouse Models". University: University of the Basque Country (EHU/UPV-EHU), Facultad de Ciencia y Tecnología, Departamento de Matemáticas. PhD Programme: Matemáticas y Estadística. Date of Defence: 27 June 2025. Supervisors: Dae-Jin Lee (IE University), Jose María Mato (CIC Biogune).
7. María Alejandra Hernández Velandia. Title of thesis: "Novel P-Spline-based Approaches for Curve and Derivative Estimation in Longitudinal Growth Studies". University: University of the Basque Country (UPV/EHU), Departamento de Matemáticas. Date of Defence: 21 July 2025. Supervisors: Dae-Jin Lee (IE University), María Xosé Rodríguez Álvarez (Universidade de Vigo).

8. Cristina Galán García-Arcicollar. Title of thesis: *“Joint modeling with beta-binomial distribution for patient-reported outcomes and survival data”*. University: University of the Basque Country (EHU/UPV-EHU), Departamento de Matemáticas. Date of Defence: 24 July 2025. Supervisors: Dae-Jin Lee (IE University), Josu Najera Zuloaga (EHU).

PhD. students (ongoing)

- Candidate: Juan Carlos Espinosa. Title of thesis: *“Statistical Learning techniques for Early Warning Systems for Medical Health Records”*. University: Universidad del País Vasco/Euskal Herriko Unibertsitatea (UPV/EHU). PhD. Programme in Mathematics and Statistics. Date of Defence: expected November 2026. Supervisors: Dae-Jin Lee (IE University), Fernando García-García (BCAM - Basque Center for Applied Mathematics).
- Candidate: Ander García. Title of thesis: *“Pedestrian Flow Simulations with applications”*. University: Universidad del País Vasco/Euskal Herriko Unibertsitatea (UPV/EHU). PhD. Programme in Mathematics and Statistics. Date of Defence: expected May 2025. Supervisors: Dae-Jin Lee (IE University), Marco Ellero (BCAM - Basque Center for Applied Mathematics & Ikerbasque Foundation).

MSc. students

- Andreu Jiménez (BCAM-Università de Valencia), Msc. in Biostatistics (July 2015). Topic: *“Statistical modelling of Health Related Quality of Life measures for Colorectal Cancer with beta-binomial and quantile regression approaches”*.
- Antoni Castellà Frasquet (Università de Valencia), Msc. in Biostatistics (July 2016). Topic: *“Space-time modelling of daily fecundity of *Engraulis Encasicolus* in the Gulf of Biscay”*.
- Pedro Ángel Fidel (Università de Valencia), Msc. in Biostatistics (September 2016). Topic: *“Statistical Modelling of traffic data”*.
- Rut Rodríguez García (University of the Basque Country, UPV/EHU), Msc. in Mathematical Modelling, in Mathematical Research and in Statistical and Computer Sciences (September 2017). Topic: *“Validation of Probability of Default in Credit Risk Models”*.

Invited talks

- “Modelling latent trends from spatio-temporally grouped data using composite link mixed models”. Invited talk at “Joint TIES-GRASPA 2017 Conference on Climate and Environment”. Session on *“Spatio-temporal disease mapping: models and applications”*.
- “Beta-binomial multivariate regression modeling of patient-reported outcomes”, Invited talk at Special invited session Spanish Biometric Society at XXIXth International Biometric Conference, Barcelona, 8-13 July, 2018.
- “Disaggregation of spatial and spatio-temporal counts in epidemiology: A penalized composite link model approach”. Invited talk at ERCIM WG 2016 in Seville, session on *“Smoothing methods for complex data”*.
- “Spatial and spatio-temporal modeling of aggregated counts with applications in epidemiology: Methods and tools”. Invited talk at 61st RBras, Salvador Bahia, Brazil, 2016.
- “Multidimensional P-splines as mixed models”, ISNPS Meeting “Biosciences, Medicine, and novel Non-Parametric Methods”, Graz, Austria, 12-14 July, 2015.

Seminars and research visits

- Pontificia Católica de Santiago (Santiago, Chile), Universidad Técnica Federico Santa María (Valparaíso, Chile), Universidad de Antofagasta (Antofagasta, Chile), CIMFAV – Universidad

de Valparaíso (Valparaíso, Chile), Instituto de Estadística - Pontificia Universidad Católica de Valparaíso (Valparaíso, Chile), University of Glasgow (Glasgow, UK), School of Mathematics University of Manchester (Manchester, UK), Faculty of Economics at University of the Basque Country (Bilbao, Spain). Karolinska Institutet (Stockholm, Sweden), Queen Mary University London (London, UK), Erasmus Medical Centre (Rotterdam, The Netherlands).

Publications

Journal papers

1. Larrea, N., Lee, D.-J., Barrio, I., Arostegui, I., Millan, E., and Quintana, J.M. (2025). Evaluating short-term forecast accuracy across COVID-19 waves using penalized spline models. *International Journal of Medical Informatics*. doi: [10.1016/j.ijmedinf.2025.106079](https://doi.org/10.1016/j.ijmedinf.2025.106079).
2. Gago-Carro, I., Aldasoro, U., Lee, D.-J., and Merino, M. (2025). Hierarchical compromise optimization of ambulance locations under stochastic travel times. *Computers & Operations Research*. doi: [10.1016/j.cor.2025.107208](https://doi.org/10.1016/j.cor.2025.107208).
3. Aceña, V., Lancho, C., Martín De Diego, I., Moguerza, J.M., and Lee, D.-J. (2025). Dynamic disagreeing neighbors: A deep dive into complexity estimation. *Neurocomputing*. doi: [10.1016/j.neucom.2025.132076](https://doi.org/10.1016/j.neucom.2025.132076).
4. Cremaschi, A., Lee, D.-J., and Leonelli, M. (2025). Understanding support for AI regulation: A Bayesian network perspective. *International Journal of Engineering Business Management*. doi: [10.1177/18479790251383310](https://doi.org/10.1177/18479790251383310).
5. Espinosa-Moreno, J.C., Liu, G., García-García, F., Mas-Bilbao, N., García-Gutiérrez, S., Legarreta-Olabarrieta, M.J., and Lee, D.-J. (2025). Modelling in-hospital length of stay: A comparison of linear and ensemble models for competing risk analysis. *PLOS ONE*. doi: [10.1371/journal.pone.0322101](https://doi.org/10.1371/journal.pone.0322101).
6. García, A., Hernández-Delfin, D., Lee, D.-J., and Ellero, M. (2025). On the modeling of dynamic queue formation and decision-making in pedestrian dynamics simulations. *Simulation Modelling Practice and Theory*. doi: [10.1016/j.simpat.2025.103130](https://doi.org/10.1016/j.simpat.2025.103130).
7. Zumeta-Olaskoaga, L., Bender, A., and Lee, D.-J. (2025). Flexible modelling of time-varying exposures and recurrent events to analyse training load effects in team sports injuries. *Journal of the Royal Statistical Society Series C: Applied Statistics*. doi: [10.1093/jrssc/qlae059](https://doi.org/10.1093/jrssc/qlae059).
8. Bronte, O., García-García, F., Lee, D.-J., Urrutia, I., Uranga, A., Nieves, M., Martínez-Minaya, J., Quintana, J., Arostegui, I., Zalacain, R., Ruiz-Iturriaga, L., Serrano, L., Menéndez, R., Méndez, R., Torres, A., Cilloniz, C., and España, P. (2023). Impact of outdoor air pollution on severity and mortality in covid-19 pneumonia. *Science of The Total Environment*, 894:164877.
9. Galán-Arcicollar, C., Najera-Zuloaga, J., and Lee, D.-J. (2024). Patient-reported outcomes and survival analysis of chronic obstructive pulmonary disease patients: a two-stage joint modelling approach. *SORT*, 30 Setembre 2024, vol. 48, p. 155–182. <https://hdl.handle.net/2117/421585>. doi: [10.57645/20.8080.02.17](https://doi.org/10.57645/20.8080.02.17).
10. García, A., Hernández-Delfin, D., González, B., Garitaonandia, G., Lee, D.-J., and Ellero, M. (2024). Analysis of local density during football stadium access: Integrating pedestrian flow simulations and empirical data. *Physica A: Statistical Mechanics and its Applications*, 638:129635.
11. García-García, F., Lee, D.-J., España Yandiola, P. P., Urrutia Landa, I., Martínez-Minaya, J., Hayet-Otero, M., Nieves Ermecheo, M., Quintana, J. M., Menéndez, R., Torres, A., Zalacain Jorge, R., the COVID-19, and Group, A. P. W. (2024a). Cost-sensitive ordinal classification methods to predict

- SARS-CoV-2 pneumonia severity. *IEEE Journal of Biomedical and Health Informatics*, 28(5):2613–2623. doi: [10.1109/jbhi.2024.3363765](https://doi.org/10.1109/jbhi.2024.3363765).
12. García-García, F., Lee, D.-J., Mendoza-Garcés, F. J., and García-Gutiérrez, S. (2024b). Reliable prediction of difficult airway for tracheal intubation from patient preoperative photographs by machine learning methods. *Computer Methods and Programs in Biomedicine*, 248:108118.
 13. García-García, F., Lee, D.-J., Mendoza-Garcés, F. J., Irigoyen-Miró, S., Legarreta-Olabarrieta, M. J., García-Gutiérrez, S., and Arostegui, I. (2023). Automated location of orofacial landmarks to characterize airway morphology in anaesthesia via deep convolutional neural networks. *Computer Methods and Programs in Biomedicine*, 232:107428.
 14. García-García, F., Lee, D.-J., Nieves-Ermecheo, M., Bronte, O., España, P. P., Quintana, J. M., Menéndez, R., Torres, A., Ruiz Iturriaga, L. A., Urrutia, I., and Group, C.-. . A. P. W. (2024c). Obtaining patient phenotypes in sars-cov-2 pneumonia, and their association with clinical severity and mortality. *Pneumonia*, 16(1):12. doi: [10.1186/s41479-024-00132-0](https://doi.org/10.1186/s41479-024-00132-0).
 15. Hayet-Otero, M., García-García, F., Lee, D.-J., Martínez-Minaya, J., España Yandiola, P. P., Urrutia Landa, I., et al. (2023). Extracting relevant predictive variables for covid-19 severity prognosis: An exhaustive comparison of feature selection techniques. *PLOS ONE*, 18(4):e0284150.
 16. Hernández, M. A., Lee, D.-J., Rodríguez-Álvarez, M. X., and Durbán, M. (2023). Derivative curve estimation in longitudinal studies using P-splines. *Statistical Modelling*, 23(5-6):424–440.
 17. Martínez-Arranz, I., Alonso, C., Mayo, R., Mincholé, I., Mato, J. M., and Lee, D.-J. (2024). Genetic algorithms applied to translational strategy in metabolic-dysfunction associated steatohepatitis (mash). learning from mouse models. *Computer Methods and Programs in Biomedicine*, 255:108346.
 18. Márquez, M., Meza, C., Lee, D.-J., and De la Cruz, R. (2023). Classification of longitudinal profiles using semi-parametric nonlinear mixed models with P-splines and the SAEM algorithm. *Statistics in Medicine*. First published: 05 September 2023.
 19. Najera-Zuloaga, J., Lee, D.-J., Esteban, C., and Arostegui, I. (2024). Multidimensional beta-binomial regression model: A joint analysis of patient-reported outcomes. *Statistical Modelling*, 24(5):441–458.
 20. Reyes, J., Najera-Zuloaga, J., Lee, D.-J., Arrué, J., and Iriarte, Y. A. (2024). A bimodal extension of the beta-binomial distribution with applications. *Axioms*, 13(10).
 21. Zumeta-Olaskoaga, L., Weigert, M., Larruskain, J., Bikandi, E., Setuain, I., Lekue, J., Küchenhoff, H., and Lee, D.-J. (2023). Prediction of sports injuries in football: a recurrent time-to-event approach using regularized cox models. *ASTA Advances in Statistical Analysis*, 107(1):101–126.
 22. Najera-Zuloaga, J., Lee, D.-J., and Arostegui, I. (2018), “A beta-binomial mixed-effects model approach for analysing longitudinal discrete and bounded outcomes”. *Biometrical Journal* doi: [10.1002/bimj.201700251](https://doi.org/10.1002/bimj.201700251).
 23. Rodríguez-Álvarez, MX., Durbán, M., Lee, D.-J. and Eilers, P.H.C. (2018), “On the estimation of variance parameters in non-standard generalised linear mixed models: Application to penalised smoothing”. *Statistics and Computing*. DOI:<https://doi.org/10.1007/s11222-018-9818-2>.
 24. Miles, J., Applebee, C.J., Leboucher, P., López-Fernández, S., Lee, D.-J., Guarch, R., Ward, S., Parker, P.J., López, J.I., Larijani, B (2017), “Time Resolved Amplified FRET Identifies Protein Kinase B Activation State as a Marker for Poor Prognosis in Clear Cell Renal Cell Carcinoma” *BBA Clinical*, Volume 8, December 2017, Pages 97-102. <http://linkinghub.elsevier.com/retrieve/pii/S2214647417300363>

25. De La Cruz, R., Fuentes, C., Meza, C., Lee, D.-J., Arribas-Gil, A. (2017), "Predicting Pregnancy Outcomes Using Longitudinal Information: A Penalized Splines Mixed-Effects Model Approach" *Statistics in Medicine*. DOI: [10.1002/sim.7256](https://doi.org/10.1002/sim.7256).
26. Najera-Zuloaga, J., Lee, D.-J., and Arostegui, I. (2018), "Comparison of beta-binomial regression model approaches to analyze health related quality of life data in chronic obstructive pulmonary disease patients". *Statistical Methods in Medical Research*. <https://doi.org/10.1177/0962280217690413>.
27. Garmendia, J.M., Valle, M., Borja, A., Chust, G., Lee, D.-J., Rodríguez, J.G. and Franco J. (2016), "Effect of trampling and digging from shellfishing on *Zostera noltei* (Zosteraceae) intertidal seagrass beds" *Scientia Marina* 81(1) : 121-128.
28. Sánchez-González, M., Durbán, M., Lee, D.-J., Cañellas, I, Sixto, H. (2017), "Smooth additive mixed models for predicting aboveground biomass" *Journal of Agricultural, Biological and Environmental Statistics*, March 2017, Volume 22, Issue 1, pp 23-41. <http://link.springer.com/article/10.1007/s13253-016-0271-4>
29. Ayma, D., Durbán, M., Lee, D.-J., and Eilers, P.H.C. (2016) "Penalized composite link models for aggregated spatial count data: a mixed model approach", *Spatial Statistics*, Volume 17, August 2016, Pages 179-198 <http://www.sciencedirect.com/science/article/pii/S2211675316300318>
30. Lee, D.-J., and Toscas, P. (2015) "Flexible geostatistical modelling and risk assessment analysis of lead concentration levels of residential soil in the Coeur D'Alene River Basin", *Environmental and Ecological Statistics*, Vol. 22, Issue 3, pp 551-570.
31. Lee, D.-J., Zhu, Z., and Toscas, P. (2015) "Spatio-temporal functional data analysis for wireless sensor networks data" *Environmetrics*, Vol. 26, Issue 5, pp 354-362.
32. Rodríguez-Álvarez, MX., Lee, D.-J., Durbán, M., Eilers, P.H.C. and Kneib, T. (2015) "Fast smoothing parameter selection in multidimensional generalized P-splines: the SAP algorithm" *Statistics and Computing*, September 2015, Volume 25, Issue 5, pp 941-957.
33. Lee, D.-J., Durbán, M., and Eilers, P.H.C. (2013) "Efficient two-dimensional smoothing with P-spline ANOVA mixed models and nested bases" *Computational Statistics and Data Analysis* (2013), Vol. 61, May, Pages 22-37 <http://dx.doi.org/10.1016/j.csda.2012.11.013>
34. Lee, D.-J. and Durbán, M. (2011) "P-spline ANOVA-type interaction models for spatio-temporal smoothing" *Statistical Modelling*, Vol. 11, Issue 1, Pages 49-69. <http://journals.sagepub.com/doi/pdf/10.1177/1471082X1001100104>
35. Lee, D.-J. and Durbán, M. (2009) "Smooth-CAR Mixed Models for Spatial Count Data" *Computational Statistics and Data Analysis* (2009), Vol. 53, Issue 8, Pages 2968-2979 <http://dx.doi.org/10.1016/j.csda.2008.07.025>

Book chapters

- Durbán, M., Lee, D.-J., Aguilera-Morillo, M.C. and Aguilera, A.M. (2018), "From spatio-temporal smoothing to functional spatial regression: a penalized approach. Geostatistical Functional Data Analysis". Theory and Methods. *John Wiley & Sons* (to appear).
- García-Flores, R., Toscas, P., Lee, D.-J., Gavrilouk, O. and Robinson, G. (2012) "A Comparison of Methods for Solving the Sensor Location Problem" *Geostatistics Oslo 2012*. Volume 17 of the series Quantitative Geology and Geostatistics pp 531-542. http://dx.doi.org/10.1007/978-94-007-4153-9_43

In proceedings

- Lee, D.-J. Ayma, D., Durbán M. and Van de Kastele, J. (2016) *"Smooth composite link models for spatio-temporal disaggregation of epidemiological data"* in the Proceedings of the 31st International Workshop on Statistical Modelling, Rennes, France.
- Rodríguez-Álvarez, Durbán, M., Lee, D.-J., Eilers, P.H.C. and González, F. (2016) *"Spatio-temporal adaptive penalized splines with application to Neuroscience"* in the Proceedings of the 31st International Workshop on Statistical Modelling, Rennes, France.
- Carballo, A., Durbán, M., Lee, D.-J. and Eilers, P.H.C. (2016) *"The memory of extrapolating P-splines"* in the Proceedings of the 31st International Workshop on Statistical Modelling, Rennes, France.
- Najera-Zuloaga, J., Lee, D.-J. and Arostegui, I. (2016) *"Comparison of beta-binomial regression model approaches to analyze health related quality of life data"* in the Proceedings of the 31st International Workshop on Statistical Modelling, Rennes, France.
- Lee, D.-J. Ayma, D. and Durbán M. (2016) *"Spatial and spatio-temporal modeling of aggregated counts with applications in epidemiology: Methods and tools"* in 61st RBras, Salvador, Brazil.
- Lee, D.-J. and Durbán, M. (2015) *"Multidimensional P-splines as mixed models"* in ISNPS Meeting, Graz, Austria.
- Rodríguez-Álvarez, Eilers, P.H.C., Durbán, M. Lee, D.-J. (2015) *"Smoothing parameter selection in Penalized splines with overlapping penalties"* in ISNPS Meeting, Graz, Austria.
- Rodríguez-Álvarez, Durbán, M. Lee, D.-J., and Eilers, P.H.C. (2015) *"Fast estimation of multidimensional adaptive P-spline Models"* in the Proceedings in the 30th International Workshop on Statistical Modelling, Linz, Austria.
- Ayma, D., Durbán, M. and Lee, D.-J. (2014) *"Penalized Composite Link Mixed Models for Spatially Aggregated Data"* in the Proceedings in the 29th International Workshop on Statistical Modelling, Göttingen, Germany.
- Lee, D.-J. Zhu, Z. and Toscas (2013) *"Clustering based imputation for spatial-temporal wireless sensor network data"* in the Proceedings of the International Environmetrics Society (TIES), Anchorage, Alaska.
- Lee, D.-J. and Durbán, M. (2013) *"Spatio-temporal seasonal data modelling and forecasting with penalized smooth-ANOVA models"* in the Proceedings in the 28th International Workshop on Statistical Modelling, Palermo.
- Lee, D.-J. and Durbán, M. (2012). *"Seasonal modulation smoothing mixed models for time series forecasting"* Proceedings in the 27th International Workshop on Statistical Modelling, Prague, Czech Republic.
- García-Flores, R., Toscas P., Gavrilouk, O. Robinson, G. and Lee, D.-J. (2012) *"A Comparison of Methods for Solving the Sensor Location Problem"*. In proceeding of the 9th International Geostatistics Congress.
- Lee, D.-J. (2011) *"Flexible Spatio-Temporal Smoothing with Array Methods"* In proceeding of the International Statistical Institute (ISI) Conference in Dublin.
- Toscas, P., García-Flores R., and Lee, D.-J. (2011) *"Wireless Sensor Networks and the Statistical Sciences"*. In proceedings of the International Statistical Institute (ISI) Conference in Dublin.
- Lee, D.-J. and Durbán, M. (2010) *"Spatial point pattern analysis: a multidimensional P-spline approach"* Proceedings of the 25th International Workshop on Statistical Modelling, Glasgow, UK.

- Lee, D.-J. and Durbán, M. (2009) “*Nested B-spline Bases: an Efficient Method for Spatio- temporal Smoothing*” Proceedings of the 24th International Workshop on Statistical Modelling, Ithaca, NY, US.
- Lee, D.-J. and Durbán, M. (2008) “*P-spline ANOVA-Type Interaction Models for Spatio- temporal Smoothing*” Proceedings of the 23rd International Workshop on Statistical Modelling, pp. 315-320. Ed.: Eilers, P. H. C. In Utrecht, The Netherlands.
- Lee, D.-J. and Durbán, M. (2007) “*Smoothing Mixed Models for Overdispersed Spatial Count Data*” Proceedings in the 22nd International Workshop on Statistical Modelling, pp. 400-403. Ed.: del Castillo, J. Espinal, A. and Puig, P. In Barcelona, Spain.

Research projects

- Title: “*Semi-Parametric models for Human growth, Extremes and Recurrent Events in Survival analysis (SPHERES)*”; Funding Entity: Agencia Estatal de Investigación; Call: Proyectos de Generación de Conocimiento; Reference: PID2023-153222OB-I00; Duration: 01/09/2024 – 31/08/2027; PI: Dae-Jin Lee (IE University) and Manuele Leonelli (IE University); Team: 3 researchers; Quantity: 62.000 EUR.
- Title: “*New proposals for estimation, prediction and validation of semi-parametric models for the analysis of complex data with applications in Health and Climate Change (S3M1P4R)*”; Funding Entity: Agencia Estatal de Investigación; Call: Proyectos de Generación de Conocimiento; Reference: PID2020-115882RB-I00; Duration: 01/09/2021 – 31/08/2024 (extended until 27/2/2025); PI: Dae-Jin Lee (IE University); Team: 6 researchers; Quantity: 38.115 EUR.
- Title: “*BIOSTATNET 2025: Strengthening Excellence Research in Biostatistics at National and International level*”; Funding Entity: RED2024-153680-T; PI: David V. Conesa (Universitat de Valencia); Quantity: 15.000 EUR. <https://biostatnet.com/en>
- Title: *New Contributions In Semiparametric Regression And Applications In Agricultural Field Trials, Epidemiological Risks Assessment And Marine Ecology* (acronym: AFTERAM); Duration: 01/01/2018 - 31/12/2020; Principal Investigators: Dae-Jin Lee and María Xosé Rodríguez Álvarez; Role: co-PI; Reference: MTM2017-82379-R; Funding Entity: Spanish Ministry of Economy and Competitiveness (MINECO), funded by (AEI/FEDER, UE).
- Title: *Generalized Additive Models for Complex and High-dimensional Data*; Duration: 01/01/2015 - 31/12/2018; Principal Investigator: María Durbán; Role: research team; Reference: MTM2014-52184-P; Funding Entity: MINECO - Projects R&D&i - Excellence 2014.
- Title: *U.S. NIH grant for the Superfund Metal Mixtures, Biomarkers and Neurodevelopment project*; Subprogram: Optimizing Sampling and Statistical Analysis for Hazardous Waste Site Assessment; Reference: 1PA2ES016454-01A2; Principal Investigators: B. Coull and L. Ryan; Role: research team.
- Title: *Advanced statistical methods for high-dimensional data in business and economics*; Principal Investigator: Juan J Romo; Role: research team; Funding Entity: Ministerio de Educación y Ciencia; Period: 12/31/2005 – 12/31/2008.

Industrial Projects & R+D+i Collaborations

- Project Leader, Development of Statistical and Machine Learning Methods tools for professional sports injuries prediction. “Athletic Club Bilbao” Medical Services and BEAZ Bizkaia.
- Data Analytics Advisor, “Aryuna” platform, knowledge management and data analysis in basketball. Webpage: <http://temposs.es/aryuna>.

- Principal Investigator at BCAM, for the development of Data Analytics for the enterprise platform “SeniorGrowth” for predictive models for the quality of life of older people. Webpage: www.seniorgrowth.com
- Principal Investigator at BCAM, for the development of Data Analytics for the prediction of energy and hydrocarbon prices of “AVIA Energías”. Webpage: www.aviaenergias.es
- Principal Investigator at BCAM, “RIS3 Research Grant: Obesidad, epidemia global: Caracterización molecular y de parámetros dinámicos para el desarrollo de estrategias diagnósticas y terapéuticas personalizadas”, Source: Basque Government. Leader: Biocruces. Partners: Universidad del País Vasco (UPV/EHU), Fundación Azti, Biofisika-Basque Center for Biophysics. Budget: 1st 7,113.00 euros, 2nd year 13,532.09 euros and 3rd year 21,865.00 euros.
- Principal Investigator at BCAM, “BID3ABI - Big Data for RIS3”, Source: Basque Government, ELKARTEK 2016 programme. Leader: Tecnalia Research & Innovation. Partners: BCAM, Tecnalia, Vicomtech, Tekniker, Ikerlan, Ibermática, Lortek, Mondragon GEP, UPV/EHU. Budget: 21,511.00 euros.
- Principal Investigator at BCAM, “BID3A - Big Data para RIS3”, Source: Basque Government, ELKARTEK 2015 programme. Leader: Tecnalia Research & Innovation. Partners: BCAM, Vicomtech, Tekniker, Ikerlan, Ibermática, Lortek, Mondragon GEP, UPV/EHU. Budget: 12,488.00 euros.

Organization of scientific meetings

- Co-chair and member of the scientific committee of the 35th International Workshop on Statistical Modelling, July 2020 in Bilbao.
- Scientific committee member at the XVth Spanish Biometric Conference and Vth Ibero-American Biometric Meeting, Bilbao, Spain, 09/22/2015 to 09/25/2015.
- Organizer of the BiDAS (Bilbao Data Science Workshop), 1st, 2nd and 3rd Editions (2016–2018), Bilbao, Spain.

Refereeing services for scientific journals

- Journal of the Royal statistical Society - Series C (Applied Statistics), TEST, Computational Statistics and Data Analysis, Statistics and Computing, Statistical Modelling, Statistics in Medicine, Stochastic Environmental Research and Risk Assessment (SERRA), Biostatistics, Biometrical Journal, Sensors.

Memberships

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| • Statistical Modelling Society member of the board | 2023–present |
| • Secretary of the Spanish Biometric Society | 2022–present |
| • Member of the board of the Spanish Biometric Society | 2016–present |