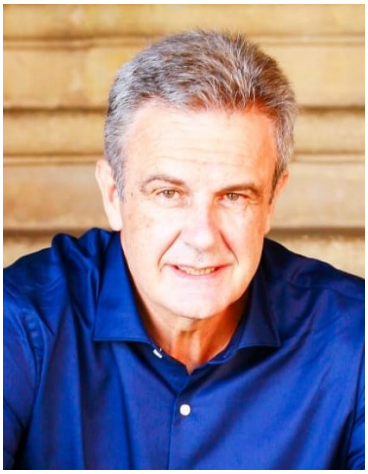
Prof. Pedro Larrañaga



A. General Information

Personal Information

Name:	Pedro Larrañaga
Birthdate:	June 4, 1958
Nationality:	Spanish
Address:	Department of Artificial Intelligence Technical University of Madrid Campus de Montegancedo, s/n 28660 Boadilla del Monte, Madrid, Spain
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Academic Positions

- Director of the ELLIS Unit Madrid since its foundation in 2022
- Leader of the Computational Intelligence Group since its foundation in 2010
- Full Professor at the Department of Artificial Intelligence, Technical University of Madrid, Spain (since 2007)
- Full Professor at the Department of Computer Science and Artificial Intelligence, University of the Basque Country, Spain (2004-2007)
- Associate Professor at the Department of Computer Science and Artificial Intelligence, University of the Basque Country, Spain (1998-2004)
- Leader of the Intelligent Systems Group since its foundation in 1996
- Assistant Professor at the Department of Computer Science and Artificial Intelligence, University of the Basque Country, Spain (1987-1998)
- Lecturer at the Department of Computer Science and Artificial Intelligence, University of the Basque Country, Spain (1985-1987)

Qualifications

- Habilitation for Full Professor in Computer Science, Madrid, Spain, 2003
- Ph.D. in Computer Science, *Structural Learning and Triangulation of Bayesian Networks by Genetic Algorithms*, University of the Basque Country, Spain, 1995. Awarded with the best Ph.D. thesis in Engineering in the University of the Basque Country
- M.Sc. in Mathematics, *Comparison Between Hierarchical Classification and by Factorial Analysis*, University of Valladolid, Spain, 1985
- Degree on Mathematics, specialization in Statistics, University of Valladolid, Spain, 1981

Others

- Five research periods (*sexenios*) awarded by the Ministry of Education, Culture and Sports
- Six teaching periods (*quinquenios*) awarded by the Technical University of Madrid
- (Unique) Knowledge transfer and innovation period awarded by the Ministry of Science, Innovation and Universities

Research Interest

My main interest areas are: *Bayesian networks* (learning from data, supervised and unsupervised classification, triangulation), *evolutionary computation* (genetic algorithms, estimation of distribution algorithms, mathematical modelling, applications in optimization), *bioinformatics* (analysis of microarrays of DNA, protein folding, prediction of the secondary structure of proteins, multiple alignment of sequences), *neuroscience* (supervised and unsupervised classification of neurons, early diagnostics methods in Parkinson and Alzheimer diseases, spatial distributions of synapsis, brain computer interface), *machine learning in industrie 4.0* (anomaly detection, predictive maintenance, real time diagnosis)

The CV in numbers (01 September 2023)

Publication Record

- Books: 6
- Edited Books: 3
- Journal Papers (ISI Web of Knowledge): 200
- Journal Papers (Non in ISI Web of Knowledge): 38
- Book Chapters: 34
- Lecture Notes: 46
- Conferences Publications: 92
- Technical Reports: 43
- Awards: 12 (personal) + 16 (jointly granted)

Research Projects

- Public Research Projects: 79
- Private Research Projects: 54

Teaching and Supervision

- Supervised Ph. D. Theses: 35
- Supervised Master Theses: 58
- Supervised Graduate Projects: 23

Service to the Academic Community

- Editoral Board: 3
- Editor of Proceedings: 1
- Editor of Journal Special Issues: 6
- Journal Referee: in 110 different journals
- Plenary Talks in Conferences: 31
- Organizer of Congress and Scientific Events: 12
- Program Committee Member: 175
- Session Chair of Conferences: 18
- Tutorials: 14
- PhD Dissertation Committees: 82
- Member of Committees-Panels Evaluating Projects and Research Careers: 39
- Software Registration: 1
- Patents: 2

Citations and h-index

- Web of Science (Publons)
  Citations: 11,264
  h-index: 43

- Scopus
  Citations: 12,883
  h-index: 45

- Google Scholar
  Citations: 27,961
  h-index: 66

B. Publication Record

Books

1. C. Bielza, P. Larrañaga (2021). *Data Driven Computational Neuroscience*. Cambridge University Press

2. P. Larrañaga, D. Atienza, J. Diaz-Rojo, C. Puerto-Santana, A. Ogbechie, C. Bielza (2018). *Industrial Applications of Machine Learning*. CRC Press (Chinesse version in 2023)

3. A. Ibañez, C. Bielza, P. Larrañaga (2011). *Productividad y Visibilidad Científica de los Profesores Funcionarios de las Universidades Públicas Españolas en el Área de Tecnologías Informáticas*. Fundación General de la U.P.M.

4. J. R. Aizpurua, X. Mendizabal, I. Rodriguez, P. Larrañaga, I. Azkune, J. Etxeberria (1985). *Matematika. Batxilergo Balioaniztun Bateratua 2*. Elkar

5. M. Martinez, X. Mendizabal, I. Rodriguez, I. Eguren, P. Larrañaga, R. Emparantza, J. R. Aizpurua (1984). *Matematika. Batxilergo Balioaniztun Bateratua 1*. Elkar

6. Elhuyar Matematika taldea (1984). *Matematika L.H. 2–2*. Elkar

Edited Books

1. J. A. Lozano, P. Larrañaga, I. Inza, E. Bengoetxea (2005). *Towards a New Evolutionary Computation. Advances in Estimation of Distribution Algorithms*. Springer Verlag

2. P. Larrañaga, J. A. Lozano, J. M. Peña, I. Inza (2003). *Probabilistic Graphical Models for Classification*. Ruder Bošković Institute

3. P. Larrañaga, J. A. Lozano (2002). *Estimation of Distribution Algorithms. A New Tool for Evolutionary Computation*. Kluwer Academic Publishers

Journal Papers (ISI Web of Knowledge)

1. P. Larrañaga, C. Bielza (2023). Estimation of distribution algorithms in machine learning: A survey. *IEEE Transactions on Evolutionary Computation*, in press

2. C. Puerto-Santana, P. Larrañaga, C. Bielza (2023). Feature subset selection in data-stream environments using asymmetric hidden Markov models and novelty detection. *Neurocomputing*, in press

3. V.P. Soloviev, C. Bielza, P. Larrañaga (2023). Semiparametric estimation of distribution algorithms for continuous optimization. *IEEE Transactions on Evolutionary Computation*, in press

4. C. Villa-Blanco, C. Bielza, P. Larrañaga(2023). Feature subset selection for data and feature streams: A review. *Artificial Intelligence Review*, in press

5. C. Puerto-Santana, P. Larrañaga, C. Bielza (2022). Feature saliencies in asymmetric hidden Markov models. *IEEE Transactions on Neural Networks and Learning Systems*, in press

6. G. Valverde, D. Quesada, P. Larrañaga, C. Bielza (2023). Causal reinforcement learning based on Bayesian networks applied to industrial settings. *Engineering Applications of Artificial Intelligence*, 125, 106657

7. E. Valero-Leal, C. Bielzaa, P. Larrañaga, S. Renooij (2023). Using MAP-independence to find defeasible reasoning-based explanations in Bayesian networks. *International Journal of Approximate Reasoning*, 160, 108965

8. C. Villa-Blanco, A. Bregoli, C. Bielza, P. Larrañaga, F. Stella (2023). Constraint-based and hybrid structure learning of multidimensional continuous-time Bayesian network classifiers. *International Journal of Approximate Reasoning*, 159, 108945

9. J.L. Moreno-Rodríguez, P. Larrañaga, C. Bielza (2023). NeuroSuites: An online platform for running neuroscience, statistical and machine learning tools. *Frontiers in Neuroinformatics*, 17, 1092967

10. V.P. Soloviev, P. Larrañaga, C. Bielza (2023). Quantum approximate optimization algorithm for Bayesian network structure learning. *Quantum Information Processing*, 22(19), 1-28

11. D. Quesada, C. Bielza, P. Fontán, P. Larrañaga (2022). Piecewise forecasting of nonlinear time series with model tree dynamic Bayesian networks. *International Journal of Intelligent Systems*, 37, 9108-9137

12. D. Atienza, C. Bielza, P. Larrañaga (2022). PyBNesian: An extensible Python package for Bayesian networks. *Neurocomputing*, 504, 204-209

13. V.P. Soloviev, P. Larrañaga, C. Bielza (2022). Estimation of distribution algorithms using Gaussian Bayesian networks to solve industrial optimization problems constrained by environment variables. *Journal of Combinatorial Optimization*, 44, 1077-1098

14. C. Puerto-Santana, C. Bielza, J. Diaz-Rozo, G. Ramirez-Gargallo, F. Mantovani, G. Virumbrales, J. Labarta, Pedro Larrañaga (2022). Asymmetric HMMs for online ball-bearing health assessments, *IEEE Internet of Things Journal*, 9(20), 20160-20177

15. P. Laccourreye, C. Bielza, Pedro Larrañaga (2022). Explainable machine learning for longitudinal multi-omic microbiome. *Mathematics*, 10, 1994

16. D. Atienza, P. Larrañaga, C. Bielza (2022). Rejoinder on: Hybrid semiparametric Bayesian networks. *TEST*, 31, 344-347

17. D. Atienza, P. Larrañaga, C. Bielza (2022). Hybrid semiparametric Bayesian networks. *TEST*, 31, 299-327

18. C. Villa-Blanco, C. Bielza, P. Larrañaga (2022). Feature subset selection for data and feature streams: A review. *Artificial Intelligence Review*, `https://doi.org/10.1007/s10462-023-10546-9`

19. F. Rodriguez-Sanchez, C. Bielza, and P. Larrañaga (2022). Multi-partition clustering of mixed data with Bayesian networks. *International Journal of Intelligent Systems*, 37(3), 2188-2218

20. D. Atienza, C. Bielza, and P. Larrañaga (2022). Semiparametric Bayesian networks. *Information Sciences*, 584, 564-582

21. C. Villa-Blanco, P. Larrañaga, and C. Bielza (2021). Multi-dimensional continuous time Bayesian network classifiers. *International Journal of Intelligent Systems*, 36(12), 7839-7866

22. D. Quesada, G. Valverde, P. Larrañaga, and C. Bielza (2021). Long-term forecasting of multivariate time series in industrial furnaces with dynamic Gaussian Bayesian networks. *Engineering Applications of Artificial Intelligence*, 103, 104301

23. M. Benjumeda, Y.-l. Tan, K. A. González-Otárula, D. Chandramohan, E. F. Chang, J. A. Hall, C. Bielza, P. Larrañaga, E. Kobayashi, R. C. Knowlton (2021). Patient specific prediction of temporal lobe epilepsy surgical outcomes. *Epilepsia*, 62(9), 2113-2122

24. C. Puerto-Santana, P. Larrañaga, and C. Bielza (2021). Autoregressive asymmetric linear Gaussian hidden Markov models. *IEEE Transactions on Pattern Analysis and Machine Intelligence*, 44(9), 4642-4658

25. B. Mihaljevic, C. Bielza and P. Larrañaga (2021). Bayesian networks for interpretable machine learning and optimization. *Neurocomputing*, 456, 648-665

26. F. Rodriguez-Sanchez, C. Rodriguez-Blazquez, C. Bielza, P. Larrañaga, D. Weintraub, P. Martinez-Martin, A. Rizos, A. Schrag, K. Chaudhuri (2021). Identifying Parkinson's disease subtypes with motor and non-motor symptoms via model-based multi-partition clustering. *Scientific Reports* 11(1), 1-10

27. B. Mihaljevic, P. Larrañaga, and C. Bielza (2021). Comparing the electrophysiology and morphology of human and mouse layer 2/3 pyramidal neurons with Bayesian networks. *Frontiers in Neuroinformatics*, 15, Article 580873

28. S. Gil-Begue, C. Bielza, P. Larrañaga (2021). Multi-dimensional Bayesian network classifiers: A survey. *Artificial Intelligence Review*, 54(1), 519–559

29. M. Michiels, P. Larrañaga, and C. Bielza (2020). BayeSuites: An open web framework for massive Bayesian networks focused on neuroscience. *Neurocomputing*, 428, 166-181

30. F. Rodriguez-Sanchez, P. Larrañaga, and C. Bielza (2020). Incremental learning of latent forests. *IEEE Access*, 8, 224420-224432

31. B. Mihaljevic, P. Larrañaga, R. Benavides-Piccioni and J. DeFelipe, and C. Bielza (2020). Comparing basal dendrite branches in human and mouse hippocampal CA1 pyramidal neurons with Bayesian networks. *Scientific Reports*, 10, Article 18592

32. D. Atienza, C. Bielza, J. Diaz-Rozo, and P. Larrañaga (2020). Efficient anomaly detection in a laser-surface heat-treatment process via laser-spot tracking. *IEEE/ASME Transactions on Mechatronics*, 26(1), 405-415

33. I. Córdoba-Sánchez, G. Varando, C. Bielza, P. Larrañaga (2020). On generating random Gaussian graphical models. *International Journal of Approximate Reasoning*, 125, 240-250

34. I. Cordoba, C. Bielza, P. Larrañaga and G. Varando (2020). Sparse Cholesky rcovariance parametrization for recovering latent structure in ordered data. *IEEE Access*, 8, 154614-154624

35. R. Yuste, M. Hawrylycz, N. Aalling, A. Aguilar-Valles, D. Arendt, R. Armananzas, G. Ascoli, T. Bergmann, C. Bielza, V. Bokharaie, I. Bystron, M. Capogna, Y. Chang, C. de Kock, A. Clemens, J. DeFelipe, S. Dos Santos, K. Dunville, D. Feldmeye, R. Fiath, G. Fishell, A. Foggetti, X. Gao, P. Ghaderi, N. Goriounova, O. Gunturkun, K. Hagihara, V. J. Hall, M. Helmstaedter, S. Herculano-Houzel, M. Hilscher, H. Hirase, J. Hjerling-Leffler, R. Hodge, Z. J. Huang, R. Huda, Y. Juan, K. Khodosevich, O. Kiehn, H. Koch, E. Kuebler, M. Kühnemund, P. Larrañaga, B. Lelieveldt, E. L. Louth, J. Lui, H. Mansvelder, O. Marin, J. Martinez-Trujillo, A. Mohapatra, H. Moradi, H. Mungub, M. Nedergaard, P. Némec, N. Ofer, U. Pfisterer, S. Pontes, W. Redmond, J. Rossier, J. Sanes, R. Scheuermann, E. Serrano-Saiz, P. Somogyi, J. F. Steiger, G. Tamás, A. Tolias, M. A. Tosches, M. Turrero-Garcia, C. Wozny, T. Wuttke, L. Yong, H. Zeng, E. S. Lein (2020). A community-based transcriptomics classification and nomenclature of neocortical cell types. *Nature Neuroscience*, 23, 1456–1468

36. J. Diaz-Rozo, C. Bielza, P. Larrañaga (2020). Machine-tool condition monitoring with Gaussian mixture models-based dynamic probabilistic clustering. *Engineering Applications of Artificial Intelligence*, 89, Article 103434

37. I. Cordoba, C. Bielza and P. Larrañaga (2020). A review of Gaussian Markov models for conditional independence. *Journal of Statistical Planning and Inference*, 206, 127-144

38. B. Mihaljevic, R. Benavides-Piccioni, C. Bielza, P. Larrañaga, and J. DeFelipe (2019). Classification of GABAergic interneurons by leading neuroscientists. *Scientific Data*, 6, Article 221

39. I. Leguey, C. Bielza, and P. Larrañaga (2019). Circular Bayesian classifiers using wrapped Cauchy distributions. *Data and Knowledge Engineering*, 122, 101-115

40. S. Luengo-Sanchez, P. Larrañaga and C. Bielza (2019). A directional-linear Bayesian network and its application for clustering and simulation of neural somas. *IEEE Access*, 7(1), 69907-69921

41. M. Benjumeda, S. Luengo-Sanchez, P. Larrañaga, and C. Bielza (2019). Tractable learning of Bayesian networks from partially observed data. *Pattern Recognition*, 91, 190-199

42. P. Fernandez, C. Bielza, and P. Larrañaga (2019). Random forests for regression as a weighted sum of k-potential nearest neighbors. *IEEE Access*, 7 (1), 25660-25672

43. I. Leguey, P. Larrañaga, C. Bielza, and S. Kato (2019). A circular-linear dependence measure under Johnson–Wehrly distributions and its application in Bayesian networks. *Information Sciences*, 486, 240-253

44. M. Benjumeda, C. Bielza, and P. Larrañaga (2019). Learning tractable Bayesian networks in the space of elimination orders. *Artificial Intelligence*, 274, 66-90

45. B. Mihaljevic, P. Larrañaga, and C. Bielza (2018). `bnclassify`: Learning Bayesian network classifiers. *R Journa*l, 10(2), 455-468

46. L. Anton-Sanchez, F. Effenberger, C. Bielza, P. Larrañaga, H. Cuntz (2018). A regularity index for dendrites - local statistics of a neuron's input space. *PLOS Computational Biology*, 14(11), e1006593

47. B. Mihaljevic, P. Larrañaga, R. Benavides-Piccione, S. Hill, J. DeFelipe, and C. Bielza (2018). Towards a supervised classification of neocortical interneuron morphologies, *BMC Bioinformatics*, 19(1), 511

48. S. Luengo-Sanchez, I. Fernaud-Espinosa, C. Bielza, R. Benavides-Piccione, P. Larrañaga, J. DeFelipe (2018). 3D morphology-based clustering and simulation of human pyramidal cell dendritic spines. *PLOS Computational Biology*, 14(6), e1006221

49. J. Diaz-Rozo, C. Bielza, P. Larrañaga (2018). Clustering of data streams with dynamic Gaussian mixture models. An IoT application in industrial processes. *IEEE Internet of Things Journal*, 5(5), 3533-3547

50. G. Varando, R. Benavides-Piccione, A. Muñoz, A. Kastanauskaite, C. Bielza, P. Larrañaga, J. DeFelipe (2018). MultiMap: A tool to automatically extract and analyze spatial microscopic data from large stacks of confocal microscopy images. *Frontiers in Neuroanatomy*, 12, Article 37

51. M. Benjumeda, C. Bielza, and P. Larrañaga (2018). Tractability of most probable explanations in multidimensional Bayesian network classifiers. *International Journal of Approximate Reasoning*, 93, 74-87

52. J. Mu, K.R. Chaudhuri, C. Bielza, J. de Pedro-Cuesta, P. Larrañaga and P. Martinez-Martin (2017). Parkinson's disease subtypes from cluster analysis of motor and non-motor symptoms. *Frontiers in Aging Neuroscience*, 9, Article 301

53. L. Anton-Sanchez, P. Larrañaga, R. Benavides-Piccione, I. Fernaud-Espinosa, J. Felipe, and C. Bielza (2017). Three-dimensional spatial modeling of spines along dendritic networks in human cortical pyramidal neurons. *PLoS ONE*, 12, e0180400

54. L. Anton-Sanchez, C. Bielza, and P. Larrañaga (2017). Network design through forests with degree- and role-constrained minimum spanning trees. *Journal of Heuristics*, 23(1), 31-51

55. L. Rodriguez-Lujan, P. Larrañaga, C. Bielza (2017). Frobenius norm regularization for the multivariate von Mises distribution. *International Journal of Intelligent Systems*, 32(2), 153-176

56. L. Anton-Sanchez, C. Bielza, P. Larrañaga, J. Felipe (2016). Wiring economy of pyramidal cells in the juveline rat somatosensory cortex. *PLoS ONE*, 11(11), e0165915

57. L. Anton-Sanchez, C. Bielza, R. Benavides-Piccione, J. Felipe, P. Larrañaga (2016). Dendritic and axonal wiring optimization of cortical GABAergic interneurons. *Neuroinformatics*, 14(4), 453-464

58. H. Borchani, P. Larrañaga, J. Gama, C. Bielza (2016). Mining multi-dimensional concept-drifting data streams using Bayesian network classifiers. *Intelligent Data Analysis*, 20(2), 257-280

59. P. Fernandez-Gonzalez, R. Benavides-Piccione, I. Leguey, C. Bielza, P. Larrañaga, J. DeFelipe (2016). Dendritic branching angles of pyramidal neurons of the human cerebral cortex. *Brain Structure and Function*, 222(4), 1847-1859

60. I. Leguey, C. Bielza, P. Larrañaga, A. Kastanauskaite, C. Rojo, R. Benavides-Piccione, and J. DeFelipe (2016). Dendritic branching angles of pyramidal cells across layeres of the juvenile rat somatosensory cortex. *Journal of Comparative Neurology*, 524(13), 2567–2576

61. F. Leitner, C. Bielza, S. L. Hill, P. Larrañaga (2016). Data publications correlate with citation impact. *Frontiers in Neuroscience*, 10, Article 419

62. C. Rojo, I. Leguey, A. Kastanauskaite, C. Bielza, P. Larrañaga, J. DeFelipe, R. Benavides-Piccione (2016). Laminar differences in dendritic structure of pyramidal neurons in juvenile rat somatosensory cortex. *Cerebral Cortex*, 26(6), 2811-2822

63. G. Varando, C. Bielza,P. Larrañaga (2016). Decision functions for chain classifiers based on Bayesian networks for multi-label classification. *International Journal of Approximate Reasoning*, 68, 164-178,

64. Luengo-Sanchez, S., C. Bielza, R. Benavides-Piccione, I. Fernaud-Espinosa, J. DeFelipe, P. Larrañaga (2015). A univocal definition of the neuronal soma morphology using Gaussian mixture models. *Frontiers in Neuroanatomy*, 9, Article 137

65. Olazarán, J., M. Valentí, B. Frades, M. A. Zea-Sevilla, M. Ávila-Villanueva, M. A. Fernández-Blázquez, M. Calero, J. L. Dobato, J. A. Hernández-Tamames, B. León-Salas, L. Aguera-Ortiz, J. López-Álvarez, P. Larrañaga, C. Bielza, J. Álvarez-Linera, P. Martinez-Martin (2015). The Vallecas Project: a cohort to identify early markers and mechanisms of Alzheimer's disease. *Frontiers in Aging Neuroscience*, 7, Article 181

66. H. Borchani, G. Varando, C. Bielza, P. Larrañaga (2015). A survey on multi-output regression. *WIREs Data Mining and Knowledge Discovery*, 5, 216-233

67. A. Ibáñez, R. Armañanzas, C. Bielza, P. Larrañaga (2015). Genetic algorithms and Gaussian Bayesian networks to uncover the predictive core set of bibliometric indices. *Journal of the American Society for Information Science and Technology*, 67(7), 1703—1721

68. H. Karshenas, C. Bielza, P. Larrañaga (2015). Interval-based ranking in noisy evolutionary multi-objective optimization. *Computational Optimization and Applications*, 61(2), 517–555

69. P.L. López-Cruz, C. Bielza, P. Larrañaga (2015). Directional naive Bayes classifiers. *Pattern Analysis and Applications*, 18, 225-246

70. A. R. Masegosa, R. Armañanzas, M.M. Abad-Grau, V. Potenciano, S. Moral, P. Larrañaga, C. Bielza, F. Matesanz (2015). Discretization of expression quantitative trait loci in association analysis between genotypes and expression data. *Current Bioinformatics*, 10(2), 144-164

71. B. Mihaljević, R. Benavides-Piccione, L. Guerra, J. DeFelipe, P. Larrañaga, C. Bielza (2015). Classifying GABAergic interneurons with semi-supervised projected model-based clustering. *Artificial Intelligence in Medicine*, 65(1), 49-59

72. B. Mihaljević, R. Benavides-Piccione, C. Bielza, J. DeFelipe, P. Larrañaga, (2015). Bayesian network classifiers for categorizing cortical GABAergic interneurons. *Neuroinformatics*, 13(2), 193-208

73. G. Varando, P.L. López-Cruz, T. Nielsen, P. Larrañaga, C. Bielza (2015). Conditional density approximations with mixtures of polynomials. *International Journal of Intelligent Systems*, 30(3), 236-264

74. G. Varando, C. Bielza,P. Larrañaga (2015). Decision boundary for discrete Bayesian network classifiers. *Journal of Machine Learning Research*, 16, 2725–2749

75. L. Anton-Sanchez, C. Bielza, A. Merchán-Pérez, J.R. Rodríguez, J. DeFelipe, P. Larrañaga (2014). Three-dimensional distribution of cortical synapses: A replicated point pattern-based analysis. *Frontiers in Neuroanatomy*, 8, Article 85

76. C. Bielza, P. Larrañaga (2014). Discrete Bayesian network classifiers: A survey. *ACM Computing Surveys*, 47(1), Article 5

77. C. Bielza, P. Larrañaga (2014). Bayesian networks in neuroscience: A survey. *Frontiers in Computational Neuroscience*, 8, Article 131

78. C. Bielza, R. Benavides-Piccione, P.L. López-Cruz, P. Larrañaga, J. DeFelipe (2014). Branching angles of pyramidal cell dendrites follow common geometrical design principles in different cortical areas. *Scientific Reports*, 4, Article 5909

79. L. Guerra, C. Bielza, V. Robles, P. Larrañaga, P. (2014). Semi-supervised projected model-based clustering. *Data Mining and Knowledge Discovery*, 28(4), 882-917

80. A. Ibáñez, C. Bielza, P. Larrañaga (2014). Cost-sensitive selective naive Bayes classifiers for predicting the increase of the h-index for scientific journals. *Neurocomputing*, 135(5), 45-52

81. A. Larrañaga, C. Bielza, P. Pongrácz, T. Faragó, A. Bálint, P. Larrañaga (2015). Comparing supervised learning methods for classifying sex, age, context and individual Mudi dogs from barking. *Animal Cognition*, 18(2), 405-421

82. P.L. López-Cruz, P. Larrañaga, J. DeFelipe, C. Bielza (2014). Bayesian network modeling of the consensus between experts: An application to neuron classification. *International Journal of Approximate Reasoning*, 55(1), 3-22

83. P.L. López-Cruz, C. Bielza, P. Larrañaga (2014). Learning mixtures of polynomials of multidimensional probability densities from data using B-spline interpolation. *International Journal of Approximate Reasoning*, 55, 989-1010

84. A. Merchan-Perez, R. Rodríguez, S. Gonzalez, V. Robles, J. DeFelipe, P. Larrañaga, C. Bielza (2014). Three-dimensional spatial distribution of synapses in the neocortex: A dual-beam electron microscopy study. *Cerebral Cortex*, 24, 1579-1588

85. B. Mihaljević, C. Bielza , R. Benavides-Piccione, J. DeFelipe, P. Larrañaga, (2014). Multi-dimensional classification of GABAergic interneurons with Bayesian network-modeled label uncertainty. *Frontiers in Computational Neuroscience*, 8, Article 150

86. J. Morales, R. Benavides-Piccione, M. Dar, I. Fernaud, A. Rodríguez, L. Anton-Sanchez, P. Larrañaga, C. Bielza, J. DeFelipe, R. Yuste (2014). Random positioning of dendritic spines in the human cerebral cortex. *Journal of Neuroscience*, 34(30), 10078-10084

87. J. Read, C. Bielza, P. Larrañaga (2014). Multi-dimensional classification with super-classes. *IEEE Transactions on Knowledge and Data Engineering*, 26(7), 1720-1733

88. H. Karshenas, R. Santana, C. Bielza, P. Larrañaga, (2014). Multi-objective estimation of distribution algorithms based on joint modeling of objectives and variables. *IEEE Transactions on Evolutionary Computation*, 18(4), 519-542

89. L.E. Sucar, C. Bielza, E.F. Morales, P. Hernandez-Leal, J.H. Zaragoza, P. Larrañaga (2014). Multi-label classification with Bayesian network-based chain classifiers. *Pattern Recognition Letters*, 41, 14-22

90. R. Santana, L.M. McGarry, C. Bielza, P. Larrañaga, R. Yuste (2013). Classification of neocortical interneurons using affinity propagation. *Frontiers in Neural Circuits*, 7, Article 185

91. J.L. Flores, I. Inza, P. Larrañaga, B. Calvo (2013). A new measure for gene expression biclustering based on non-parametric correlation. *Computer Methods and Programs in Biomedicine*, 112(3), 367–397

92. R. Armañanzas, L. Alonso-Nanclares, J. DeFelipe-Oroquieta, A. Kastanauskaite, R.G. de Sola, J. DeFelipe, C. Bielza, P. Larrañaga, P. (2013). Machine learning approach for the outcome prediction of temporal lobe epilepsy surgery. *PLoS ONE*, 8(4):e62819

93. R. Armañanzas, C. Bielza, K.R. Chaudhuri, P. Martínez-Martín, P. Larrañaga (2013). Unveiling relevant non-motor Parkinson's disease severity symptoms using a machine learning approach. *Artificial Intelligence in Medicine*, 58(3), 195-202

94. C. Bielza, J.A. Fernández del Pozo, P. Larrañaga, P. (2013). Parameter control of genetic algorithms by learning and simulation of Bayesian Networks. A case study for the optimal ordering of tables. *Journal of Computer Science and Technology*, 28 (4), 720-731

95. J. DeFelipe, P. L. López-Cruz, R. Benavides-Piccione, C. Bielza, P. Larrañaga, S. Anderson, A. Burkhalter, B. Cauli, A. Fairén, D. Feldmeyer, G. Fishell, D. Fitzpatrick, T. F. Freund, G. González-Burgos, S. Hestrin, S. Hill, P. R. Hof, J. Huang, E. G. Jones, Y. Kawaguchi, Z. Kisvárday, Y. Kubota, D. A. Lewis, O. Marín, H. Markram, C. J. McBain, H. S. Meyer, H. Monyer, S. B. Nelson, K. Rockland, J. Rossier, J. L.R. Rubenstein, B. Rudy, M. Scanziani, G. M. Shepherd, C. C. Sherwood, J. F. Staiger, G. Tamás, A. Thomson, Y. Wang, R. Yuste, G. A. Ascoli (2013). New insights in the classification and nomenclature of cortical GABAergic interneurons. *Nature Review Neuroscience*, 14(3), 202-216

96. R. Santana, R. Armañanzas, C. Bielza, P. Larrañaga (2013). Network measures for information extraction in evolutionary algorithms. *International Journal of Computational Intelligence Systems*, 6(6), 1163-1188

97. A. Ibañez, P. Larrañaga, C. Bielza (2013). Cluster methods for assessing research performance: Exploring Spanish computer science. *Scientometrics*, 97, 571-600

98. D. Vidaurre, C. Bielza, P. Larrañaga (2013). A survey of L_1 regression. *International Statistical Review*, 81(3), 361-387

99. D. Vidaurre, C. Bielza, P. Larrañaga (2013). Sparse regularized local regression. *Computational Statistics and Data Analysis*, 62, 122-135

100. P. Larrañaga, H. Karshenas, C. Bielza, R. Santana (2013). A review on evolutionary algorithms in Bayesian network learning and inference tasks. *Information Sciences*, 233, 109-125

101. D. Vidaurre, C. Bielza, P. Larrañaga (2013). Classification of neural signals from sparse autoregressive features. *Neurocomputing*, 111, 21-26

102. D. Vidaurre, C. Bielza, P. Larrañaga (2013). An L1-regularized naive Bayes-inspired classifier for discarding redundant predictors. *International Journal on Artificial Intelligence Tools*, 22(4), 1350019

103. H. Borchani, C. Bielza, C. Toro, P. Larrañaga (2013). Predicting human immunodeficiency virus inhibitors using multi-dimensional Bayesian network classifiers. *Artificial Intelligence in Medicine*, 57(3), 219-229

104. A. Ibáñez, C. Bielza, P. Larrañaga (2013). Relationship among research collaboration, number of documents and number of citations. A case study in Spanish computer science production in 2000-2009. *Scientometrics*, 95, 689-716

105. M. García-Torres, R. Armañanzas, C. Bielza, P. Larrañaga (2013). Comparison of metaheuristic strategies for peakbin selection in proteomic mass spectrometry data. *Information Sciences*, 222, 229-246

106. H. Karshenas, R. Santana, C. Bielza, P. Larrañaga (2013). Regularized continuous estimation of distribution algorithms. *Applied Soft Computing*, 13(5), 2412-2432

107. A. Ibáñez, C. Bielza, P. Larrañaga (2013). Análisis de la actividad científica de las universidades públicas españolas en el área de las tecnologías informáticas. *Revista Española de Documentación Científica*, 36(1): e002

108. D. Vidaurre, M. van Gerven, C. Bielza, P. Larrañaga, T. Heskes (2013). Bayesian sparse partial least squares. *Neural Computation*, 25(12), 3318-3339

109. B. Calvo, I. Inza, P. Larrañaga, J.A. Lozano (2012). Wrapper positive Bayesian network classifiers. *Knowledge and Information Systems*, 33(3), 631–654

110. R. Santana, C. Bielza, P. Larrañaga (2012). Conductance interaction identification by means of Boltzmann distribution and mutual information analysis in conductance-based neuron models. *BMC Neuroscience*, 13(Suppl 1: P100

111. P. Larrañaga, H. Karshenas, C. Bielza, R. Santana (2012). A review on probabilistic graphical models in evolutionary computation. *Journal of Heuristics*, 18(5), 795-819

112. D. Vidaurre, E.E. Rodríguez, C. Bielza, P. Larrañaga, P. Rudomin (2012). A new feature extraction method for signal classification applied to cord dorsum potential detection. *Journal of Neural Engineering*, 9(5), 056009

113. M. Dueñas, M. Santos, J.F. Aranda, C. Bielza, A.B. Martínez-Cruz, C. Lorz, M. Taron, E.M. Ciruelos, J.L. Rodríguez-Peralto, M. Martín, P. Larrañaga, J. Dahabreh, G.P. Stathopoulos, R. Rosell, J.M. Paramio, R. García-Escudero (2012). Mouse p53-deficient cancer models as platforms for obtaining genomic predictors of human cancer clinical outcomes. *PLoS ONE*, 7(8): e42494

114. H. Borchani, C. Bielza, P. Martínez-Martín, P. Larrañaga (2012). Markov blanket-based approach for learning multi-dimensional Bayesian network classifiers: An application to predict the European quality of life-5Dimensions (EQ-5D) from the 39-item Parkinson's disease questionnaire (PDQ-39).*Journal of Biomedical Informatics*, 45(6), 1175-1184

115. D.A. Morales, Y. Vives-Gilabert, B. Gómez-Ansón, E. Bengoetxea, P. Larrañaga, C. Bielza, J. Pagonabarraga, J. Kulisevsky, I. Corcuera-Solano, M. Delfino (2012). Predicting dementia development in Parkinson's disease using Bayesian network classifiers. *Psychiatry Research: NeuroImaging*, 213(2), 92-98

116. R. Santana, C. Bielza, P. Larrañaga (2012). Regularized logistic regression and multi-objective variable selection for classifying MEG data. *Biological Cybernetics*, 106(6-7), 389-405

117. R. Santana, C. Bielza, P. Larrañaga (2012). Conductance interaction identification by means of Boltzmann distribution and mutual information analysis in conductance-based neuron models. *BMC Neuroscience* 2012, 13(Suppl 1), 100–100

118. D. Vidaurre, C. Bielza, P. Larrañaga (2012). Lazy lasso for local regression. *Computational Statistics*, 27(3), 531-550

119. A. Garcia-Bilbao, R. Armañanzas, Z. Ispizua, B. Calvo, A. Alonso-Varona, I. Inza, P. Larrañaga, G. López-Vivanco, B. Suarez-Merino, M. Betanzos (2012). Identification of a biomarker panel for colorectal cancer diagnosis. *BMC Cancer*, 12, 43

120. R. Armañanzas, P. Larrañaga, C. Bielza (2012). Ensemble transcript interaction networks: A case study on Alzheimer's disease. *Computer Methods and Programs in Biomedicine*, 108(1), 442-450

121. L. Guerra, V. Robles, C. Bielza, P. Larrañaga (2012). A comparison of cluster quality indices using outliers and noise. *Intelligent Data Analysis*, 16(4), 703-715

122. D. Vidaurre, C. Bielza, P. Larrañaga (2011). On nonlinearity in neural encoding models applied to the primary visual cortex. *Network: Computation in Neural Systems*, 22, 97-125

123. A. Ibáñez, P. Larrañaga, C. Bielza (2011). Using Bayesian networks to discover relationships between bibliometric indices. A case study of Computer Science and Artificial Intelligence journals. *Scientometrics*, 89(2), 523-551

124. C. Bielza, G. Li, P. Larrañaga (2011). Multi-dimensional classification with Bayesian networks. *International Journal of Approximate Reasoning*, 52(6), 705-727

125. P. López-Cruz, C. Bielza, P. Larrañaga, R. Benavides-Piccione, J. DeFelipe (2011). Models and simulation of 3D neuronal dendritic trees using Bayesian networks. *Neuroinformatics*, 9(4), 347-369

126. C. Bielza, V. Robles, P. Larrañaga (2011). Regularized logistic regression without a penalty term: An application to cancer classification with microarray data. *Expert Systems with Applications*, 38(5), 5110-5118

127. R. Santana, C. Bielza, P. Larrañaga (2011). Optimizing brain networks topologies using multi-objective evolutionary computation. *Neuroinformatics*, 9, 3–19

128. H. Borchani, P. Larrañaga, C. Bielza (2011). Classifying evolving data streams with partially labelled data. *Intelligent Data Analysis*, 15, 655–670

129. L. Guerra, L. McGarry, V. Robles, C. Bielza, P. Larrañaga, R. Yuste (2011). Comparison between supervised and unsupervised classification of neuronal cell types: A case study. *Developmental Neurobiology*, 71(1), 71-82

130. E. Bengoetxea, P. Larrañaga, C. Bielza, J.A. Fernández del Pozo (2011). Optimal row and column ordering to improve table interpretation using estimation of distribution algorithms. *Journal of Heuristics*, 17(5), 567-588

131. R. Armañanzas, Y. Saeys, I. Inza, M. García-Torres, C. Bielza, Y. van de Peer, P. Larrañaga (2011). Peakbin selection in mass spectrometry data using a consensus approach with estimation of distribution algorithms. *IEEE/ACM Transactions on Computational Biology and Bioinformatics*, 8(3), 760-774

132. P. Larrañaga, S. Moral (2011). Probabilistic graphical models in artificial intelligence. *Applied Soft Computing*, 17(3), 326–339

133. I. Cuesta, C. Bielza, M. Cuenca-Estrella, P. Larrañaga, J. L. Rodríguez-Tudela (2010). Evaluation by data mining techniques of fluconazole breakpoints established by the clinical and laboratory standards institute (CLSI) and comparison with those of the European committee on antimicrobial susceptibility testing (EUCAST). *Antimicrobial Agents and Chemotherapy*, 54(4), 1541-1546

134. R. Santana, C. Bielza, P. Larrañaga, J. A. Lozano, C. Echegoyen, A. Mendiburu, R. Armañanzas, S. Shakya (2010). MATEDA 2.0: Estimation of distribution algorithms in MATLAB *Journal of Statistical Software*, 35(7), 1-30

135. D. Vidaurre, C. Bielza, P. Larrañaga (2010). Learning an L1-regularized Gaussian Bayesian network in the equivalence class space. *IEEE Transactions on Systems, Man and Cybernetics, Part B,* 40(5), 1231-1242

136. R. Santana, P. Larrañaga, J. A. Lozano (2010). Learning factorizations in estimation of distribution algorithms using affinity propagation. *Evolutionary Computation*, 18(4), 515-546

137. C. Bielza, J. A. Fernández del Pozo, P. Larrañaga, E. Bengoetxea (2010). Multidimensional statistical analysis of the parameterization of a genetic algorithm for the optimal ordering of tables. *Expert Systems with Applications*, 37(1), 804-815

138. J. A. Lozano, Q. Zhang, P. Larrañaga (2009). Special issue in Evolutionary Algorithms based on Probabilistic Models. *IEEE Transactions on Evolutionary Computation*, 13(6)

139. A. Ibañez, P. Larrañaga, C. Bielza (2009). Predicting citation count of Bioinformatics papers within four years of publication. *Bioinformatics*, 25(24), 3303-3309

140. I. Cuesta, C. Bielza, P. Larrañaga, M. Cuenca-Estrella, F. Laguna, D. Rodriguez-Pardo, B. Almirante, A. Pahissa, J. Rodriguez-Tudela (2009). Data mining validation of fluconazole breakpoints established by the European committee on antimicrobial susceptibility testing. *Antomicrobial Agents and Chemotherapy*, 53(7), 2949-2954

141. B. Calvo, P. Larrañaga, J.A. Lozano (2009). Feature subset selection from positive and unlabelled examples. *Pattern Recognition Letters*, 30, 1027–1036

142. R. Armañanzas, B. Calvo, I. Inza, M. López-Hoyos, V. Martínez-Taboada, E. Ucar, I. Bernales, A. Fullaondo, P. Larrañaga, A. M. Zubiaga (2009). Microarray analysis of autoimmune diseases by machine learning procedures. *IEEE Transactions on Information Technology in Biomedicine*, 13(3), 341-350

143. A. Pérez, P. Larrañaga, I. Inza (2009). Bayesian classifiers based on kernel estimation: Flexible classifiers. *International Journal of Approximate Reasoning*, 50(2), 341–362

144. T. Romero, P. Larrañaga (2009). Triangulation of Bayesian networks with recursive estimation of distribution algorithms. *International Journal of Approximate Reasoning*, 50(3), 472–484

145. C. Bielza, V. Robles, P. Larrañaga (2009). Estimation of distribution algorithms as logistic regression regularizers of microarray classifiers. *Methods of Information in Medicine*, 48(3), 236-241

146. V. Robles, C. Bielza, P. Larrañaga, S. González, L. Ohno-Machado (2008). Optimizing logistic regression coefficients for discrimination and calibration using estimation of distribution algorithms. *TOP*, 16(2), 345-366

147. D. Morales, E. Bengoetxea, P. Larrañaga (2008). Selection of human embryos for transfer by Bayesian classifiers. *Computer in Biology and Medicine*, 38, 1177-1186

148. S. Furney, B. Calvo, P. Larrañaga, J. A. Lozano, N. López-Bigas (2008). Prioritization of candidate cancer genes. An aid to oncogenomic studies. *Nucleic Acids Research*, 36(18): e115

149. R. Armañanzas, I. Inza, P. Larrañaga (2008). Detecting reliable gene interactions by a hierarchy of Bayesian networks classifiers. *Computer Methods and Programs in Biomedicine*, 91, 110-121

150. G. Santafé, J. A. Lozano, P. Larrañaga (2008). Inference of population structure using genetic markers and a Bayesian model averaging approach for clustering. *Journal of Computational Biology*, 15(2), 207-220

151. R. Santana, J. A. Lozano, P. Larrañaga (2008). Protein folding in simplified models with estimation of distribution algorithms. *IEEE Transactions on Evolutionary Computation*, 12(4), 418-438

152. R. Santana, P. Larrañaga, J. A. Lozano (2008). Combining variable neighborhood search and estimation of distribution algorithms. *Journal of Heuristics*, 14, 519-547

153. D. Morales, E. Bengoetxea, P. Larrañaga, M. García, Y. Franco-Iriarte, M. Fresnada, M. Merino (2008). Bayesian classification for the selection of in-vitro human embryos using morphological and clinical data. *Computer Methods and Programs in Biomedicine*, 90, 104-116

154. I. Zipritia, J. Elorriaga, A. Arruarte, P. Larrañaga, R. Armañanzas (2008). What is behind a summary evaluation decision? *Behavior Research Methods*, 40(2), 597-612

155. B. Calvo, J. A. Lozano, P. Larrañaga (2007). Learning Bayesian classifiers from positive and unlabeled examples. *Pattern Recognition Letters*, 28(16), 2375-2384

156. Y. Saeys, I. Inza, P. Larrañaga (2007). A review of feature selection techniques in bioinformatics. *Bioinformatics*, 23(19), 2507-2517

157. T. Miquelez, E. Bengoetxea, A. Mendiburu, P. Larrañaga (2007). Combining Bayesian classifiers and estimation of distribution algorithms for optimization in continuous domains. *Connection Science*, 19(4), 297-319

158. J. L. Flores, I. Inza, P. Larrañaga (2007). Wrapper discretization by means of estimation of distribution algorithms. *Intelligent Data Analysis Journal*, 11(5), 525-546

159. B. Calvo, N. López-Bigas, S. J. Furney, P. Larrañaga, J. A. Lozano (2007). A partially supervised approach to dominant and recessive human disease gene prediction. *Computer Methods and Programs in Biomedicine*, 85(3), 229-237

160. R. Santana, P. Larrañaga, J. A. Lozano (2007). Side chain placement using estimation of distribution algorithms. *Artificial Intelligence in Medicine*, 39(1), 49-63

161. G. Santafé, J. A. Lozano, P. Larrañaga (2006). Bayesian model averaging of naive Bayes for clustering. *IEEE Transactions on Systems, Man, and Cybernetics*, 36(5), 1149-1161

162. A. Pérez, P. Larrañaga, I. Inza (2006). Supervised classification with conditional Gaussian networks: Increasing the structure complexity from naive Bayes. *International Journal of Approximate Reasoning*, 43, 1-25

163. P. Larrañaga, B. Calvo, R. Santana, Y. Galdiano, C. Bielza, I. Inza, R. Armañanzas, G. Santafé, A. Pérez, V. Robles (2006). Machine learning in bioinformatics. *Briefings in Bioinformatics*, 7(1), 86-112

164. C. Roberto, E. Bengoetxea, I. Bloch, P. Larrañaga (2005). Inexact graph matching for model-based recognition: Evaluation and comparison of optimization algorithms. *Pattern Recognition*, 38, 2099-2113

165. R. Blanco, I.Inza, M. Merino, J. Quiroga, P. Larrañaga (2005). Feature selection in Bayesian classifiers for the prognosis of survival of cirrhotic patients treated with TIPS. *Journal of Biomedical Informatics*, 38, 376-388

166. P. Larrañaga, J. A. Lozano, J. M. Peña, I. Inza (2005). Special issue on Probabilistic Graphical Models in Classification. *Machine Learning*, 59, 211-212

167. J. M. Peña, J. A. Lozano, P. Larrañaga (2005). Globally multimodal problem optimization via an estimation of distribution algorithm based on unsupervised learning of Bayesian networks. *Evolutionary Computation*, 43-66

168. P. Larrañaga, J. A. Lozano (2005). Special issue on estimation of distribution algorithms. *Evolutionary Computation*, v-vi

169. T. Romero, P. Larrañaga, B. Sierra (2004). Learning Bayesian networks in the space of orderings with estimation of distribution algorithms. *International Journal of Pattern Recognition and Artificial Intelligence*, 18(4), 607-625

170. R. Blanco, P. Larrañaga, I. Inza, B. Sierra (2004). Gene selection for cancer classification using wrapper approaches. *International Journal of Pattern Recognition and Artificial Intelligence*, 18(8), 1373-1390

171. V. Robles, P. Larrañaga, J. M. Peña, E. Menasalvas, M. S. Pérez, V. Herves (2004). Bayesian networks as consensed voting system in the construction of a multi–classifier for protein secondary structure prediction. *Artificial Intelligence in Medicine*, 31, 117-136

172. I. Inza, P. Larrañaga, R. Blanco, A. J. Cerrolaza (2004). Filter versus wrapper gene selection approaches in DNA microarray domains. *Artificial Intelligence in Medicine*, 31, 91-103

173. T. Miquelez, E. Bengoetxea, P. Larrañaga (2004). Evolutionary computation based on Bayesian classifiers. *International Journal of Applied Mathematics and Computer Science*, 14(3), 101-115

174. P. Larrañaga, E. Menasalvas, J. M. Peña, V. Robles (2004). Special issue in data mining in genomics and proteomics. *Artificial Intelligence in Medicine*, 31, iii-iv

175. J. M. Peña, J. A. Lozano, P. Larrañaga (2004). Unsupersived learning of Bayesian networks via estimation of distribution algorithms: An application to gene expression data clustering. *International Journal of Uncertainty, Fuzziness and Knowledge-Based Systems*, 12, 63-82

176. C. González, J.A. Lozano, P. Larrañaga (2002). Mathematical modelling of UMDAc algorithm with tournament selection. Behaviour on linear and quadratic functions. *International Journal of Approximate Reasoning*, 31, 313-340

177. P. Larrañaga, J.A. Lozano (2002). Synergies between evolutionary computation and probabilistic graphical models. *International Journal of Approximate Reasoning*, 31, 155-156

178. E. Bengoetxea, P. Larrañaga, I. Bloch, A. Perchant, C. Boeres (2002). Inexact graph matching by means of estimation of distribution algorithms. *Pattern Recognition*, 35(12), 2867-2880

179. J. M. Peña, J. A. Lozano, P. Larrañaga (2002). Learning recursive Bayesian multinets for clustering by means of constructive induction. *Machine Learning*, 47, 63-89

180. J. M. Peña, J. A. Lozano, P. Larrañaga, I. Inza (2001). Dimensionality reduction in unsupervised learning of conditional Gaussian networks. *IEEE Transactions on Pattern Analysis and Machine Intelligence*, 23(6), 590-603

181. I. Inza, M. Merino, P. Larrañaga, J. Quiroga, B. Sierra, M. Girala (2001). Feature subset selection by genetic algorithms and estimation of distribution algorithms. A case study in the survival of cirrhotic patients treated with TIPS. *Artificial Intelligence in Medicine*, 23(2), 187-205

182. J. M. Peña, J. A. Lozano, P. Larrañaga (2001). Performance evaluation of compromise conditional Gaussian networks for data clustering. *International Journal of Approximate Reasoning*, 28, 23-50

183. I. Inza, P. Larrañaga, B. Sierra (2001). Feature subset selection by Bayesian networks: A comparison with genetic and sequential algorithms. *International Journal of Approximate Reasoning*, 27, 143-164

184. B. Sierra, N. Serrano, P. Larrañaga, E. J. Plasencia, I. Inza, J. J. Jiménez, P. Revuelta, M. L. Mora (2001). Using Bayesian networks in the construction of a bi-level multi-classifier. A case study using intensive care unit patients data. *Artificial Intelligence in Medicine*, 22, 233-248

185. I. Inza, P. Larrañaga, R. Etxeberria, B. Sierra (2000). Feature subset selection by Bayesian network–based optimization. *Artificial Intelligence*, 123, 157-184

186. J.M. Peña, J.A. Lozano, P. Larrañaga (2000). An improved Bayesian structural EM algorithm for learning Bayesian networks for clustering. *Pattern Recognition Letters*, 21(8), 779-786

187. J. M. Peña, J. A. Lozano, P. Larrañaga (1999). Learning Bayesian networks for clustering by means of constructive induction. *Pattern Recognition Letters*, 20(11-13), 1219-1230

188. I. Inza, P. Larrañaga, B. Sierra, R. Etxeberria, J. A. Lozano, J. M. Peña (1999). Representing the behaviour of supervised classification learning algorithms by Bayesian networks. *Pattern Recognition Letters*, 20 (11-13), 1201-1209

189. J. M. Peña, J. A. Lozano, P. Larrañaga (1999). An empirical comparison of four initialization methods for the k-means algorithm. *Pattern Recognition Letters*, 20, 1027-1040

190. J. A. Lozano, P. Larrañaga, M. Graña, F. X. Albizuri (1999). Genetic algorithms: Bridging the convergence gap. *Theoretical Computer Science*, 229, 11-22

191. P. Larrañaga, C. M. H. Kuijpers, R. H. Murga, I. Inza, S. Dizdarevich (1999). Genetic algorithms for the travelling salesman problem: A review of representations and operators. *Artificial Intelligence Review*, 13, 129-170

192. J. A. Lozano P. Larrañaga (1999). Applying genetic algorithms to search for the best hierarchical clustering of a dataset. *Pattern Recognition Letters*, 20, 911–918

193. B. Sierra, P. Larrañaga (1998). Predicting the survival in malignant skin melanoma using Bayesian networks automatically induced by genetic algorithms. An empirical comparison between different approaches. *Artificial Intelligence in Medicine*, 14(1-2), 215-230

194. R. Etxeberria, P. Larrañaga, J.M. Pikaza (1997). Analysis of the behaviour of genetic algorithms when learning Bayesian network structure from data. *Pattern Recognition Letters*, 18(11-13), 1269-1273

195. X. Albizuri, A. d'Anjou, M. Graña, P. Larrañaga (1997). Structure of the high-order Boltzman machine from independence maps. *IEEE Transactions on Neural Networks*, 8(6), 1351-1358

196. P. Larrañaga, C. M. H. Kuijpers, M. Poza, R. H. Murga (1997). Decomposing Bayesian networks: Triangulation of the moral graph with genetic algorithms. *Statistics and Computing*, 7, 19-34

197. P. Larrañaga, C. M. H. Kuijpers, R. H. Murga, Y. Yurramendi (1996). Learning Bayesian network structures by searching for the best ordering with genetic algorithms. *IEEE Transactions on System, Man and Cybernetics. Part A: Systems and Humans*, 26(4), 487-493

198. P. Larrañaga, M. Poza, Y. Yurramendi, R. H. Murga, C. M. H. Kuijpers (1996). Structure learning of Bayesian networks by genetic algorithms: A performance analysis of control parameters. *IEEE Transactions on Pattern Analysis and Machine Intelligence*, 18(9), 912-926

199. P. Echániz, P. Larrañaga, J. Arrizabalaga, J. L. Jiménez, J. A. Iribarren, E. Cuadrado (1992). Factores pronósticos en heroinómanos infectados por el VIH: análisis multivariable de factores serológicos inespecíficos en la evolución de la infección. *Revista Clínica Española*, 190(8), 422-426

200. J. I. Emparanza, L. Aldámiz-Echevarria, E. G. Pérez-Yarza, P. Larrañaga, J. L. Jimenez, M. Labiano, I. Ozcoidi (1988). Prognostic score in acute meningococcemia. *Critical Care Medicine*, 16(2), 168-169

1. P. Larrañaga, C. Bielza (2020). Competir con inteligencia artificial. *IESE Business School Insight*, 156, 68-74

2. M.A. Montealegre, D. Atienza, J. Díaz-Rozo, C. Bielza, P. Larrañaga (2019). Quality control process to detect the anomalies during laser surface heat treatment. *LIATODAY*, 27(1)

3. I. Leguey, R. Benavides-Piccione, C. Rojo, P. Larrañaga, C. Bielza, and J. DeFelipe (2018). Patterns of dendritic basal field orientation of pyramidal neurons in the rat somatosensory cortex. *eNeuro*, 5(6), e0142, 1-13

4. J. Díaz-Rozo, C. Bielza, P. Larrañaga (2017). Machine learning-based CPS for clustering high throughput machining cycle conditions. *Procedia Manufacturing* 10, 997-1008

5. P. Fernandez-Gonzalez, C. Bielza, P. Larrañaga (2017). Univariate and bivariate truncated von Mises distributions. *Progress in Artificial Intelligence* 6(2), 171-180

6. Ibáñez, A., Armañanzas, A., Bielza, C., Larrañaga, P. (2016). Genetic algorithms and Gaussian Bayesian networks to uncover the predictive core set of bibliometric indices. *Journal of the American Society for Information Science and Technology*, 67(7), 1703-1721

7. M. Benjumeda, C. Bielza, P. Larrañaga (2016). Learning Bayesian networks with low inference complexity. *Progress in Artificial Intelligence*, 5(1), 15-26

8. H. Borchani, C. Bielza, P. Martínez-Martín, P. Larrañaga, P. (2014). Predicting EQ-5D from the Parkinson's disease questionnaire using multi-dimensional Bayesian network classifiers. *Biomedical Engineering: Applications, Basis and Communications*, 26(1), 1450015

9. P. Larrañaga, C. Bielza (2012). Alan Turing and Bayesian statistics. *Mathware & Soft Computing Magazine*, 19(2), 23-24

10. P. Larrañaga, C. Bielza, J. DeFelipe (2012). Alan Turing y la neurociencia. *Mente y Cerebro*, 57, 49-51

11. D. Vidaurre, C. Bielza, P. Larrañaga (2012). Forward stagewise naive Bayes. *Progress in Artificial Intelligence*, 1, 57-69

12. I. Inza, B. Calvo, R. Armañanzas, E. Bengoetxea, P. Larrañaga, J. A. Lozano (2009). Machine learning: An indispensable tool in bioinformatics. *Bioinformatics Methods in Clinical Research*, Springer, 25-48

13. D. Morales, E. Bengoetxea, P. Larrañaga (2009). Clasificadores Bayesianos en la selección embrionaria en tratamientos de reproducción asistida. *Matematicalia* 4, 3

14. I. Cuesta, C. Bielza, P. Larrañaga, M. Cuenca-Estrella, J.L. Rodríguez-Tudela (2009). Evaluación de los puntos de corte de fluconazol del CLSI y el EUCAST mediante técnicas de minería de datos. *Enfermedades Infecciosas y Microbiología Clínica*, 27, 104-105

15. R. Armañanzas, I. Inza, R. Santana, Y. Saeys, J.L. Flores, J.A. Lozano, Y. Van de Peer, R. Blanco, V. Robles, C. Bielza, P. Larrañaga (2008). A review of estimation of distribution algorithms in bioinformatics. *BioDataMining*, 1(6), 1-12

16. R. Santana, J. A. Lozano, P. Larrañaga (2008). Research topics in discrete estimation of distribution algorithms. *Memetic Computing*, 1, 135-154

17. G. Santafé, J. A. Lozano, P. Larrañaga (2006). Aprendizaje discriminativo de clasificadores Bayesianos. *Inteligencia Artificial. Revista Iberoamericana de Inteligencia Artificial*, 29, 39-47

18. M. Merino, J. Quiroga, I. Inza, P. Larrañaga (2004). Predicción de mortalidad precoz tras TIPS. ¿Es mejorable el MELD score?. *Revista de la Sociedad Española de Calidad Asistencial*

19. T. Miquelez, E. Bengoetxea, P. Larrañaga (2004). Evolutionary computation based on Bayesian classifiers. *International Journal of Applied Mathematics and Computer Science*, 14(3), 101-115

20. P. Larrañaga, J.A. Lozano, H. Mühlenbein (2003). Algoritmos de estimación de distribuciones en problemas de optimización combinatoria. *Inteligencia Artificial. Revista Iberoamericana de Inteligencia Artificial*, 19(2), 149-168

21. R. Blanco, I. Inza, P. Larrañaga (2003). Learning Bayesian networks in the space of structures by estimation of distribution algorithms. *International Journal of Intelligent Systems*, 18, 205-220

22. I. Inza, B. Sierra, R. Blanco, P. Larrañaga (2002). Gene selection by sequential search wrapper approaches in microarray cancer class prediction. *Journal of Intelligent and Fuzzy Systems*, 12(1), 25-33

23. C. González, J. A. Lozano, P. Larrañaga (2000). Analyzing the population based incremental learning algorithm by means of discrete dynamical systems. *Complex Systems*, 12(4), 465-479

24. J. A. Lozano, P. Larrañaga (1998). Aplicación de los algoritmos genéticos al problema del clustering jerárquico. *Inteligencia Artificial. Revista Iberoamericana de Inteligencia Artificial*, 5, 62-67

25. M. Graña, A. d'Anjou, X. Albizuri, J.A. Lozano, P. Larrañaga, Y. Yurramendi, M. Hernández, J.L. Jiménez, F.J. Torrealdea, M. Poza, A. I. González (1996). Experimentos de aprendizaje con máquinas de Boltzmann de alto orden. *Informática y Automática*, 29(4), 42-57

26. C. M. H. Kuijpers, P. Larrañaga, I. Inza, S. Dizdarevic (1996). Algoritmo genetikoak saltzaile ibiltariaren probleman. Gipuzkoako bira egokiaren atzetik. *Elhuyar*, 22(2), 10-30

27. A. Beristain, J. Castaignède, J. L. De la Cuesta, I. Dendaluze, I. German, M. González, J. C. Heraut, P. Larrañaga, A. Maeso, E. Vidaurrazaga (1996). La representación social de la delincuencia. *Boletín Criminológico. Instituto Andaluz Interuniversitario de Criminología*, 24, 1-4

28. M. González, J. Castaignède, I. Dendaluce, P. Larrañaga (1995). Representaciones sociales de los jóvenes sobre la criminalidad. Investigación transfronteriza. *Revista de Derecho Penal y Criminología*, 5, 335-490

29. P. Larrañaga, J. L. Jiménez, M. Alkorta, J. A. Diego, E. Arnaiz (1994). Aplicación de la clasificación automática en la construcción de una tipología de residentes. Proyecto Hombre de Gipuzkoa. *Eguzkilore*, 8, 39-51

30. A. Beristain, P. Larrañaga, J. L. Jiménez (1990). La policía en la Comunidad Autónoma Vasca. *Eguzkilore*, 4, 189-202

31. L. Segura, C. Saiz, M. Erquicia, M. T. Gaztañaga, P. Larrañaga, J. L. Jimenez. Estudio comparativo entre tres métodos para la obtención del porcentaje de grasa corporal. *Archivos de Medicina del Deporte*, 7(28), 361-364

32. P. Larrañaga (1988). La indemnización en las víctimas del delito. Un estudio basado en las sentencias dictadas en la audiencia provincial de Guipúzcoa durante el año 1986. *Eguzkilore*, 2, 139-224

33. P. Angulo, P. Larrañaga (1988). Korden paradoxa. *Elhuyar. Zientzia eta Teknika*, 14, 42-43

34. J. I. Emparanza, M. Labiano, I. Ozcoidi, P. Larrañaga, L. Aldámiz-Echevarria, E. G. Pérez-Yarza (1987). Score pronóstico para la sepsis meningocócica infantil. *Anales Españoles de Pediatría*, 346-346

35. M. Erquicia, P. Larrañaga (1987). Clasificación de los alimentos utilizando métodos estadísticos. *Nutrición Clínica y Dietética Hospitalaria*, 3, 15-22

36. P. Larrañaga, J. L. Jimenez (1987). Datu-analisia. *Elhuyar*, 13(1), 17-24

37. P. Larrañaga, J. L. Jimenez (1986). Azpimultzo lausoak. *Elhuyar*, 12(2), 45-50

38. P. Larrañaga (1985). Datuak sailkatzeko bi metodoen arteko konparaketa. *Elhuyar*, 11(3-4), 368-381

Book Chapters

1. C. Puerto-Santana, P. Larrañaga, J. Diaz-Rozo, C. Bielza (2021). An online feature selection methodology for ball-bearing harmonic frequencies based on HMMs. *Advances in Intelligent Systems and Computing* 1401, 546-555, Springer

2. S. Luengo-Sanchez, C. Bielza, P. Larrañaga (2016). Hybrid Gaussian and von Mises model-based clustering. *Frontiers in Artificial Intelligence and Applications*, 285, 855-862

3. D. Atienza, C. Bielza, J. Diaz, P. Larrañaga (2016). Anomaly detection with a spatio-temporal tracking of the laser spot. *Frontiers in Artificial Intelligence and Applications Series*, 284, 137-142, IOS Press

4. J. Diaz, C. Bielza, J. L. Ocaña, P. Larrañaga (2015). Development of a cyber-physical system based on selective Gaussian naive Bayes model for a self-predict laser surface heat treatment process control. *Machine Leaning for Cyber-Physical Systems Conference*, 1-8, Springer

5. P. Larrañaga, C. Bielza (2014). *Concise Encyclopaedia of Bioinformatics and Computational Biology*, 28 entries, Willey Blackwell

6. H. Karshenas, R. Santana, C. Bielza, P. Larrañaga (2012). Continuous estimation of distribution algorithms based on factorized Gaussian Markov networks. *Markov Networks in Evolutionary Computation*, 14, 157-173. Springer

7. P. Larrañaga (2012). 1969-1980: Mondragón-Toulouse-Mondragón-Berkeley-Mondragón. *Festschrift in Honour of Ramon López de Màntaras*, 205-216, Artificial Intelligence Research Institute

8. D. Morales, E. Bengoetxea, P. Larrañaga (2009). Combining multi-classifiers with Gaussian-stacking multiclassifiers for human embryo selection. *Data Mining and Medical Knowledge Management: Cases and Applications*, 307-331, IGI Global

9. I. Inza, B. Calvo, R. Armañanzas, E. Bengoetxea, P. Larrañaga, J. A. Lozano (2009). Machine learning: An indispensable tool in bioinformatics. *Bioinformatics Methods in Clinical Research*, 25-48, Springer

10. C. Echegoyen, R. Santana, J. A. Lozano, P. Larrañaga (2008). The impact of exact probabilistic learning algorithms in EDAs based on Bayesian network. *Linkage in Evolutionary Computation*, 109-139, Springer

11. V. Robles, J. M. Peña, P. Larrañaga, M. S. Pérez, V. Herves (2006). GA-EDA: A new hybrid cooperative search evolutionary algorithm. *Towards a New Evolutionary Computation. Advances on Estimation of Distribution Algorithms*, 187-220, Springer

12. T. Miquélez, E. Bengoetxea, P. Larrañaga (2006). Bayesian classifiers in optimization: An EDA-like approach. *Towards a New Evolutionary Computation. Advances on Estimation of Distribution Algorithms*, 221-242, Springer

13. R. Armañanzas, B. Calvo, I. Inza, P. Larrañaga, I. Bernales, A. Fullaondo, A. M. Zubiaga (2005). Clasificadores Bayesianos con selección consensuada de genes en la predicción del lupus eritematoso sistémico. *Minería de Datos: Técnicas y Aplicaciones*, Ediciones Departamento de Informática, Universidad Castilla La Mancha, 107-135

14. S. Dizdarevich, P. Larrañaga, B. Sierra, J. A. Lozano, J. M. Peña (2005). Combining statistical and machine learning based classifiers in the prediction of corporate failure. *Artificial Intelligence in Accounting and Auditing. Volume 6. International Perspective*, 177-211, Markus Wiener Publishers

15. P. Larrañaga, I. Inza, J. L. Flores (2005). A guide to the literature on inferring genetic networks by probabilistic graphical models. *Data Analysis and Visualization in Genomics and Proteomics*, 215-238, John Wiley.

16. I. Inza, P. Larrañaga, B. Sierra (2002). Estimation of distribution algorithms for feature subset selection in large dimensionality domains. *Data Mining: A Heuristic Approach*, 97-116, Idea Group Publishing

17. C. Cotta, E. Alba, R. Sagarna, P. Larrañaga (2002). Adjusting weights in artificial neural networks using evolutionary algorithms. *Estimation of Distribution Algorithms. A New Tool for Evolutionary Computation*, 361-377, Kluwer Academic Publishers

18. J. Roure, P. Larrañaga, R. Sangüesa (2002). An empirical comparison between K-means, GAs and EDAs in partitional clustering. *Estimation of Distribution Algorithms. A New Tool for Evolutionary Computation*, 343-360, Kluwer Academic Publishers

19. L.M. de Campos, J. A. Gámez, P. Larrañaga, S. Moral, T. Romero (2002). Partial abductive inference in Bayesian networks: An empirical comparison between GAs and EDAs. *Estimation of Distribution Algorithms. A New Tool for Evolutionary Computation*, 323-341, Kluwer Academic Publishers

20. B. Sierra, E. A. Jiménez, I. Inza, P. Larrañaga, J. Muruzábal (2002). Rule induction by estimation of distribution algorithms. *Estimation of Distribution Algorithms. A New Tool for Evolutionary Computation*, 313-322, Kluwer Academic Publishers

21. I. Inza, P. Larrañaga, B. Sierra (2002). Feature weighting for nearest neighbor by estimation of distribution algorithms. *Estimation of Distribution Algorithms. A New Tool for Evolutionary Computation*, 295-311, Kluwer Academic Publishers

22. I. Inza, P. Larrañaga, B. Sierra (2002). Feature subset selection by estimation of distribution algorithms. *Estimation of Distribution Algorithms. A New Tool for Evolutionary Computation*, 269-293, Kluwer Academic Publishers

23. E. Bengoetxea, P. Larrañaga, I. Bloch, A. Perchant (2002). Solving graph matching with EDAs using a permutation–based representation. *Estimation of Distribution Algorithms. A New Tool for Evolutionary Computation*, 243-265, Kluwer Academic Publishers

24. V. Robles, P. de Miguel, P. Larrañaga (2002). Solving the traveling salesman problem with EDAs. *Estimation of Distribution Algorithms. A New Tool for Evolutionary Computation*, 211-229, Kluwer Academic Publishers

25. R. Sagarna, P. Larrañaga (2002). Solving the 0-1 knapsack problem with EDAs. *Estimation of Distribution Algorithms. A New Tool for Evolutionary Computation*, 195-209, Kluwer Academic Publishers

26. E. Bengoetxea, T. Miquélez, P. Larrañaga, J. A. Lozano (2002). Experimental results in function optimization with EDAs in continuous domains. *Estimation of Distribution Algorithms. A New Tool for Evolutionary Computation*, 181-194, Kluwer Academic Publishers

27. C. González, J. A. Lozano, P. Larrañaga (2002). Mathematical modeling of discrete estimation of distribution algorithms. *Estimation of Distribution Algorithms. A New Tool for Evolutionary Computation*, 147-163, Kluwer Academic Publishers

28. J. A. Lozano, R. Sagarna, P. Larrañaga (2002). Parallel estimation of distribution algorithms. *Estimation of Distribution Algorithms. A New Tool for Evolutionary Computation*, 129-145, Kluwer Academic Publishers

29. J. M. Peña, J. A. Lozano, P. Larrañaga (2002). Benefits of data clustering in multimodal function optimization via EDAs. *Estimation of Distribution Algorithms. A New Tool for Evolutionary Computation*, 101-127, Kluwer Academic Publishers

30. P. Larrañaga (2002). A review on estimation of distribution algorithms. *Estimation of Distribution Algorithms. A New Tool for Evolutionary Computation*, 57-100, Kluwer Academic Publishers

31. P. Larrañaga (2002). An introduction to probabilistic graphical models. *Estimation of Distribution Algorithms. A New Tool for Evolutionary Computation*, 27-56, Kluwer Academic Publishers

32. P. Larrañaga, C. M. H. Kuijpers (1999). Moral graph (triangulation of). *Encyclopedia of Statistical Sciences. Update Volume 3*, 462-464, John Wiley & Sons Ltd.

33. P. Larrañaga, C. M. H. Kuijpers, R. H. Murga, Y. Yurramendi, M. Graña, J. A. Lozano, X. Albizuri, A. d'Anjou, F. J. Torrealdea (1996). Genetic algorithms applied to Bayesian networks. *Computational Learning and Probabilistic Reasoning*, 211-234, John Wiley & Sons Ltd.

34. P. Larrañaga (1989). Clasificación de las provincias españolas frente a los delitos comunes. *Criminología y Derecho Penal al Servicio de la Persona. Libro-Homenaje al Profesor Antonio Beristain*, 289-292, IVAC-KREI

Lecture Notes

1. D. Quesada, C. Bielza, and P. Larrañaga (2021). Structure learning of high-order dynamic Bayesian networks via particle swarm optimization with order invariant encoding. *Lecture Notes in Computer Science*, 12886, 158-171, Springer

2. C. Puerto-Santana, C. Bielza and Pedro Larrañaga (2018). Asymmetric hidden Markov models with continuous variables. *Lecture Notes in Artificial Intelligence*, 11160, 98-107, Springer

3. S. Gil-Begué, P. Larrañaga, C. Bielza (2018). Multi-dimensional Bayesian network classifier trees. *Lecture Notes in Computer Science*, 11314, 354-363, Springer

4. I. Córdoba-Sánchez, E.C. Garrido-Merchán, D. Hernández-Lobato, C. Bielza, and P. Larrañaga (2018). Bayesian optimization of the PC algorithm for learning Gaussian Bayesian networks. *Lecture Notes in Artificial Intelligence*, 11160, 44-54, Springer

5. I. Córdoba-Sánchez, G. Varando, C. Bielza, and P. Larrañaga (2018). A fast Metropolis-Hastings method for generating random correlation matrices. *Lecture Notes in Computer Science*, 11314, 117-124, Springer

6. A. Ogbechie, J. Díaz-Rozo, P. Larrañaga, C. Bielza (2016). Dynamic Bayesian network-based anomaly detection for in-process visual inspection of laser surface heat treatment. *Lecture Notes in Computer Science*, 17-24, Springer

7. I. Leguey, C. Bielza, P. Larrañaga (2016). Tree-structured Bayesian networks for wrapped Cauchy directional distributions. *Lecture Notes in Computer Science*, 9868, 207-216, Springer

8. I. Córdoba-Sánchez, C. Bielza, P. Larrañaga (2015). Towards Gaussian Bayesian networks fusion. *Lecture Notes in Artificial Intelligence*, 9161, 519-528, Springer

9. L. Rodriguez-Lujan, C. Bielza, P. Larrañaga (2015). Regularized multivariate von Mises distribution. *Lecture Notes in Artificial Intelligence*, 9422, 25-35, Springer

10. G. Varando, C. Bielza, P. Larrañaga (2014). Expressive power of binary relevance and chain classifiers based on Bayesian networks for multi-label classification. *Lecture Notes in Artificial Intelligence*, 8754, 519-534, Springer

11. B. Mihaljević, P. Larrañaga, C. Bielza (2013). Augmented semi-naive Bayes classifier. *Lecture Notes in Artificial Intelligence*, 8109, 159-167, Springer

12. P.L. Lopez-Cruz, C. Bielza, P. Larrañaga (2013). Learning conditional linear Gaussian classifiers with probabilistic class labels. *Lecture Notes in Artificial Intelligence*, 8109, 139-148, Springer

13. P.L. Lopez-Cruz, T.D. Nielsen, C. Bielza, P. Larrañaga (2013). Learning mixtures of polynomials of conditional densities from data. *Lecture Notes in Artificial Intelligence*, 8109, 363-372, Springer

14. L. Guerra, R. Benavides-Piccione, C. Bielza, V. Robles, J. DeFelipe, P. Larrañaga (2013). Semi-supervised projected clustering for classifying GABAergic interneurons. *Lecture Notes in Artificial Intelligence*, 7885, 156-165, Springer

15. H. Karshenas, R. Santana, C. Bielza, P. Larrañaga (2011). Multi-objective optimization with joint probabilistic modeling of objectives and variables. *Lecture Notes in Computer Science*, 6576, 298-312, Springer

16. P. López-Cruz, C. Bielza, P. Larrañaga (2011). The von Mises naive Bayes classifier for angular data. *Lecture Notes in Artificial Intelligence*, 7023, 145-154, Springer

17. E. Bengoetxea, P. Larrañaga (2010). EDA-PSO. A hybrid paradigm combining estimation of distribution algorithms and particle swarm optimization. *Lecture Notes in Computer Science*, 6234, 416–423, Springer

18. R. Santana, C. Bielza, P. Larrañaga (2010). Synergies between network-based representation and probabilistic graphical models for classification, inference and optimization problems in neuroscience. *Lecture Notes in Artificial Intelligence*, 6098, 149-158, Springer

19. H. Borchani, P. Larrañaga, C. Bielza (2010). Mining concept-drifting data streams containing labeled and unlabeled instances. *Lecture Notes in Artificial Intelligence*, 6096, 531-540, Springer

20. R. Santana, C. Bielza, P. Larrañaga (2010). Using probabilistic dependencies improves the search of conductance-based compartmental neuron models. *Lecture Notes in Computer Science*, 6023, 170-181, Springer

21. E. Díaz, E. Ponce-de-León, P. Larrañaga, C. Bielza (2009). Probabilistic graphical Markov model learning: An adaptive strategy. *Lecture Notes in Artificial Intelligence*, 5845, 225-236, Springer

22. R. Santana, P. Larrañaga, J. A. Lozano (2009). Adding probabilistic dependencies to the search of protein side chain configurations using EDAs. *Lecture Notes in Computer Science*, 5199, 1120-1129, Springer

23. R. Santana, P. Larrañaga, J. A. Lozano (2007). The role of a priori information in the minimization of contact potentials by means of estimation of distribution algorithms. *Lecture Notes in Computer Science*, 4447, 247–257, Springer

24. R. Armañanzas, B. Calvo, I. Inza, P. Larrañaga, I. Bernales, A. Fullaondo, A. M. Zubiaga (2007). Bayesian classifiers with consensus gene selection: A case study in the systemic lupus erythematosus. *Lecture Notes in Mathematics in Industry*, 560-565, Springer

25. A. Pérez, P. Larrañaga, I. Inza (2006). Information theory and classification error in probabilistic classifiers. *Lecture Notes in Artificial Intelligence*, 4265, 347-351, Springer

26. T. Miquelez, E, Bengoetxea, P. Larrañaga (2006). Evolutionary Bayesian classifier-based optimization in continuous domains. *Lecture Notes in Computer Science*, 4247, 529-536, Springer

27. R. Santana, P. Larrañaga, J. A. Lozano (2006). Mixtures of Kikuchi approximations. *Lecture Notes in Artificial Intelligence*, 4212, 365-376, Springer

28. R. Blanco, I. Inza, P. Larrañaga (2004). Learning Bayesian networks by floating search methods. *Advances in Bayesian Networks*, 181–200, Springer

29. R. Santana, P. Larrañaga, J. A. Lozano (2004). Protein folding in 2 dimension lattices with estimation of distribution algorithms. *Lectures Notes in Computer Science*, 3337, 388-398, Springer

30. R. Blanco, L. van der Gaag, I. Inza, P. Larrañaga (2004). Selective classifiers can be too restrictive. A case study on oesophageal cancer. *Lectures Notes in Computer Science*, 3337, 212-223, Springer

31. J. M. Peña, V. Robles, P. Larrañaga, V. Herves, F. Rosales, M. S. Pérez (2004). GA–EDA: hybrid evolutionary algorithm using genetic and estimation of distribution algorithms. *Lectures Notes in Artificial Intelligence*, 3029, 361-371, Springer

32. V. Robles, P. Larrañaga , J. M. Peña, M. S. Pérez, E. Menasalvas, V. Herves (2003). Learning semi naïve Bayes structures by estimation of distribution algorithms. *Lecture Notes in Computer Science*, 2902, 244-258, Springer

33. V. Robles, P. Larrañaga, J. M. Peña, E. Menasalvas, M. S. Pérez (2003). Interval estimation naïve Bayes. *Lecture Notes in Computer Science*, 2810, 143-154, Springer

34. C. González, J. D. Rodríguez, J. A. Lozano, P. Larrañaga (2003). Analysis of the univariate marginal distribution algorithm modeled by Markov chains. *Lecture Notes in Computer Science*, 2686, 510-517, Springer

35. V. Robles, P. Larrañaga, J. M. Peña, O. Marbán, J. Crespo, M. S. Pérez (2003). Collaborative filtering using interval estimation naïve Bayes. *Lecture Notes in Artificial Intelligence*, 2663, 46-53, Springer

36. B. Sierra, I. Inza, P. Larrañaga (2001). On applying supervised classification techniques in medicine. *Lecture Notes in Computer Sciences*, 2199, 14-19, Springer

37. E. Bengoetxea, P. Larrañaga, I. Bloch, A. Perchant (2001). Estimation of distribution algorithms: a new evolutionary computational approach for graph matching problems. *Lecture Notes in Computer Science*, 2134, 454-468, Springer

38. B. Sierra, E. Lazkano, I. Inza, M. Merino, P. Larrañaga, J. Quiroga (2001). Prototype selection and feature subset selection by estimation of distribution algorithms. A case study in the survival of cirrhotic patients treated with TIPS. In *Lecture Notes in Artificial Intelligence*, 2101, 20-29, Springer

39. I. Inza, M. Merino, P. Larrañaga, J. Quiroga, B. Sierra, M. Girala (2000). Feature subset selection using probabilistic tree structures. A case study in the survival of cirrhotic patients treated with TIPS. *Lecture Notes in Computer Science*, 1933, 97-100, Springer

40. B. Sierra, I. Inza, P. Larrañaga (2000). Medical Bayes networks. *Lecture Notes in Computer Science*, 1933, 4-14, Springer

41. B. Sierra, N. Serrano, P. Larrañaga, E. J. Plasencia, I. Inza, J. J. Jimenez, J. M. de la Rosa, M. L. Mora (1999). Machine learning inspired approaches to combine standard medical measures at an intensive care unit. *Lecture Notes in Artificial Intelligence*, 1620, 366-371, Springer

42. P. Larrañaga, M. J. Gallego, B. Sierra, L. Urkola, M. J. Michelena (1997). Bayesian networks, rule induction and logistic regression in the prediction of the survival of women survival suffering from breast cancer. *Lecture Notes in Artificial Intelligence*, 1323, 303-308, Springer

43. P. Larrañaga, B. Sierra, M. J. Gallego, M. J. Michelena, J. M. Pikaza (1997). Learning Bayesian networks by genetic algorithms: A case study in the prediction of survival in malignant skin melanoma. *Lecture Notes in Artificial Intelligence*, 1211, 261-272, Springer

44. P. Larrañaga, R. H. Murga, M. Poza, C. M. H. Kuijpers (1996). Structure learning of Bayesian networks by hybrid genetic algorithms. *Lecture Notes in Statistics*, 112, 165-174, Springer

45. P. Larrañaga, M. Graña, A. d'Anjou, F. J. Torrealdea (1993). Genetic algorithms elitist probabilistic of degree 1, a generalization of simulated annealing. *Lecture Notes in Artificial Intelligence*, 728, 208-217, Springer

46. P. Larrañaga, Y. Yurramendi (1993). Structure learning approaches in causal probabilistic networks. *Lecture Notes in Computer Science*, 747, 227-232, Springer

Conferences Publications

1. S.R. Ram, B.A. Strange, L. Zhang, T. del Ser, E. Lucia, V. Lorenzo, M. Valentí, M.A. Zea-Sevilla, B. Frades, T. Heskes, P. Larrañaga, C. Bielza, P. Sanchez-Juan (2023). Structural modeling of clinical factors for validation and prediction of future conversion to mild cognitive impairment. *Alzheimer's Association International Conference (AAIC23)*

2. D. Lozano-Paredes, L. Bote-Curiel, C. Bielza, P. Larrañaga, M. Sabater-Molina, J.R. Gimeno-Blanes, S. Muñoz-Romero, F.J. Gimeno-Blanes, J.L. Rojo-Alvarez (2023). High-dimensional feature characterization of single nucleotide variants in hypertrophic cardiomyopathy. *50th Computing in Cardiology Conference (CinC-2023)*

3. V. P. Soloviev, P. Larrañaga, C. Bielza (2023). Variational quantum algorithm parameter tuning with estimation of distribution algorithms. *IEEE Congress on Evolutionary Computation*

4. V. P. Soloviev, C. Bielza, P. Larrañaga (2023). A probabilistic perspective for optimizing the parameters of quantum heuristics using evolutionary algorithms. *Quantum Information in Spain ICE-8*

5. J. Casajús-Setién, C. Bielza, P. Larrañaga (2023). Anomaly-based intrusion detection in IIoT networks using transformer models. *IEEE International Conference on Cyber Security and Resilience*

6. C. Villa-Blanco, A. Bregoli, C. Bielza, P. Larrañaga, F. Stella (2022). Structure learning algorithms for multidimensional continuous time Bayesian network classifiers. *Proceedings of the Eleventh International Conference on Probabilistic Graphical Models. JMLR Workshop and Conference Proceedings*, 186, 313-324

7. E. Valero-Leal, P. Larrañaga, C. Bielza (2022). Interpretable time-varying dynamic Bayesian networks with applications to Earth climate modelling. *Proceedings of the Eleventh International Conference on Probabilistic Graphical Models. JMLR Workshop and Conference Proceedings*, 186, 373-384

8. J. Casajús-Setién, P. Larrañaga, C. Bielza (2022). Evolutive sdversarially-trained Bayesian network autoencoder for interpretable anomaly detection. *Proceedings of the Eleventh International Conference on Probabilistic Graphical Models. JMLR Workshop and Conference Proceedings*, 186, 397-408

9. V. P. Soloviev, P. Larrañaga, C. Bielza (2022). Quantum parametric optimization with estimation of distribution algorithms. *The Genetic and Evolutionary Computation Conference*, 2247-2250, ACM Digital Library

10. E. Valero, P. Larranñaga, C. Bielza (2022). Extending MAP-independence for Bayesian network explainability. *Heterodox Methods for Interpretable and Efficient Artificial Intelligence*, 1-6

11. J.L. Moreno, N. Bernaola, C. Bielza, P. Larranñaga (2021). Learning and visualizing massive Bayesian networks with FGES-Merge and BayeSuites. *New Bridges between Mathematics and Data Science*

12. E. Valero, C. Bielza, P. Larranñaga (2021). Explaining Bayesian networks using MAP-independence. Some new properties. *New Bridges between Mathematics and Data Science*

13. V. P. Soloviev, C. Bielza and P. Larrañaga (2021). Quantum-inspired estimation of distribution algorithm to solve the travelling salesman problem. *IEEE Congress on Evolutionary Computation*, 416-425, IEEE

14. M. A. Riaño-Sánchez, C. Bielza, P. Larrañaga (2021). Prediction of COVID-19 severity in Madrid region with Model-leaf trees. *II Workshop of Spanish A.I. Research Groups in Biomedicine. Conferencia Española para la Inteligencia Artificial*, 840-845

15. N. Bernaola, M. Michiels, C. Bielza, P. Larrañaga (2020). BayesSuites: An open web framework for visualization of massive Bayesian networks. *10th International Conference on Probabilistic Graphical Models. Proceedings of Machine Learning Research*, 138, 593-596

16. N. Bernaola, P. Larrañaga, C. Bielza (2019). Using Bayesian networks for differential analysis of gene regulatory networks. *3rd HBP Student Conference on "Interdisciplinary Brain Research"*

17. B. Mihaljevic, C. Bielza, and P. Larrañaga (2019). Multivariate comparison of human and mouse pyramidal cell dendritic morphologies. *3rd HBP Student Conference on "Interdisciplinary Brain Research"*

18. B. Mihaljevic, C. Bielza, and P. Larrañaga (2018). Learning Bayesian network classifiers with completed partially directed acyclic graphs. *Proceedings of the Ninth International Conference on Probabilistic Graphical Models. JMLR Workshop and Conference Proceedings 72*, 272-283

19. I. Córdoba-Sánchez, G. Varando, C. Bielza and P. Larrañaga (2018). A partial orthogonalization method for simulating covariance and concentration graph matrices. *Proceedings of the Ninth International Conference on Probabilistic Graphical Models. JMLR Workshop and Conference Proceedings 72*, 61-72

20. F. Rodriguez-Sanchez, P. Larrañaga and C. Bielza (2018). Discrete model-based clustering with overlapping subsets of attributes. *Proceedings of the Ninth International Conference on Probabilistic Graphical Models. JMLR Workshop and Conference Proceedings*

21. M. Benjumeda, S. Luengo-Sanchez, P. Larrañaga, C. Bielza (2018). Bounding the complexity of structural expectation-maximization. *Workshop on Tractable Probabilistic Models within the 35th International Conference on Machine Learning*, 1-3

22. G. Varando, C. Bielza, P. Larrañaga (2018). MultiMap: An application to visualize, edit and analyze spatial data. *2nd HBP Student Conference on "Transdisciplinary Research Linking Neuroscience, Brain Medicine and Computer Science"*

23. J. Mesonero, C. Bielza, P. Larrañaga (2017). Architecture for anomaly detection in a laser heating surface process. *Proceedings of 22nd IEEE International Conference on Emerging Technologies And Factory Automation. Workshop on Cyber-Physical Systems and Smart Networked Systems*, 1-4

24. I. Leguey, S. Kato, C. Bielza, P. Larrañaga (2017). Hybrid mutual information. *International Directional Statistics Workshop*, 47-47

25. S. Luengo-Sanchez, C. Bielza, P. Larrañaga (2017). Directional-linear data clustering using structural expectation-maximization algorithm. *International Directional Statistics Workshop*, 48-49

26. J. Diaz, C. Bielza, P. Larrañaga (2017). Machine learning-based CPS for clustering high trhoughput machining cycle conditions. *SME NAMRC 45*

27. D. Atienza, C. Bielza, P. Larrañaga (2016). Anomaly detection with a spatio-temporal tracking of the laser spot. *Proceedings of the Eight European Starting AI Researcher Symposium*, 137–142

28. M. Benjumeda, C. Bielza, P. Larrañaga (2016). Learning tractable multidimensional Bayesian network classifiers. *Proceedings of the Eighth International Conference on Probabilistic Graphical Models. JMLR Workshop and Conference Proceedings*, 52, 13-24

29. P. Fernandez-Gonzalez, P. Larrañaga, C. Bielza (2016). Bayesian Gaussian networks for multidimensional classification of morphologically characterized neurons in the NeuroMorpho repository. *XVII Conferencia de la Asociación Española para la Inteligencia Artificial*, 39-48

30. P. Larrañaga (2016). Bayesian networks for neuroscience. *International Workshoop on Data Science and Engineering Applications*, 23-24

31. P. Fernández-González, C, Bielza, P. Larrañaga (2015). Multidimensional classifiers for neuroanatomical data. *ICML Workshop on Statistics, Machine Learning and Neuroscience*, 1-6

32. M. Benjumeda, P. Larrañaga, C. Bielza (2015). Learning low inference complexity Bayesian networks. *XVI Spanish Conference on Artificial Intelligence*, 11-20

33. L. Anton-Sanchez, C. Bielza, P. Larrañaga (2013). Towards optimal neuronal wiring through estimation of distribution algorithms. *Proceedings of the 15h Annual Conference companion on Genetic and Evolutionary Computation Conference Companion*, 1647-1650, ACM Digital Library

34. B. Mihaljevic, C. Bielza, P. Larrañaga (2013). BayesClass: An R package for learning Bayesian network classifiers. *Proceedings of UseR! - The R User Conference*, 53-53

35. J.A. Fernández del Pozo, C. Bielza, P. Larrañaga (2012). Stratified cross-validation in multi-label classification using genetic algorihms. *XXXIII Congreso Nacional de Estadística e Investigación Operativa*

36. R. Santana, C. Bielza, P. Larrañaga (2012). Multi-objective optimization approach to the analysis of inter-subject and inter-session variability in BCI experiments. *International Joint Conference on Neural Networks*, poster

37. P.L. López-Cruz, C. Bielza, P. Larrañaga (2012). Learning mixtures of polynomials from data using B-spline interpolation. *Sixth European Workshop on Probabilistic Graphical Models*, 211-218, DECSAI-University of Granada

38. R. Santana, C. Bielza, P. Larrañaga (2012). Maximizing the number of polychronous groups in spiking networks. *Companion Material Proceedings of the 14th Annual Genetic and Evolutionary Computation Conference*, 1499-1500

39. R. Armañanzas, P. Martínez-Martín, C. Bielza, P. Larrañaga (2012). Restating clinical impression of severity index for Parkinson's disease using just non-motor criteria. *25th European Conference on Operational Research*, 227–227

40. R. Santana, C. Bielza, P. Larrañaga (2011). An ensemble of classifiers with multiple sources of information for MEG data. *Proceedings of the MEG Mind Reading Challenge of the International Conference on Artificial Neural Networks*, 25-30

41. A. Ibáñez, P. Larrañaga, C. Bielza (2011). Predicting the h-Index with cost-sensitive naive Bayes. *Proceedings of the 11th International Conference on Intelligent Systems Design and Applications*, 599-604, IEEE Publishers

42. H. Borchani, C. Bielza, and P. Larrañaga (2011). Learning multi-dimensional Bayesian network classifiers using Markov blankets: A case study in the prediction of HIV protease inhibitors. *Workshop on Probabilistic Problem Solving in Biomedicine*, 29–40

43. D. Morales, C. Bielza, and P. Larrañaga (2011). Spatial clustering analysis of functional magnetic resonance imaging data. *Proceedings of the Fields-MITACS Conference on Mathematics of Medical Imaging*, poster abstract 1.4

44. J. H. Zaragoza, E. Sucar, E. F. Morales, C. Bielza, P. Larrañaga (2011). Bayesian chain classifiers for multidimensional classification. *Proceedings of Twenty-Second International Joint Conference on Artificial Intelligence*, 2192–2197, AAAI Press

45. R. Santana, H. Karshenas, C. Bielza, P. Larrañaga (2011). Quantitative genetics in multi-objective optimization algorithms: From useful insights to effective methods. *Proceedings of the 2011 Genetic and Evolutionary Conference*, 91-92, ACM Digital Library

46. R. Santana, H. Karshenas, C. Bielza, P. Larrañaga (2011). Regularized k-order Markov models in EDAs. *Proceedings of the 2011 Genetic and Evolutionary Conference*, 593–600, ACM Digital Library

47. R. Santana, C. Bielza, P. Larrañaga (2011). Affinity propagation enhanced by estimation of distribution algorithms. *Proceedings of the 2011 Genetic and Evolutionary Conference*, 331-338, ACM Digital Library

48. H. Karshenas, R. Santana, C. Bielza, P. Larrañaga (2010). Multi-Objective decomposition with Gaussian Bayesian networks. *Proceedings of the International Conference on Metaheuristics and Nature Inspired Computing*, paper 119

49. H. Borchani, C. Bielza, P. Larrañaga (2010). Learning CB-decomposable multi-dimensional Bayesian network classifiers. *Fifth European Workshop on Probabilistic Graphical Models*, 25–32, HIIT Publications 2010-2

50. A. Cuesta-Infante, R. Santana, J.I. Hidalgo, C. Bielza, P. Larrañaga (2010). Bivariate empirical and n-variate Archimedean copulas in estimation of distribution algorithms. *IEEE Congress on Evolutionary Computation*, 1-8, IEEE Press

51. P. López, C. Bielza, P. Larrañaga, R. Benavides-Piccione, J. DeFelipe (2010). 3D simulation of dendritic morphology using Bayesian networks. *16th Annual Meeting of the Organization for Human Brain Mapping*, poster

52. D. Vidaurre, C. Bielza, P. Larrañaga (2009). Variable selection in local regression models via an iterative LASSO. *The Eighth Workshop on Uncertainty Processing*, 237–250

53. R. Santana, C. Bielza, J. A. Lozano, P. Larrañaga (2009). Mining probabilistic models learned by EDAs in the optimization of multi-objective problems. *Proceedings of the 2009 Genetic and Evolutionary Conference*, 445-452, ACM Digital Library

54. R. Armañanzas, Y. Saeys, I. Inza, M. García-Torres, Y. van der Peer, C. Bielza, P. Larrañaga (2008). Mass spectrometry data analysis: It's all in the preprocessing. *Proceedings of the BeNeLux Bioinformatics Conference*, 92-92

55. A. Peréz, P. Larrañaga, I. Inza (2005). Supervised classification with Gaussian networks. Filter and wrapper approaches. *Tendencias de la Minería de Datos en España*, 379-390, Gráficas Quintanilla

56. R. Armañanzas, B. Calvo, I. Inza, P. Larrañaga, I. Bernales, A. Fullaondo, A. M. Zubiaga (2005). Clasificadores Bayesianos con selección consensuada de genes en la predicción del lupus eritematoso sistémico. *Minería de Datos: Técnicas y Aplicaciones*, 107-136, Gráficas Quintanilla

57. G. Karciauskas, T. Kocka, F. Jensen, P. Larrañaga, J. A. Lozano (2004). Learning of latent class models by splitting and merging components. *Probabilistic Graphical Models 2004*

58. V. Robles, M. S. Pérez, V. Herves, J. M. Peña, P. Larrañaga (2003). Parallel stochastic search for protein secondary structure prediction. *Fifth International Conference on Parallel Processing and Applied Mathematics*, 1162-1169, Springer

59. V. Robles, P. Larrañaga, E. Menasalvas, M. S. Pérez, V. Herves (2003). Improvement of naïve Bayes collaborative filtering using interval estimation. *The 2003 IEEE/WIC International Conference on Web Intelligence*, 168-174, IEEE Computer Society

60. G. Santafé, J. A. Lozano, P. Larrañaga (2003). Fitting mixture models with estimation of distribution algorithms. *II Congreso Español sobre Metaheurísticas, Algoritmos Evolutivos y Bioinspiridos 2003*, 232-236, Universidad de Oviedo

61. G. Santafé, J. A. Lozano, and P. Larrañaga (2003). Fitting mixture models with estimation of distribution algorithms. *Actas del II Congreso Español sobre Metaheurísticas, Algoritmos Evolutivos y Bioinspirados*, 232-236, Universidad de Oviedo

62. P. Larrañaga (2002). Learning Bayesian networks from data. Some applications in biomedicine. *15th European Conference on Artificial Intelligence. Workshop of Intelligent Data Analysis in Medicine and Pharmacology 2002*, 3-4

63. R. Blanco, I. Inza, P. Larrañaga (2002). Floating search methods in learning Bayesian networks. *First European Workshop on Probabilistic Graphical Models*, 9-16,

64. J.M. Peña, J.A. Lozano, P. Larrañaga (2002). Unsupervised learning of Bayesian networks via estimation of distribution algorithms. *First European Workshop in Probabilistic Graphical Models*, 144-151

65. Elvira Consortium (2002). Elvira: An environment for probabilistic graphical models. *First European Workshop in Probabilistic Graphical Models*, 222-230

66. P. Larrañaga, I. Inza, R. Blanco, A.J. Cerrolaza (2002). Filter vs. wrapper approaches in the selection of accurate genes on DNA microarray domains. *III Jornadas de Bioinformática*, 91-92

67. V. Robles, P. Larrañaga, J. M. Peña, M. S. Pérez (2002). Protein secondary structure prediction with naïve Bayes classifiers. *III Jornadas de Bioinformática*, 114-115

68. I. Inza, P. Larrañaga, R. Blanco, A. Cerrolaza (2002). Filter and wrapper gene selection procedures in DNA microarray domains. *VIII Iberoamerican Conference on Artificial Intelligence. Workshop BEIA, Bioinformatics and Artificial Intelligence*, 23-34, Copisteria Format

69. P. Larrañaga, E. Bengoetxea, J. A. Lozano, V. Robles, A. Mendiburu, P. de Miguel (2001). Searching for the best permutation with estimation of distribution algorithms. In *Seventeenth International Joint Conference on Artificial Intelligence. Workshop on Stochastic Search Algorithms*, 7-14

70. T. Miquélez, E. Bengoetxea, I. Morlán, and P. Larrañaga (2001). Obtención de filtros para restauración de imágenes por medio de algoritmos de estimación de distribuciones. *IX Conferencia de la Asociación Española para la Inteligencia Artificial*, 1145-1154, Servicio de Publicaciones de la Universidad de Oviedo

71. R. Blanco, P. Larrañaga, I. Inza, B. Sierra (2001). Selection of highly accurate genes for cancer classification by estimation of distribution algorithms. *European Conference on Artificial Intelligence in Medicine. Workshop on Bayesian Models in Medicine*, 29-34,

72. E. Bengoetxea, P. Larrañaga, I. Bloch, A. Perchant (2001). Image recognition with graph matching using estimation of distribution algorithms. *Proceedings of Medical Image Understanding and Analysis*, 89-92

73. C. González, J. A. Lozano, P. Larrañaga (2001). The convergence behavior of the PBIL algorithm: A preliminary approach. *International Conference in Artificial Neural Nets and Genetic Algorithms*, 228-231, Springer

74. J. M. Peña, I. Izarzugaza, J. A. Lozano, E. Aldasoro, P. Larrañaga (2001). Geographical clustering of cancer incidence by means of Bayesian networks and conditional Gaussian networks. *Artificial Intelligence and Statistics*, 266-271

75. J. A. Lozano, R. Sagarna, P. Larrañaga (2001). Parallel estimation of Bayesian networks algorithms. *Thrid International Symposium on Adaptive Systems*, 137-144

76. R. Blanco, I. Inza, P. Larrañaga (2001). Learning Bayesian networks from data by novel population–based stochastic search algorithms. *IX Conferencia de la Asociación Española para la Inteligencia Artificial*, 1095-1104, Servicio de Publicaciones de la Universidad de Oviedo

77. P. Larrañaga, R. Etxeberria, J. A. Lozano, and J. M. Peña (2000). Combinatorial optimization by learning and simulation of Bayesian networks. *Proceedings of the Sixteenth Conference on Uncertainty in Artificial Intelligence*, 343-352, Morgan Kaufmann

78. E. Bengoetxea, P. Larrañaga, I. Bloch, A. Perchant, C. Boeres (2000). Inexact graph matching using learning and simulation of Bayesian networks. An empirical comparison between different approaches with synthetic data. *Fourteenth European Conference on Artificial Intelligence. Workshop on Bayesian and Causal Networks: From Inference to Data Mining*

79. I. Inza, P. Larrañaga, B. Sierra (2000). Bayesian networks for feature subset selection. *Fourteenth European Conference on Artificial Intelligence. Workshop on Bayesian and Causal Networks: From Inference to Data Mining*

80. P. Larrañaga, R. Etxeberria, J. A. Lozano, J. M. Peña (2000). Optimization in continuous domains by learning and simulation of Gaussian networks. *Genetic and Evolutionary Computation Conference Workshop Program*, 201-204, Springer

81. B. Sierra, N. Serrano, P. Larrañaga, E. Plasencia, I. Inza, J. J. Jimenez, J. M. de la Rosa, M. L. Mora (1999). Bayesian networks as consensed voting system in the construction of a multi-classifier. A case study using intensive care unit patients data. *Workshop in Computers in Anaesthesia and Intensive Care: Knowledge-Based Information Management*, 57-66

82. R. Etxeberria, P. Larrañaga (1999). Global optimization using Bayesian networks. *Second International Symposium on Artificial Intelligence*, 332-339

83. P. Larrañaga, R. Etxeberria, J. A. Lozano, B. Sierra, I. Inza, J. M. Peña (1999). A review of the cooperation between evolutionary computation and probabilistic graphical models. *Second Symposium on Artificial Intelligence*, 314-324

84. S. Dizdarevich, F. Lizarraga, P. Larrañaga, B. Sierra, and M. J. Gallego (1997). Statistical and machine learning methods in the prediction of bankruptcy. *III International Meeting on Artificial Intelligence in Accounting, Finance, and Tax*, 85-100, Papel Copy S. L.

85. A.I. Gonzalez, M. Graña, J.A. Lozano, and P. Larrañaga (1997). Experimental results of a Michigan-like evolutionary strategy for non-stationary clustering. *International Conference on Artificial Neural Nets and Genetic Algorithms*, 555-559, Springer

86. B. Sierra, and P. Larrañaga (1997). Searching for the optimal Bayesian network in classification tasks by genetic algorithms. 4^{th} *Workshop on Uncertainty Processing*, 144-155, Ediční oddělení VŠE

87. R. Etxeberria, P. Larrañaga, J. M. Pikaza (1997). Reducing Bayesian networks' complexity while learning from data. *Causal Models and Statistical Learning*, 151-168, UNICOM

88. J. A. Lozano, P. Larrañaga, M. Graña (1996). Partitional cluster analysis with genetic algorithms: searching for the number of clusters. *Fifth Conference of International Federation of Classification Societies. Data Science, Classification and Related Methods*, 251-252, Springer

89. P. Larrañaga, B. Sierra, M. J. Gallego, and M. J. Michelena (1996). Bayesian networks induced by genetic algorithms in the prediction of the survival of breast cancer. *International Conference on Intelligent Technologies in Human-Related Sciences*, 259-266, Secretariado de Publicaciones de la Universidad de León

90. P. Larrañaga, and M. Poza (1994). Structure learning of Bayesian networks by genetic algorithms. *Studies in Classification, Data Analysis, and Knowledge Organization: New Approaches in Classification and Data Analysis*, 300-307, Springer

91. P. Larrañaga (1993). Learning Bayesian network structures by an hybrid algorithm (genetic algorithm + simulated annealing). *4th Conference of the International Federation of Classification Societies*, 59-60, Springer

92. A. Beristain, P. Larrañaga (1988). La víctima en el País Vasco. *10th International Congress on Criminology*, 5-5, SIC

Technical Reports

1. Puerto-Santana, C., Bielza, C., Larrañaga, P., Henter, G.E. (2023). *Context-specific kernel-based hidden Markov model for time series analysis*, *arXiv:2301.09870*

2. B. Mihaljevic, C. Bielza, P. Larrañaga (2022). *Learning semiparametric Bayesian networks with kernel generalized variance*. Technical Report UPM-ETSIINF/DIA/2022-1, Universidad Politécnica de Madrid

3. V.P. Soloviev, C. Bielza, P. Larrañaga (2022). *Quantum approximate optimization algorithm for Bayesian network structure learning. arXiv:2203.02400*

4. N. Bernaola, G. De Lima, M. Riaño, L. Llanos, S. Heili-Frades, O. Sanchez, A. Lara, G. Plaza, C. Carballo, P. Gallego, P. Larrañaga, C. Bielza (2022). *Decision trees for COVID-19 prognosis learned from patient data: Desaturating the ER with artificial intelligence. medRxiv*

5. F. Rodríguez-Sánchez, P. Larrañaga, C. Bielza (2017). *Multi-facet determination for clustering with Bayesian networks*. Technical Report TR:UPM-ETSIINF/DIA/2017-1, Universidad Politécnica de Madrid

6. I. Córdoba-Sánchez, C. Bielza, P. Larrañaga (2016). *Graphoids and Separoids in Model Theory*. Technical Report TR:UPM-ETSIINF/DIA/2016-1, Universidad Politécnica de Madrid

7. L. Anton-Sanchez, C. Bielza, P. Larrañaga (2015). *Evolutionary Computation of Forests with Degree- and Role-constrained Minimum Spanning Trees*. Technical Report TR:UPM-ESTIINF/DIA/2015-2, Universidad Politécnica de Madrid

8. P. Fernandez-Gonzalez, C. Bielza, P. Larrañaga (2015). *Univariate and Bivariate Truncated von Mises Distributions*. Technical Report TR:UPM-ETSIINF/DIA/2015-1. Department of Artificial Intelligence. Technical University of Madrid

9. G. Varando, C. Bielza, P. Larrañaga (2014). *Decision boundary for discrete Bayesian network classifiers*. Technical Report TR:UPM-ETSIINF/DIA/2014-1. Department of Artificial Intelligence. Technical University of Madrid

10. R. Santana, C. Bielza, P. Larrañaga (2013). *Changing conduction delays to maximize the number of polychronous groups with an estimation of distribution algorithm*. Technical Report TR:UPM-FI/DIA/2013-1. Department of Artificial Intelligence. Technical University of Madrid

11. H. Karshenas, R. Santana, C. Bielza, and P. Larrañaga (2012). *Multi-objective estimation of distribution algorithm based on joint modeling of objectives and variables*. Technical Report TR:UPM-FI/DIA/2012-2. Department of Artificial Intelligence. Technical University of Madrid

12. H. Karshenas, C. Bielza, Q. Zhang and P. Larrañaga (2012). *An interval-based multi-objective approach to feature subset selection using joint modeling of objectives and variables*. Technical Report TR:UPM-FI/DIA/2012-1. Department of Artificial Intelligence. Technical University of Madrid

13. R. Armañanzas, C. Bielza, P. Larrañaga, P. Martínez-Martín (2011). *Restating Parkinson's disease severity indices by means of non-motor criteria*. Technical Report TR:UPM-FI/DIA/2011-2. Department of Artificial Intelligence. Technical University of Madrid

14. H. Karshenas, R. Santana, C. Bielza, P. Larrañaga (2011). *Regularized model learning in estimation of distribution algorithms for continuous optimization problems.* Technical Report TR:UPM-FI/DIA/2011-1. Department of Artificial Intelligence. Technical University of Madrid

15. R. Santana, C. Bielza, P. Larrañaga (2010). *Network measures for re-using problem information in EDAs.* Technical Report TR:UPM-FI/DIA/2010-3. Department of Artificial Intelligence. Technical University of Madrid

16. P. López-Cruz, C. Bielza, P. Larrañaga, R. Benavides-Piccione, J. DeFelipe (2010). *Bayesian networks applied to the simulation and modelling of 3D basal dendritic trees from pyramidal neurons.* Technical Report TR:UPM-FI/DIA/2010-2. Department of Artificial Intelligence. Technical University of Madrid

17. C. Bielza, G. Li, P. Larrañaga (2010). *Multi-Dimensional classification with Bayesian networks.* Technical Report TR:UPM-FI/DIA/2010-1. Department of Artificial Intelligence. Technical University of Madrid

18. D. Vidaurre, C. Bielza, P. Larrañaga (2009). *Learning a L1-regularized Gaussian Bayesian network in the equivalence class space.* Technical Report. UPM.FI/DIA/2009-2. Department of Artificial Intelligence. Technical University of Madrid

19. C. Bielza, J. A. Fernández del Pozo, P. Larrañaga, E. Bengoetxea (2009). *Multidimensional statistical analysis of the parameterization of a genetic algorithm for the optimal ordering of tables.* Technical Report. UPM-FI/DIA/2009-1. Department of Artificial Intelligence. Technical University of Madrid

20. R. Santana, C. Echegoyen, A. Mendiburu, C. Bielza, J. A. Lozano, P. Larrañaga, R. Armañanzas and S. Shakya (2009). *MATEDA: A suite of EDA programs in Matlab.* Technical Report EHU-KZAA-IK-2/09. Department of Computer Science and Artificial Intelligence. University of the Basque Country

21. R. Santana, P. Larrañaga, J. A. Lozano (2009). *Learning factorizations in estimation of distribution algorithms using affinity propagation.* Technical Report EHU-KZAA-IK-1/09. Department of Computer Science and Artificial Intelligence. University of the Basque Country

22. R. Santana, P. Larrañaga, J. A. Lozano (2005). *Properties of Kikuchi approximations constructed from clique based decompositions.* Technical Report EHU-KZAA-IK-2/05. Department of Computer Science and Artificial Intelligence. University of the Basque Country

23. G. Santafé, J. A. Lozano, P. Larrañaga (2004). *Full Bayesian model averaging of naive Bayes for clustering.* Technical Report EHU-KZAA-IK-3/04. Department of Computer Science and Artificial Intelligence. University of the Basque Country

24. G. Santafé, J. A. Lozano, P. Larrañaga (2004). *El algoritmo TM para clasificadores Bayesianos.* Technical Report EHU-KZAA-IK-2/04. Department of Computer Science and Artificial Intelligence. University of the Basque Country

25. T. Miquelez, E. Bengoetxea, and P. Larrañaga (2004). *Applying Bayesian classifiers to evolutionary computation.* Technical Report KAT-IK-04-01. Department of Architecture and Technology of Computers. University of the Basque Country

26. R. Blanco, I. Inza, and P. Larrañaga (2001). *Learning Bayesian networks structures by estimation of distribution algorithms. An empirical comparison among four initializations.* Technical Report EHU-KZAA-IK-2-01. Department of Computer Science and Artificial Intelligence. University of the Basque Country

27. E. Bengoetxea, P. Larrañaga, I. Bloch, A. Perchant, and C. Boeres (2001). *Inexact graph matching using learning and simulation of probabilistic graphical models.* Technical Report 2001D017. École Nationale Supérieure des Télécomunications, Paris

28. I. Inza, P. Larrañaga, and B. Sierra (2000). *Feature weighting for nearest neighbor by estimation of Bayesian networks algorithms.* Technical Report EHU-KZAA-IK-3-00. Department of Computer Science and Artificial Intelligence. University of the Basque Country

29. J. A. Lozano, C. González, P. Larrañaga, and I. Inza (2000). *Analyzing the PBIL algorithm by means of discrete dynamical systems*. Technical Report EHU-KZAA-IK-2-00. Department of Computer Science and Artificial Intelligence. University of the Basque Country

30. B. Sierra, I. Inza, P. Larrañaga (2000). *Inteligencia computacional aplicada a la predicción del voto en encuestas electorales*. Technical Report EHU-KZAA-IK-1-00. Department of Computer Science and Artificial Intelligence. University of the Basque Country

31. P. Larrañaga, R. Etxeberria, J. A. Lozano, and J. M. Peña (1999). *Optimization by learning and simulation of Bayesian and Gaussian networks*. Technical Report EHU-KZAA-IK-4-99. Department of Computer Science and Artificial Intelligence. University of the Basque Country

32. C. González, J. A. Lozano, and P. Larrañaga (1999). *The convergence behavior of PBIL algorithm: A preliminar approach*. Technical Report EHU-KZAA-IK-3-99. Department of Computer Science and Artificial Intelligence. University of the Basque Country

33. I. Inza, P. Larrañaga, R. Etxeberria, and B. Sierra (1999). *Feature subset selection by Bayesian networks based optimization*. Technical Report EHU-KZAA-IK-2-99. Department of Computer Science and Artificial Intelligence. University of the Basque Country

34. I. Inza, M. Merino, P. Larrañaga, J. Quiroga, B. Sierra, and M. Girala (1999). *Feature subset selection by population–based incremental learning. A case study in the survival of cirrhotic patients treated with TIPS*. Technical Report EHU-KZAA-IK-1-99. Department of Computer Science and Artificial Intelligence. University of the Basque Country

35. I. Inza, P. Larrañaga, B. Sierra, M. Niño (1998). *Combination of classifiers. A case study in oncology*. Technical Report EHU-KZAA-IK-1-98. Technical Report EHU-KZAA-IK-1-99. Department of Computer Science and Artificial Intelligence. University of the Basque Country

36. P. Larrañaga, M. Poza, J. A. Diego, and E. Arnaez (1994). *Ayuda al diagnóstico de la respuesta a un programa de rehabilitación de toxicómanos, a través de redes causales probabilísticas y árboles de clasificación inducidos por algoritmos genéticos*. Technical Report EHU-KZAA-IK-4-94. Department of Computer Science and Artificial Intelligence. University of the Basque Country

37. P. Larrañaga, C. M. H. Kuijpers, M. Poza, and R. Murga (1994). *Optimal decomposition of Bayesian networks by genetic algorithms*. Technical Report EHU-KZAA-IK-3-94. Department of Computer Science and Artificial Intelligence. University of the Basque Country

38. P. Larrañaga, C. M. H. Kuijpers, and R. Murga (1994). *Tackling the travelling salesman problem with evolutionary algorithms: Representations and operators*. Technical Report EHU-KZAA-IK-2-94. Department of Computer Science and Artificial Intelligence. University of the Basque Country

39. P. Larrañaga (1993). *Tratamiento informático de encuestas*. Technical Report 9529. Department of Computer Science and Artificial Intelligence. University of the Basque Country

40. P. Larrañaga (1993). *Estatistika. Ariketak*. Technical Report 9528. Department of Computer Science and Artificial Intelligence. University of the Basque Country

41. P. Larrañaga (1993). *Estatistika. Teoria*. Technical Report 9527. Department of Computer Science and Artificial Intelligence. University of the Basque Country

42. P. Larrañaga (1986). *Estadística. Ejercicios*. Computer Science School. University of the Basque Country

43. P. Larrañaga (1986). *Estadística. Apuntes de Teoría*. Computer Science School. University of the Basque Country

Jointly Granted Awards

1. *Most Cited Scientific Paper Prize* awarded by the Technical University of Madrid (2021)

2. Best Paper of the *II Workshop of Spanish Research Groups on Artificial Intelligence in Biomedicine (IABiomed-2021)*, Málaga (2021)

3. Best PhD thesis of L. Anton-Sanchez (under my supervision) awarded by the Technical University of Madrid, Madrid (2018)
4. Second Prize in the *Frances Allen Award of the Conferencia Española de Inteligencia Artificial*, Granada 2018
5. Best student paper of the *9th International Conference on Probabilistic Graphical Models*, Prague (2018)
6. Second Prize in the *Poster Competition of the Advances in Directional Statistics Conference*, Rome (2017)
7. Best *PhD project on Artificial Intelligence given by the Spanish Artificial Intelligence Conference* to Theoretical Studies and New Approaches to Bayesian Network Classifiers, Albacete (2015)
8. Best paper of the *1st Machine Learning for Cyber Physical Systems Conference*, Lemgo (2015)
9. Best PhD thesis of P.L. López-Cruz (under my supervision) awarded by the Technical University of Madrid, Madrid (2015)
10. Best student paper of the *15th Annual Genetic and Evolutionary Computation Conference (GECCO)*, Amsterdam (2013)
11. "Marco Ramoni" best paper of the *14th Conference on Artificial Intelligence in Medicine*, AIME, Murcia (2013)
12. Second position on the competition "MEG Mind Reading" on *PASCAL2 and the International Conference on Artificial Neural Networks*, Espoo (2011)
13. Best paper of the *International Society of Applied Intelligence (ISAI)*, Cordoba (2010)
14. First Position on the competition "Biomag Data Analysis Competition 2010" on *Multivariate Classification of MEG brain data*, Dubrovnik, Croacia (2010)
15. Best paper of the *Mexican International Conference on Artificial Intelligence*, Guanajuato, México (2009)
16. Best paper of the *III International Meeting on Artificial Intelligence in Accounting, Finance and Tax*, Huelva (1997)

C. Research Projects

Public Projects

1. *Estimation of Distribution Algorithms in Machine Learning and Optimization*. Ministry of Science and Innovation, 2023-2026
2. *Community for Neuroscience and Neurotechnology*, Universidad Politécnica de Madrid, 2022-2024
3. *Convenio entre la Comunidad de Madrid y la Universidad Politécnica de Madrid para la Concesión Directa de una Subvención para el Apoyo al Desarrollo del Nodo ELLIS Mediante la Implantación de una Unidad ELLIS en la Comunidad de Madrid*, Madrid Autonomous Region, 2022-2023
4. *Bayesian Networks for Interpretable Machine Learning and Optimization (BAYES-INTERPRET)*, Ministry of Science and Innovation, 2022-2024
5. *MAIAR (MAterials Informatics & Advanced Robotics Lab) – Desarrollo de una Solución Flexible de Self-Driving Lab Basada en la Integración de Materials Informatics y Robótica Avanzada para el Diseño de Nuevos Productos con Baja Huella de Carbono*, Ministry of Economic Affairs and Digital Transformation, 2022-2024
6. *Plataforma Científico-Tecnológica para Alerta, Diagnóstico, Pronóstico, Terapia y Seguimiento de la Enfermedad COVID19 y Futuras Pandemias (COVIDTECH-CM)*, Madrid Autonomous Region, 2020-2023
7. *Investigación y Desarrollo de Metodología de la Inteligencia Artificial (ML) Orientado a Casos Industriales de Uso de Datos Continuos de Ultra-Alta Velocidad (DSTREAMS)*, Ministry of Science, Innovation and Universities, 2020-2024
8. *IT Basket*, Madrid Autonomous Region, 2019-2020
9. *Research Spanish Network "Therapeutic Applications of Systems Neuroscience to Central Nervous System Diseases" (Clisyne)*, Ministry of Science, Innovation and Universities, 2019-2021
10. *Research Spanish Network "Artificial Intelligence in Biomedicine"*, Ministry of Science, Innovation and Universities, 2019-2021
11. *HBP - Human Brain Project. SGA3*. Horizon 2020, The EU Framework Programme for Research and Innovation, European Commission, 2020-2023
12. *Bayesian Networks for Data Streams*. Ministry of Science and Innovation, 2021-2023
13. *HBP - Human Brain Project. SGA2*. Horizon 2020, The EU Framework Programme for Research and Innovation, European Commission, 2018-2020
14. *Supercomputación para la Inteligencia Artificial*. Ministry of Economy, Industry and Competitiveness, 2018-2020
15. *Clasificadores Bayesianos Multidimensionales para la Interpretación de Emociones en Texto y Vídeo*, National Commission of Scientific and Technological Research (CONICYT), Chile, 2018-2019
16. *Big Data and Scalable Data Analysis (Spanish Excellence Network)*. Ministry of Economy, Industry and Competitiveness, 2017-2019
17. *Avances en Clasificación Multidimensional y Detección de Anomalías con Redes Bayesianas*. Ministry of Economy and Competitiveness, 2017-2019
18. *HBP - Human Brain Project. SGA1*. Horizon 2020, The EU Framework Programme for Research and Innovation, European Commission, 2016-2018
19. *Bayesian Network Learning with non-Directional and Directional Variables for Association Discovery, Multi-Target Prediction and Clustering*. Ministry of Economy and Competitiveness, 2014-2016

20. *Conceptos y Aplicaciones de los Sistemas Inteligentes*. Comunidad de Madrid, 2014-2016

21. *Big Data and Scalable Data Analysis (Spanish Excellence Network)*. Ministry of Economy and Competitiveness, 2015-2016

22. *Multimodal Interaction in Pattern Recognition and Computer Vision*. Ministry of Economy and Competitiveness, 2015-2016

23. *HBP - Human Brain Project. Ramp Up Phase*. FET Flagship of the European Research Council, European Commission, 2013-2016

24. *Spanish Network for the Advancement and Transference of Computational Intelligence*. Ministry of Economy and Competitiveness, 2012-2012

25. *Spanish Network on Data Mining and Machine Learning*. Ministry of Science and Innovation, 2010-2012

26. *HBP - Human Brain Project*. FET Flagship Initiative Preparatory Actions, 2011-2011

27. *Data Mining with Probabilistic Graphical Models: New Algorithms and Applications*. Ministry of Science and Innovation, 2011-2013

28. *Spanish Network for the Advancement and Transfer of Applied Computational Intelligence*. Ministry of Economy and Competitiveness, 2011-2011

29. *A Biomedical Virtual Lab for Researching Alzheimer Disease. A Framework based on Computational Intelligence*. Ministry of Science and Innovation, 2010-2011

30. *Multi-Dimensional Classifiers based on Probabilistic Graphical Models. Applications in Computer Vision*. Ministry of Science and Innovation, 2009-2010

31. *Cajal Blue Brain Project*. Ministry of Science and Innovation, 2008-2018

32. *CENIT: Technologies for Rendering Services in Mobility in the Intelligent Future Universe*, Ministry of Science and Innovation, Center for the Industrial Technological Development, 2008-2012

33. *mIO!: Technologies for the Intelligent Universe of the Future*. Center for the Industrial Technological Development, 2008-2011

34. *Incremental Learning of Bayesian Networks with Data Streams*. Ministry of Foreign Affairs and Cooperation, 2008-2009

35. *Assessing Quality of Individual Predictions in Medical Decision Support Systems*. National Institutes of Health, USA (1-R01-LM009520-01), 2007–2010

36. *CONSOLIDER: Multimodal Interaction in Pattern Recognition and Computer Vision*, Ministry of Education and Science, 2007-2012

37. *Computational Intelligence with Probabilistic Graphical Models: From Methodological Development to Efficient Implementations*, Basque Government, 2007-2012

38. *Assessing Quality of Individuals Prediction in Medical Decision Support Systems*, National Institutes of Health, USA (1-R01-LM009520-01), 2007-2010

39. *Spanish Network on Computational Biomedicine*, Carlos III Institute of Health, 2007-2010

40. *Spanish Network on Data Mining and Machine Learning*. Ministry of Science and Technology, 2007-2007

41. *Application of Genomic and Proteomic to the Identification of Therapeutical Targets for Human Autoimmune Systematic Diseases*, Basque Government, 2005-2007

42. *Biomedical Informatics*, University of the Basque Country, 2005-2006

43. *Coordination and Articulation of Research, Development and Innovation based on Soft Computing*, Ministry of Education and Science, 2005-2006

44. *Computational Intelligence with Bayesian Networks, Gaussian Networks and Kikuchi Approximations*, Ministry of Education and Science, 2006-2008

45. *Spanish Network on Probabilistic Graphical Models and Applications*, Ministry of Education and Science, 2005-2006

46. *Methodological Advances and Applications of Estimation of Distribution Algorithms*, Basque Government, 2004-2005

47. *Spanish Net on Data Mining and Machine Learning*, Ministry of Science and Technology, 2005-2005

48. *Spanish Net on Pattern Recognition and Applications*, Ministry of Science and Technology, 2004-2005

49. *Scores for the Selection of Relevant Genes in DNA Microarrays*. Diputación Foral de Gipuzkoa, 2004-2004

50. *Grant for Research Groups*, University of the Basque Country, 2003-2005.

51. *Knowledge Discovery and Analysis in Genomic and Proteomic for the Development of Products and Services in Health and Life Quality*, Basque Government, 2003-2005

52. *Spanish Net on Data Mining and Machine Learning*, Ministry of Science and Technology, 2003-2004

53. *Spanish Net on Metaheuristics on Optimization*, Ministry of Science and Technology, 2003-2004

54. *Genetic Networks: Modelling the Interaction Between Genes by Means of Bayesian and Gaussian Networks*, Diputación Foral de Gipuzkoa, 2003-2003

55. *Application of Genomic and Proteomic to the Identification of Therapeutic Dianas in Human Autoimun Diseases*, Basque Government, 2002-2004

56. *Modelling Gene Interaction by Means of Bayesian and Gaussian Networks*, Ministry of Health and Consum, 2002-2004

57. *Learning of Probabilistic Graphical Models. Application to the Clustering of Data from Microarrays*, Ministry of Science and Technology, 2002-2004

58. *Grant to Research Groups*, University of the Basque Country. 2001-2003

59. *Recognizing Internal Structures of the Brain by Means of Methods Based on Fuzzy Logic, Bayesian Networks, Genetic Algorithms and Estimation of Distribution Algorithms*, Basque Government, 2001-2003

60. *Automatic Generation of Cases for the Validation and Verification of Software by Means of Advanced Optimization Techniques*, Basque Government, 2001-2002

61. *Development of a System for the Meteorological Prediction*, Basque Government, 2001-2001

62. *Recognition of Internal Structures of the Brain with the Help of and Anatomical Atlas and Methodology Based on Graphs and Bayesian Networks*. Ministry of Education and Science, 2000-2001

63. *Estimation of Distribution Algorithms in Combinatorial Optimization Problems*, University of the Basque Country, 2000-2000

64. *A Parallel Approach to Combinatorial Optimization*, Basque Government, 1999-2000

65. *Automatic Updating of Postal Codes Using Heuristics Applied to Machine Learning and Pattern Recognition*, Diputación Foral of Guipuzcoa, Spain, 1998-1998

66. *Development of Software for Probabilistic Graphical Models*, Ministry of Education and Science, 1997-2000

67. *Genetic Algorithms for the Induction of Intelligent Systems with Applications to Oncological Records in the Basque Country*, Basque Government, 1997-1999

68. *Solving the Vehicle Routing Problem with Combinatorial Optimization Heuristics*. Diputación Foral of Guipuzcoa, Spain, 1997-1997

69. *Predicting Enterprise Bakcrupt Using Statistical and Artificial Intelligence Based Classification Techniques*, Diputación Foral of Guipuzcoa, Spain, 1997-1997

70. *Structural Learning of Bayesian Networks for Classification*, University of the Basque Country, 1997-1997

71. *Cluster Analysis Applied to Market Segmentation*, Diputación Foral of Guipuzcoa, Spain, 1996-1996

72. *Comparison Between Statistical and Artificial Intelligence Methods for the Prediction of the Surviavl in Breast Cancer*, Diputación Foral of Guipuzcoa, Spain, 1996-1996

73. *A Decision Systems based on Graphics, Hypertext and Probabilistic Causal Networks for the Acquisition, Updating of the Knowledge and Decision Making*, Diputación Foral of Guipuzcoa, Spain, 1996-1996

74. *Stocastical Methods and Models for Controling Autonomous Systems: Stocastical Neural Networks, Bayesian Networks and Evolutionary Algorithms*, Basque Government, 1995-1996

75. *High Order Boltzman Machines for the Recognition of Optical Characters*, University of the Basque Country, 1995–1995

76. *Development, Implementation, and Validation of an Algorithm for Learning Bayesian Networks from Data*, Spanish Ministry of Health, 1994-1994

77. *Simulation and Structural Learning of Probabilistic Causal Networks. Application to Pediatrics*, Diputación Foral of Guipuzcoa, Spain, 1994-1994

78. *Probabilistic Causal Networks and Sampling Methods Applied to Medical Domains*, Diputación Foral of Guipuzcoa, Spain, 1994-1994

79. *Stochastic Methods for Classificacion and Learning: Neural Networks, Bayesian Networks and Classification Trees*, Basque Government, 1993-1994

Private Projects

1. Etxe-Tar S.A. *Investigación del Proceso de Mecanizado y Corte Láser de Piezas Esbeltas de Aluminio para el Sector de la Movilidad Sostenible y Desarrollo de la Nueva Solución de Manufactura Híbrida y Digital del Futuro (Al2Future)*, 2023-2025

2. REPSOL S.A. *Specific Collaboration Agreement Number 5: Induced Seismicity*, 2022-2023

3. Titanium Industrial Security. *Network SLIcing SEcurity for Next Generation Communications (SLISE)*, 2021-2024

4. REPSOL S.A. *Specific Collaboration Agreement Number 4: Bayesian Approach for AI*, 2021-2022

5. Aingura IIoT. *Desarrollo de un Sistema Diagnóstico Basado en Machine Learning para la Detección en Tiempo Real de Degradación Temprana en el Proceso de Fabricación de Medicamentos (MLpharma)*, 2021-2022

6. Idealista. *Herramienta de Pptimización de Carteras en Mercados Inmobiliarios*, 2021-2022

7. Aingura IIoT. *MANtenimiento Predictivo FEderado e Inteligente de CRUZamientos (MANFECRUZ)*, 2021-2023

8. Adif (Competitive public tender). *Federated Artificial Intelligence for Comprehensive Infrastructure Maintenance (FAI4CIM)*, 2021-2023

9. Aingura IIoT. *Investigación y Desarrollo de un Sistema Basado en Machine Learning para la Caracterización y Monitorización de Puentes en Tiempo Real (ML4bridges)*, 2021-2023

10. Ikergune AIE. *Nueva Sonda de Ciberseguridad para la Detección, Gestión y Respuesta de Brechas de Seguridad, Ataques o Anomalías en Redes Industriales (INMAP-R2)*, 2021-2021

11. REPSOL S.A. *Specific Collaboration Agreement Number 3: Batch Reinforcement Learning*, 2020-2021

12. Grant of the Fundación BBVA to Research Groups on the topic of SARS-CoV-2 and COVID-19 within project *Outcome Prediction and Treatment Efficiency in Patients Hospitalized with Covid-19 in Madrid: A Bayesian Network Approach*, 2020-2022

13. Grant of the Fundación BBVA to Research Groups on the topic of Big Data within project *Score-based Nonstationary Temporal Bayesian Networks. Applications in Climate and Neuroscience*, 2020-2022

14. REPSOL S.A. *Specific Collaboration Agreement Number 2: Artificial Intelligence and Data Science to Analyze Complex Problems*, 2019-2020

15. REPSOL S.A. *Specific Collaboration Agreement Number 1*, 2018-2019

16. OLOCIP 11 *Predicción en Fútbol Profesional*, 2018-2018

17. Etxe-Tar S.A. and Aingura IIoT S.L.U. Subcontracting within project *Nueva Infraestructura IoT Industrial para la Fábrica que Aprende (LEARNIIoT)*, granted by Centro para el Desarrollo Tecnológico Industrial (CDTI) of the Ministry of Economy and Competitiveness within Proyectos de Investigación y Desarrollo Individuales Program, 2018-2020

18. Etxe-Tar S.A. *Gestión Energética Avanzada para Máquina Herramienta de Nueva Generación (EMON)*, 2017-2017

19. Grant of the Fundación BBVA to Research Groups on the topic of Big Data within project *Multi-view Clustering with Bayesian Networks*, 2016-2018

20. OLOCIP 11 contracting within project *Desarrollo de un Programa Informático de Predicción y Análisis en el Ámbito Deportivo Utilizando Inteligencia Artificial*, 2016-2017

21. Etxe-Tar S.A. Subcontracting within project *Investigación en Sistemas Ciber-físicos para la Detección de Anomalías Mediante Modelos Probabilísticos Dinámicos en Nuevos Procesos de Tratamiento Térmico Medioambientalmente Sostenibles (TERMPROB)* granted by Centro para el Desarrollo Tecnológico Industrial (CDTI) of the Ministry of Economy and Competitiveness within Proyectos de Investigación y Desarrollo Individuales Program, 2016-2018

22. Etxe-Tar S.A. Subcontracting within project *Desarrollo de Bienes de Equipo Avanzados para la Cadena de Valor Manufacturera Basados en Nuevos Conceptos para la Ayuda a la Toma de Decisoines Orientada a la Generación de Servicios de Alto Valor Añadido para la Recuperación de la Competitividad de la Industria Española (CARES)* granted by Centro para el Desarrollo Tecnológico Industrial (CDTI) of the Ministry of Economy and Competitiveness within Programa Estratégico de Consorcios de Investigación Empresarial Nacional (CIEN), 2015-2019

23. GAINDU S.L. Subcontracting within project *Desarrollo de Bienes de Equipo Avanzados para la Cadena de Valor Manufacturera Basados en Nuevos Conceptos para la Ayuda a la Toma de Decisoines Orientada a la Generación de Servicios de Alto Valor Añadido para la Recuperación de la Competitividad de la Industria Española (CARES)* granted by Centro para el Desarrollo Tecnológico Industrial (CDTI) of the Ministry of Economy and Competitiveness within Programa Estratégico de Consorcios de Investigación Empresarial Nacional (CIEN), 2015-2019

24. Abbott Products Operations AG. *Probabilistic Mapping of PDQ-39 (or PDQ-8) to the EQ-5D Utility Index Based on Multi-Dimensional Bayesian Network Classifiers*, 2011

25. Atos Origin (P10-1015-100). *Dynamic Probabilistic Graphical Models and their Applications*, 2009-2011

26. Produban (Banco Santander). *Minería de Datos y Geomarketing sobre Datos Financiero/Bancarios*, 2009-2010

27. Panda Security. *Adaptación Dinámica del Cambio en Sistemas de Aprendizaje. Problemática Drift*, 2009

28. Fundación Gaiker Centro Tecnológico. *Análisis Bioinformático de Microarrays*, 2006

29. Progenika Biopharma, S.A. *Creación de Modelos Estadísticos a Partir de Datos. Clínicos y Genéticos Provenientes de una Muestra de Enfermos con Colitis y Enfermedad de Crohn*, 2006

30. Panda Software S. L. *Asesoría Técnica en Minería de Datos y Reconocimiento de Patrones*, 2005

31. Panda Software S. L. *Análisis Estadístico*, 2004

32. Arvin Meritor. *Clustering Individuals on Tribologic and CAE Data*, 2003

33. MINORPLANET SYSTEMS S.A. *EVAOPTIM*, 2001

34. Vda. de Loinaz y Sobrinos de Mercader. *Desarrollo de Software para la Optimización de la Distribución de Combustibles*, 1997

35. Inguru Consultores. *Seguimiento de la Red de Vigilancia de la Calidad de las Aguas y del Estado Ambiental de los Ríos de la Comunidad Autónoma de Euskadi*, 1997

36. Prospektiker Erakundea. *Proyecto Habitat*, 1994

37. Asociación Proyecto Hombre. *Encuesta al Residente: Tipologías, Redes Bayesianas, Árboles de Clasificación*, 1994

38. Prospektiker Erakundea. *Vivienda. Iberdrola. Valencia*, 1993

39. Sociedad Cultural de Investigación Submarina. *Campaña Estival de Medición de Variables Biológicas en dos Zonas de la Costa de Guipuzcoa Próximas a Hondarriabia y Zumaia*, 1993

40. Prospektiker Erakundea. *Estudio Prospectivo y Estratégico del Consumo de Energía Eléctrica en la C.A.E. en la Perspectiva del Año 2005*, 1992

41. Asociación Proyecto Hombre. *Encuesta al Residente. Aplicación de Técnicas Multivariantes: Tipologías*, 1992

42. Siadeco. *Encuesta Dirigida a los Alumnos de 2^0, 5^0 y 8^0 de E.G.B. del Modelo D*, 1992

43. Ikertalde. *Actualización del Censo de Establecimientos Comerciales en la C.A.P.V. y Elaboración del Informe sobre los Nuevos Comercios del País Vasco Correspondiente al Periodo 1984-1991*, 1992

44. Asociación Vasca de Enfermería. *Actitud de la Mujer ante la Autoexploración de Mamas y Genitales*, 1991

45. Siadeco. *Encuesta Realizada en Iparralde sobre el Euskara y el Francés*, 1991

46. Laboratorio de Sociología Jurídica. *Relación Administración de Justicia - Ciudadano*, 1990

47. Laboratorio de Sociología Jurídica. *El Cuidadano como Justiciable*, 1990

48. Laboratorio de Sociología Jurídica. *Encuesta de Personas con Experiencias en Juicios Civiles o Laborales*, 1990

49. Prospektiker Erakundea. *Estructura y Evolución de las Ocupaciones*, 1989

50. Prospektiker Erakundea. *Alumnos de Formación Profesional en Alternancia*, 1989

51. Siadeco. *La Problemática de la Mujer en Donostia*, 1988

52. Siadeco. *Irakaskuntza eta Berorren Etorkizuna Lea-Artibaiko Bailaran: Hizkuntz–plangintzarako Oinarriak*, 1988

53. Prospektiker Erakundea. *Estudio de las Necesidades de Formación Ocupacional a los Años 1989, 1990, 1991*, 1988

54. Siadeco. *El Euskara y el Mundo del Niño en Eibar*, 1987

D. Teaching and Supervision

Undergraduate Courses

Machine Learning, Information Systems, Mathematical Methods in Computer Sciences, Probabilistic Methods in Artificial Intelligence, Statistical Inference, Operational Research, Probability and Statistics

Master Courses

Data Mining: Methods and Techniques, Bayesian Networks, Bayesian Reasoning with Graphical Models, Machine Learning, Estimation of Distribution Algorithms

Doctorate Courses

Bayesian Reasoning, Probabilistic Graphical Models in Bioinformatics, Learning of Bayesian Networks from Data, Introduction to Research, From Data to Knowledge, Probabilistic Graphical Models, Intelligent Systems Induced by Genetic Algorithms, Intelligent Systems in Molecular Biology, Intelligent Systems in Finances, Applications of Bayesian Networks, Stochastical Methods in Optimization, and Bayesian Networks

Summer Schools

Madrid UPM Advanced Statistics and Data Mining Summer School (a worldwide top ten maths and stats summer school according to INOMICS, with 15 editions since 2006), Coordinator and Instructor

Supervised Ph. D. Theses

1. D. Quesada (2023). *Multivariate Time-Series Modelling and Forecasting with High-Order Dynamic Bayesian Networks Applied in Industrial Settings*. Ph.D. in Computer Science. Technical University of Madrid
2. C.E. Puerto-Santana (2023). *Asymmetric Hidden Markov Models and Extensions Applied to Industry*. Ph.D. in Computer Science. Technical University of Madrid
3. D. Atienza (2022). *Nonparametric Models and Bayesian Networks. Applications to Anomaly Detection*. Ph.D. in Computer Science. Technical University of Madrid
4. F. Rodríguez (2021). *Multidimensional Clustering with Bayesian Networks*. Ph.D. in Computer Science. Technical University of Madrid
5. I. Córdoba (2020). *Unifying Methodologies for Graphical Models with Gaussian Parametrization*. Ph.D. in Computer Science. Technical University of Madrid
6. S. Luengo-Sanchez (2019). *Clustering Based on Bayesian Networks with Gaussian and Angular Predictors. Applications in Neuroscience*. Ph.D. in Computer Science. Technical University of Madrid
7. P. Fernández-González (2019). *Developments in Probabilistic Graphical Models, Circular Distributions and Theory of Random Forests with Applications in Neuroscience*. Ph.D. in Computer Science. Technical University of Madrid
8. M. Benjumeda (2019). *Learning Tractable Bayesian Networks*. Ph.D. in Computer Science. Technical University of Madrid
9. J. Diaz-Rozo (2019). *Clustering Probabilístico Dinámico para la Búsqueda de Patrones de Degradación de Elementos de Máquina en el Ámbito del Industrie 4.0*. Ph.D. in Computer Science. Technical University of Madrid
10. B. Mihaljević (2018). *Contributions to Bayesian Network Classifiers and Interneuron Classification*. Ph.D. in Computer Science. Technical University of Madrid

11. G. Varando (2018). *Theoretical Studies on Bayesian Network Classifiers*. Ph.D. in Computer Science. Technical University of Madrid

12. I. Leguey (2018). *Directional-linear Bayesian Networks and Applications in Neuroscience*. Ph.D. in Computer Science. Technical University of Madrid

13. L. Anton-Sanchez (2017). *Statistical and Optimization Methods for Spatial Data Analysis Applied to Neuroscience*. Ph.D. in Computer Science. Technical University of Madrid

14. A. Ibañez (2015). *Machine Learning in Scientometrics*. Ph.D. in Computer Science. Technical University of Madrid

15. P.L. López-Cruz (2013). *Contributions to Bayesian Networks Learning with Applications to Neuroscience*. Ph.D. in Computer Science. Technical University of Madrid. Awarded with the best Ph.D. thesis in the Technical University of Madrid

16. H. Karshenas (2013). *Regularized Model learning in EDA-s for Continuous and Multi-objective Optimization*. Ph.D. in Computer Science. Technical University of Madrid

17. H. Borchani (2013). *Multi-dimensional Classification using Bayesian Networks for Stationary and Evolving Streaming Data*. Ph.D. in Computer Science. Technical University of Madrid

18. D. Vidaurre (2012). *Regularization for Sparsity in Statistical Analysis and Machine Learning*. Ph.D. in Computer Science. Technical University of Madrid

19. A. Pérez (2010). *Supervised Classification in Continuous Domains with Bayesian Networks*. Ph.D. in Computer Science. University of the Basque Country

20. T. Miquélez (2010). *Avances en Algoritmos de Estimación de Distribuciones. Alternativas en el Aprendizaje y Representación de Problemas*. Ph.D. in Computer Science. University of the Basque Country

21. R. Armañanzas (2009). *Consensus Policies to Solve Bioinformatic Problems Through Bayesian Network Classifiers and Estimation of Distribution Algorithms*. Ph.D. in Computer Science. University of the Basque Country. Awarded with the best Ph.D. thesis in Engineering in the University of the Basque Country

22. D. Morales (2008). *Modelos Gráficos Probabilísticos Aplicados a la Fecundación en Vitro*. Ph.D. in Computer Science. University of the Basque Country

23. B. Calvo (2008). *Positive Unlabelled Learning with Applications in Computational Biology*. Ph.D. in Computer Science. University of the Basque Country

24. G. Santafé (2008). *Advances on Supervised and Unsupervised Learning of Bayesian Networks Models. Applications to Population Genetics*. Ph.D. in Computer Science. University of the Basque Country

25. T. Romero (2007). *Algoritmos de Estimación de Distribuciones Aplicados a Problemas Combinatorios en Modelos Gráficos Probabilísticos*. Ph.D. in Computer Science. University of the Basque Country

26. C. González (2006). *Contributions on Theoretical Aspects of Estimation of Distribution Algorithms*. Ph.D. in Computer Science. University of the Basque Country

27. R. Santana (2006).*Advances in Probabilistic Graphical Models for Optimization and Learning. Applications in Protein Modelling*. Ph.D. in Computer Science. University of the Basque Country. Awarded with the best Ph.D. thesis in Engineering in the University of the Basque Country

28. R. Blanco (2005). *Learning Bayesian Networks from Data with Factorization and Classification Purposes. Applications in Biomedicine*. Ph.D. in Computer Science. University of the Basque Country. Awarded with the best Ph.D. thesis in Engineering in the University of the Basque Country

29. M. Merino (2004). *Predicción de Mortalidad Precoz tras Implantación Percutánea Intrahepátic en Pacientes Cirróticos. Aplicación de Métodos de Clasificación Supervisada*. Ph.D. in Medicine. University of Navarra

30. V. Robles (2003). *Clasificación Supervisada basada en Redes Bayesianas. Aplicación en Biología Computacional*. Ph.D. in Computer Science. Polytechnical University of Madrid

31. E. Bengoetxea (2002). *Inexact Graph Matching Using Estimation of Distribution Algorithms*. Ph.D. in Computer Science. Ecole Nationale Supérieure de Télécomunications of Paris

32. I. Inza (2002). *Advances in Supervised Classification Based on Probabilistic Graphical Models*. Ph.D. in Computer Science. University of the Basque Country. 2002. Awarded with the best Ph.D. thesis in Engineering in the University of the Basque Country

33. J. M. Peña (2001). *On Unsupervised Learning of Bayesian Networks and Conditional Gaussian Networks*. Ph.D. in Computer Science. University of the Basque Country

34. B. Sierra (2000). *Aportaciones Metodológicas a la Clasificación Supervisada*. Ph.D. in Computer Science. University of the Basque Country. Awarded with the best Ph.D. thesis in Engineering in the University of the Basque Country

35. J. A. Lozano (1998). *Algoritmos Genéticos Aplicados a la Clasificación no Supervisada*. Ph.D. in Computer Science. University of the Basque Country. Awarded with the best Ph.D. thesis in Engineering in the University of the Basque Country

Supervised Master Theses

1. D. Lozano (2023). *High-Dimensional Feature Selection and Structure Learning of Single Nucleotide Variants in Hypertrophic Cardiomyopathy*. Technical University of Madrid

2. I. Tello (2023). *Interactive Structural Learning for Discrete Bayesian Network Classification*. Technical University of Madrid

3. R. Sojo (2023). *Improving Machine Learning-Based Bridge Monitoring Systems Scalability with Transfer Learning*. Technical University of Madrid

4. M. Alonso (2023). *Facilitating the Inference Interpretation in Bayesian Networks*. Technical University of Madrid

5. N. Amigo (2023). *Explainable Cascading System for Network Intrusion detection in Industry*. Technical University of Madrid

6. J. Angulo (2023). *Predicción de Capacidad de Difusión de Monóxido de Carbono a Largo Plazo en Pacientes de COVID-19 con Redes Bayesianas*. Technical University of Madrid

7. J. Casajús (2022). *Autocodificador Evolutivo de Red Bayesiana para Detección de Anomalías Aplicado a Ciberseguridad*. Technical University of Madrid

8. I. López (2022). *Redes Bayesianas Semiparamétricas para la Monitorización y Detección de Anomalías*. Technical University of Madrid

9. J. Fernández (2022). *Monitorización de Puentes y Detección de Concept-Drift con Modelos de Redes Bayesianos Dinámicos*. Technical University of Madrid

10. A. González (2022). *Redes Bayesianas de Consenso para Inicialización en Sistemas de Monitorización y Detección de Anomalías*. Technical University of Madrid

11. P. Cordero (2022). *Anomaly-based Network Intrusion Detection Systems Using Semi-supervised Models*. Technical University of Madrid

12. E. Valero (2022). *Explanations for Dynamic Bayesian Networks: A Case Study in Climate Science*. Technical University of Madrid

13. J. Jiménez (2022). *Análisis Post-Covid19 con Herramientas de Aprendizaje Automático*. Technical University of Madrid

14. R. Uttamchandani (2022). *Hidden Structure-Continuous Time Bayesian Networks*. Technical University of Madrid

15. J. Gallego (2022). *A Genetic Atlasing Toolbox with a Standalone Web Interface and Basic Functionality Plugin in the EBRAINS Atlas Viewer*. Technical University of Madrid

16. C. Li (2021). *Network Intrusion Detection for Industrial Devices Using Continuous Time Bayesian Networks*. Technical University of Madrid

17. I. Mugica (2021). *Bridge Online Condition Monitoring with Linear Gaussian Bayesian Networks-Based Dynamic Clustering*. Technical University of Madrid

18. I. Maiza (2021). *Detección de Anomalías en Fundiciones Industriales de Hornos de Arco Eléctrico Desarrollando una Técnica de Clustering de Series Temporales Multivariantes*. Technical University of Madrid

19. S. González-Carvajal (2021). *Cadena de Clasificadores Bayesianos en Tiempo Continuo*. Technical University of Madrid

20. M. A. Riaño (2021). *Avances en Árboles de Decisión y su Aplicación para Clasificar Enfermos Críticos de COVID-19*. Technical University of Madrid

21. J. Díez-Victoria (2021). *Score-based Bayesian Networks for the Discovery of Effective Connectivity in fMRI Data with the Use of the Balloon Model*. Technical University of Madrid

22. P. Laccourreye (2021). *Explainable Machine Learning for Longitudinal Multi-Omic Microbiome*. Technical University of Madrid

23. S. Alderisi (2020). *Machine Learning Applied to COVID-19*. Technical University of Madrid

24. H. E. Nugra (2020). *Machine Learning Implementations on NeuroSuites Software*. Technical University of Madrid

25. S. Cheng (2020). *Extending the Bnclassify R package: Bayesian Network Classifiers with Continuous Variables*. Technical University of Madrid

26. V. Pérez-Soloviev (2020). *Optimización de un Proceso de una Refinería Usando Algoritmos Evolutivos Basados en Redes Bayesianas Gaussianas*. Technical University of Madrid

27. J. Zapatero (2019). *Continuous Data Imputation Applied to Massive Instances*. Technical University of Madrid

28. C. Fernández-González (2019). *Estudio y Aplicación de Métodos Basados en Interacciones para el Aprendizaje Automático sobre Conjuntos de Elementos*. Technical University of Madrid

29. F. R. Parrales (2019). *Estudio de Metodologías de Preprocesamiento y Clasificación Multietiqueta para Datos Clínicos de Pacientes con Migraña*. Technical University of Madrid

30. S. Paniego (2019). *Visualization and Interpretation in Bayesian Networks*. Technical University of Madrid

31. N. Bernaola (2019). *Learning Interpretable Gene Regulatory Networks via Merging Bayesian Networks*. Technical University of Madrid

32. J. Ramos (2019). *Aprendizaje Automático para Flujos de Datos*. Technical University of Madrid

33. D. Valero (2018). *Nuevo Algoritmo de Clasificación Multietiqueta con Redes Bayesianas. Aplicación a un Problema Industrial*. Technical University of Madrid

34. A. Alcón (2018). *Modelos de Aprendizaje Automático sobre el Juego del Club Movistar Estudiantes*. Technical University of Madrid

35. A. Rodríguez (2018). *Aprendizaje Automático Aplicado al Scouting Futbolístico*. Technical University of Madrid

36. C. Villa (2018). *Estudio de la Deriva Térmica sobre una Máquina de Medición de Alta Precisión Mediante Análisis de Regresión Multi-respuesta*. Technical University of Madrid

37. C. E. Puerto-Santana (2018). *Assymetric Linear Gaussian Hidden Markov Models with an Application to Determine Bearings Health State*. Technical University of Madrid

38. S. Gil-Begué (2018). *Nuevos Clasificadores Bayesianos Multi-dimensionales. Aplicaciones a la Eficiencia Energética en la Industria 4.0.* Technical University of Madrid

39. M. Llera (2017). *A Novel Multi-dimensional Regression Model based on Gaussian Networks*. Technical University of Madrid

40. S. Vakaruk (2017). *Redes Bayesianas Clasificadoras Multidimensionales en Tiempo Continuo*. Technical University of Madrid

41. F.J. Mesonero (2017). *Arquitectura para Detección de Anomalías en un Proceso de Templado Laser*. Technical University of Madrid

42. A. Ogbechie (2017). *Using Dynamic Bayesian Networks for the Automated Visual Inspection and Analysis of an Industrial Laser Process*. Technical University of Madrid

43. D. Atienza (2016). *Detección de Anomalías durante un Proceso Templado Láser con un Seguimiento Espacio-Temporal*. Technical University of Madrid

44. F. Rodríguez-Sánchez (2016). *Multi-view Clustering with Bayesian Networks*. Technical University of Madrid

45. I. Córdoba-Sánchez (2015). *Fusión de Redes Bayesianas Gaussianas*. Technical University of Madrid

46. L. Antón-Sánchez (2015). *Computación Evolutiva de Bosques de Expansión Mínimos con Restricciones de Grado y de Rol*. Technical University of Madrid

47. L. Rodríguez-Luján (2015). *Caracterización y Simulación de Arborizaciones Dendríticas con Redes Bayesianas Incluyendo Variables Angulares*. Technical University of Madrid

48. P. Maraver (2015). *Clasificación Supervisada de las Neuronas de la Base de Datos NeuroMorphox* . Technical University of Madrid

49. M. A. Benjumeda (2014). *Learning Bayesian Networks from Data by the Incremental Compilation of New Network Polynomials*. Technical University of Madrid

50. S. Luego (2014). *Clustering Basado en Redes Bayesianas con Predictoras Continuas. Aplicaciones en Neurociencia*. Technical University of Madrid

51. L. Pérez del Villar (2014). *Classification Algorithms in Malignant Astrocytomas Diagnosis using Information on Genetic Biomarkers*. Escuela Nacional de Sanidad

52. P. Fernández-González (2014). *Contributions to the Truncated von Mises Distribution for the Univariate and Bivariate Case*. Technical University of Madrid

53. P. López-Adeva (2013). *Markov Models for the Multivariate von Mises Distribution*. Technical University of Madrid

54. B. Mihaljevic (2013). BAYESCLASS. *An* R *Package for Learning Bayesian Network Classifiers. Applications to Neuroscience*. Technical University of Madrid

55. J. Pérez (2012). *Replicated Spatial Point Processes for Statistical Neuroscience*. Technical University of Madrid

56. M.F. Baguear (2011). *Morphological Study of Dendritic Spines*. Technical University of Madrid

57. P. López-Cruz (2010). *Simulación de Morfologías Dendríticas Mediante Redes Bayesianas*. Technical University of Madrid

58. A. Ibáñez (2009). *Técnicas de Aprendizaje Automático Aplicadas a la Bibliometría*. Technical University of Madrid

Supervised Graduate Projects

1. J. Farrach (2023). *Diseño, Desarrollo, Configuración y Puesta en Funcionamiento de un Sistema para la Gestión de las Solicitudes de un Trabajador*. Technical University of Madrid
2. A. Nieto (2021). *Algoritmos de Aprendizaje Automático. Un Estudio de su Difusión y Utlización*. Technical University of Madrid
3. L. Ameneiro (2017). *Diseño de un Entorno en R para Redes Bayesianas*. Technical University of Madrid
4. N. de Lucas (2017). *Desarrollo en R de Algoritmos de Aprendizaje de Clasificadores Bayesianos para Variables Continuas*. Technical University of Madrid
5. O. Chelly (2013). *Feature Selection in a High Dimensional Space*. Technical University of Madrid
6. M. Ratón (2008). *Optimización Continua Basada en Algoritmos de Estimación de Regresión*. Technical University of Madrid
7. Y. Galdiano (2006). *Redes de Coexpresión Génica a partir de Modelos Gráficos Probabilísticos*. University of the Basque Country
8. A. Diez (2006). *Multiclasificadores en el Diagnóstico de Cáncer a partir de Datos de Expresión Génica*. University of the Basque Country
9. A. de Antonio (2006). *Alineamiento Múltiple de Secuencias por medio de Algoritmos de Estimación de Distribuciones*. University of the Basque Country
10. A. Fernández (2005). *Clasificadores Bayesianos en la Predicción del Alzheimer a partir de Perfiles de Expresión Génica*. University of the Basque Country
11. B. Gil (2004). *Rellenando Quinielas con Clasificadores Bayesianos*. University of the Basque Country
12. I. Ezcurdia (2004). *Detección de Genes Asociados a Diferentes Tipos de Cáncer a Partir del Análisis de Datos de Microchips por Medio de Redes Bayesianas* . University of the Basque Country
13. A. Baranguán (2003). *Optimización de Clasificadores Bayesianos*. University of the Basque Country
14. O. Pérez (2003). *El Algoritmo LEM con Clasificadores Bayesianos*. University of the Basque Country
15. A. Gómez (2003). *Predicción de la Estructura Secundaria de las Proteínas. Combinación de Clasificadores*. University of the Basque Country
16. A. Cerroloza (2002). *Algoritmos Indirectos Discretos para la Selección de Variables en Clasificación Supervisada sobre Microarrays de ADN*. University of the Basque Country
17. E. de la Horra (2001). *www.campusdeportivo.com: Herramientas para Técnicos e Informes de Jugadores*. University of the Basque Country
18. J.L. Cardoso (2000). *Comparación Empírica entre Simulated Annealing, Algoritmos Genéticos y Algoritmos de Estimación de Distribuciones de Probabilidad en la Búsqueda de Teclados Óptimos*. University of the Basque Country
19. E. A. Jiménez (2000). *Comparación Empírica entre Algoritmos Genéticos y Algoritmos de Estimación de Distribuciones de Probabilidad en la Búsqueda de Teclados Óptimos*. University of the Basque Country
20. A. Martín (2000). *Algoritmos de Distribuciones de Probabilidad en Cryptografía*. University of the Basque Country
21. I. Garate (1999). *Ikasketa Automatiko Bidezko Kinielen Betetzea*. University of the Basque Country
22. M. Niño (1998). *Nuevo Método de Combinación de Clasificadores de Aprendizaje Automático. Un Caso de Estudio en la Predicción de Bancarrota*. University of the Basque Country
23. S. Dizdarevic (1997). *Statistical and Machine Learning Methods in the Prediction of Corporate Failure*. University of the Basque Country

E. Service to the Academic Community

Editorial Board of Journals

1. *Progress in Artificial Intelligence*
2. *Inteligencia Artificial Journal*
3. *BioData Mining*

Editor of Proceedings

1. P. Larrañaga, J. A. Lozano, J. M. Peña, and I. Inza (2003). *Proceedings of the ECML/PKDD - 2003 Workshop on Probabilistic Graphical Models for Classification*. Ruder Bošković Institute

Editor of Journal Special Issues

1. C. Bielza, P. Larrañaga (2014). Special issue in Bayesian Networks in Neuroscience. *Frontiers in Computational Neuroscience*
2. J. A. Lozano, Q. Zhang, P. Larrañaga (2009). Special issue in Evolutionary Algorithms based on Probabilistic Models. *IEEE Transactions on Evolutionary Computation*, 13(6)
3. P. Larrañaga, J. A. Lozano, J. M. Peña, and I. Inza (2005). Special issue in Probabilistic Graphical Models for Classification. *Machine Learning*, 59
4. J. A. Lozano, and P. Larrañaga (2005). Special issue in Estimation of Distribution Algorithms. *Evolutionary Computation*, 13(1)
5. P. Larrañaga, E. Menasalvas, J. M. Peña, and V. Robles (2003). Special issue in Data Mining in Genomics and Proteomics. *Artificial Intelligence in Medicine*, 31
6. P. Larrañaga, and J. A. Lozano (2002). Special issue in Synergies Between Probabilistic Graphical Models and Evolutionary Computation. *International Journal of Approximate Reasoning*, 31

Guest Editor of Journal

1. P. Larrañaga (2023). *PLOS Computational Biology*

PhD Dissertation Committees

1. E. Díaz, Universitat de València (2023)
2. K. Mahdavi, Universidad Politécnica de Cataluyna (2022)
3. C. García, Universidad de Santiago de Compostela (2019)
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Invited Speaker in Universities and Institutions

- Chile: Pontificia Universidad Católica de Chile
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- Denmark: University of Aalborg
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- Spain: University of Valladolid, University of La Laguna, University of Rey Juan Carlos, University of Carlos III of Madrid, Polytechnical University of Madrid, University of Málaga, Autonomous University of Madrid, Spanish Biotechnology National Center, University of Granada, University of Castilla La Mancha, Complutense University, Royal Academy of Engineering of Spain, Spanish Institute of Engineering, Gipuzkoa Chamber of Commerce, Universidad de Navarra
- South Korea: Seoul National University
- The Netherlands: University of Utrech, Nijmegen University
- Tunisia: Tunis University
- United States of America: Harvard University, Massachusetts Institute of Technology, Pittsburgh University
- United Kingdom: Essex University

Book Proposal Review:

- Springer

Journal Referee:

1. ACM Computing Surveys
2. ACM Transactions on Evolutionary Learning and Optimization
3. ACM Transactions on Internet of Things
4. Aging and Disease
5. Advances in Decision Sciences
6. Applied Artificial Intelligence
7. Artificial Intelligence
8. Artificial Intelligence in Medicine
9. Applied Mathematics and Computation
10. Applied Soft Computing
11. Bioinformatics
12. BioData Mining
13. BioMed Research International
14. BMC Bioinformatics

15. BMC Medical Informatics and Decision Making
16. Brain Sciences
17. Brain Structure and Function
18. Cerebral Cortex
19. Cogent Business and Management
20. Communications in Statistics - Simulation and Computation
21. Complexity
22. Computación y Sistemas
23. Computational Intelligence and Neuroscience
24. Computational Statistics
25. Computational Statistics and Data Analysis
26. Computers in Biology and Medicine
27. Data Mining and Knowledge Discovery
28. Discrete Applied Mathematics
29. Electronic Transactions on Artificial Intelligence
30. eNeuro
31. Engineering Applications of Artificial Intelligence
32. Engineering Computations: International Journal for Computer–Aided Engineering and Software
33. Entropy
34. European Journal of Operational Research
35. Evidence-Based Complementary and Alternative Medicine
36. Evolutionary Computation
37. Evolving Systems
38. Frontiers in Computational Neuroscience
39. Frontiers in Microbiology
40. Frontiers in Neural Circuits
41. Frontiers in Psychology
42. Frontiers in Public Health
43. Frontiers in Systems Neuroscience
44. Frontiers Veterinary Science
45. Genetic Programming and Evolvable Machines
46. IEEE Transactions on Big Data
47. IEEE/ACM Transactions on Computational Biology and Bioinformatics
48. IEEE Computational Intelligence Magazine
49. IEEE Signal Processing Letters

50. IEEE Transactions on Cybernetics
51. IEEE Transactions on Evolutionary Computation
52. IEEE Transactions on Industrial Informatics
53. IEEE Transactions on Information Technology in Biomedicine
54. IEEE Transactions on Knowledge and Data Engineering
55. IEEE Transactions on Pattern Analysis and Machine Intelligence
56. IEEE Transactions on Neural Networks and Learning Systems
57. IEEE Transactions on Systems, Man, and Cybernetics
58. Information Processing and Management
59. Information Sciences
60. Inteligencia Artificial. Revista Iberoamericana de Inteligencia Artificial
61. International Journal of Approximate Reasoning
62. International Journal of Computer Mathematics
63. International Journal of Electronic Power and Energy Systems
64. International Journal of Geo-Information
65. International Journal of Intelligent Systems
66. International Journal of Hybrid Intelligent Systems
67. International Journal of Uncertainty, Fuzziness and Knowledge–Based Systems
68. International Journal on Artificial Intelligence Tools
69. Journal of AI and Data Mining
70. Journal of Analytical Methods in Chemistry
71. Journal of Applied Mathematics
72. Journal of Artificial Intelligence Research
73. Journal of Biomedical Informatics
74. Journal of Biomedicine and Biotechnology
75. Journal of Clinical Medicine
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79. Journal of Parallel and Distributed Computing
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81. Journal of Statistical Distributions and Applications
82. Machine Learning
83. Machine Learning and Knowledge Extraction
84. Mathematical Problems in Engineering

85. Medical, Biological Engineering and Computing
86. Movement Disorders
87. Nature Communications
88. Nature Parkinson's Disease
89. Networks and Heterogeneous Media
90. Neural Computing and Applications
91. Neurocomputing
92. Neuroinformatics
93. Open Mathematics
94. Pattern Analysis and Applications
95. Pattern Recognition
96. Pattern Recognition Letters
97. PLoS One
98. Probability in the Engineering and Informational Sciences
99. Proceedings of the National Academy of Science
100. Progress in Artificial Intelligence
101. Scientific Reports
102. Simulation and Computation
103. Soft Computing
104. Statistica Sinica
105. Swarm and Evolutionary Computation
106. The Computer Journal
107. The Patient: Patient-Centered Outcomes Research
108. The Scientific World Journal
109. WIREs Data Mining and Knowledge Discovery
110. Zentralblatt MATH

Plenary Talks in Conferences

1. Joint Workshops on XAI Methods, Challenges and Applications (XAI3) at ECAI 2023, Krakow (2023)
2. 2022 International Symposium on New Trends in Computational Intelligence, Qingdao (2022)
3. The Leading European Event on Bio-Inspired Computation, Madrid (2022)
4. 3rd International Symposium on New Trend in Computational Intelligence, Qingdao (2021)
5. 2nd International Conference on Machine Learning and Intelligent Systems, Seoul (2020)
6. IEEE International Conference on Computational Intelligence in Bioinformatics and Computational Biology, Santiago de Chile (2020)

7. 19th Mexican International Conference on Artificial Intelligence, Mexico City (2020)
8. 10th International Conference on Cloud Computing, Data Science and Engineering. Confluence-2020, New Delhi (2020)
9. Global Innovation Day at the Week of Science, Bilbao (2019)
10. 1st IPARCOS Workshop on Machine Learning and Applications to Physics, Madrid (2019)
11. 14th International Conference on Hybrid Artificial Intelligence Systems, León (2019)
12. International Conference on Frontiers of Artificial Intelligence and Machine Learning, Rome (2019)
13. The Brain Conferences. The Necessity of Cell Types for Brain Function, Copenhagen (2018)
14. XVIII Conferencia de la Asociación Española para la Inteligencia Artificial, Granada (2018)
15. 3rd International Conference on Big Data Analytics, Data Mining and Computational Intelligence, Madrid (2018)
16. HBP and Neuroscience Spanish Open Forum, Madrid (2017)
17. CORBI Foundation. Data Summit, A Coruña (2017)
18. XXIV Jornadas de Classificação e Análise de Dados, Porto (2017)
19. International Workshoop on Advances and Applications of Data Science and Engineering, Madrid (2016)
20. International Symposium on Computer-Based Medical Systems (CBMS), Porto (2013)
21. A Bridge Between Probability, Set Oriented Numerics, and Evolutionary Computation (EVOLVE), Mexico City (2012)
22. Sixth European Workshop on Probabilistic Graphical Models in Europe (PGM), Granada (2012)
23. A Bridge Between Probability, Set Oriented Numerics and Evolutionary Computation, (EVOLVE), Mexico (2012)
24. IEEE World Congress on Computational Intelligence (WCCI), Barcelona (2010)
25. Simposio Argentino de Inteligencia Artificial (ASAI), Buenos Aires (2010)
26. Tercer Congreso Internacional de Computación Evolutiva, Aguascalientes (2007)
27. Mini Euro Conference on Variable Neighborhood Search, Tenerife (2005)
28. X Conference of the Spanish Artificial Intelligence Association, Donostia–San Sebastián (2003)
29. International Summer School on Metaheuristics, Tenerife (2003)
30. Mexican Conference on Artificial Intelligence, Merida (2002)
31. Intelligent Data Analysis in Medicine and Pharmacology in the European Conference on Artificial Intelligence (ECAI2002), Lyon (2002)

Organizer of Congress and Scientific Events

1. *Organizer of the XAI-Healthcare 2023, AIME2023*, Portoroz (2023)
2. *Responsible of the Lunch with an EurAI Fellow, ECAI2020*, Santiago de Compostela (2020)
3. *Co-Chair of the Track on Estimation of Distribution Algorithms, GECCO2015*, Madrid, (2015)
4. *Co-Chair of the Track on Estimation of Distribution Algorithms, GECCO2014*, Vancouver, (2014)

5. *Co-Chair of the Special Session on Evolutionary Algorithms with Statistical and Machine Learning Techniques at the Congress on Evolutionary Conference, CEC2013*, Cancun, (2013)
6. *Co-Chair of the Congress on Evolutionary Conference, CEC2010*, Barcelona, (2010)
7. *IX Jornada de Seguimiento de Proyectos en Tecnologías Informáticas*, Madrid (2010)
8. *VIII Jornada de Seguimiento de Proyectos en Tecnologías Informáticas*, Madrid (2009)
9. *VII Jornada de Seguimiento de Proyectos en Tecnologías Informáticas*, Zaragoza (2007)
10. *Intelligent Data Analysis 2005*, Madrid (2005)
11. *14^{th} European Conference on Machine Learning – 7^{th} European Conference on Principles and Practice of Knowledge Discovery. Workshop on Probabilistic Graphical Models for Classification*, Cavtat–Dubrovnik (2003)
12. *International Symposium on Adaptive Systems: Evolutionary Computation and Probabilistic Graphical Models*, La Habana (2001)

Program Committee Member

1. 39th Conference on Uncertainty in Artificial Intelligence (UAI2023), Pittsburgh, 2023
2. 10th IEEE International Conference on Data Science and Advanced Analytics (DSAA2023), Thessaloniki, 2023
3. 26th European Conference on Artificial Intelligence, (ECAI2023), Krakóv, 2023
4. 19th Conference on Artificial Intelligence in Medicine (AIME 2023), Portoroz (2023)
5. 18th Conference on Artificial Intelligence in Medicine (AIME 2022), Halifax (2022)
6. International Conference on Probabilistic Graphical Models (PGM 2022), Almeria 2022
7. First International Conference on Artificial Intelligence and Sustainable Computing for Smart Cities (AIS2C2), Noida 2021
8. 29th ACM International Conference on Information and Knowledge Management (CIKM 2020), Galway 2020
9. International Conference on Probabilistic Graphical Models (PGM 2020), Aalborg 2020
10. 18th Conference on Artificial Intelligence in Medicine (AIME 2020), Minneapolis (2020)
11. 24th European Conference on Artificial Intelligence, (ECAI2020), Santiago de Compostela, 2020
12. The 22nd International Conference on Discovery Science, (DS-2019), Split, 2019
13. 10th International Conference on Computing and Informatics in Northern Chile, (INFONOR2019), Antofagasta, 2019
14. European Conference on Machine Learning and Principles and Practice of Knowledge Discovery in Databases, (ECML/PKDD 2019), Würzburg, 2019
15. International Joint Conference on Artificial Intelligence, (IJCAI2019), Macao, 2019
16. 17th Conference on Artificial Intelligence in Medicine (AIME 2019), Poznan (2019)
17. AutoML Workshop at the International Conference in Machine Learning, Stockhholm (2018)
18. European Conference on Machine Learning and Principles and Practice of Knowledge Discovery in Databases, (ECML/PKDD 2018), Dublin, 2018
19. XVII Spanish Conference on Artificial Intelligence (CAEPIA 2018), Granada 2018

20. International Conference on Probabilistic Graphical Models (PGM 2018), Praga 2018
21. Thirty-Second Conference on American Artificial Intelligence (AAAI 2018), New Orleans
22. I Workshop on Data and Knowledge Engineering (WDKE 2017), Arica
23. XII Congreso Español de Metaheuristicas, Algoritmos Evolutivos y Bioinspirados (MIC 2017), ???
24. Precision Healthcare through Informatics (Medinfo 2017), Xiamen
25. 4th International Conference on Data Science and Advances Analytics (DSAA 2017), Tokyo
26. 16th Conference on Artificial Intelligence in Medicine (AIME 2017), Vienna 2017
27. Workshop on Data Science for Social Good (SoGood 2016), Riva del Garda 2016
28. European Conference on Artificial Intelligence (Area Chair) (ECAI 2016), The Hague 2016
29. XVII Spanish Conference on Artificial Intelligence (CAEPIA 2016), Salamanca 2016
30. International Conference on Probabilistic Graphical Models (PGM 2016), Lugano 2016
31. 15th Ibero-American Conference on Artificial Intelligence (IBERAMIA 2016), San José de Costa Rica, 2016
32. IEEE Congress on evolutionary Computation (CEC2016), Vancouver 2016
33. International Work-Conference on Bioinformatics and Biomedical Engineering, IWBBIO2015, Granada, 2015
34. XVI Spanish Conference in Artificial Intelligence (CAEPIA2015), Albacete 2015
35. 16th Simposio Argentino de Inteligencia Artificial (ASAI 2015), Rosario, 2015
36. European Conference on Machine Learning and Principles and Practice of Knowledge Discovery in Databases, (ECML/PKDD 2015), Porto, 2015
37. 15th Conference on Artificial Intelligence in Medicine (AIME2015), Pavia, 2015
38. International Joint Conference on Artificial Intelligence, (IJCAI2015), Buenos Aires, 2015
39. European Conference on Symbolic and Quantitative Approaches to Reasoning with Uncertainty, (ECSQARU2015), Compiègne, 2015
40. European Conference on Machine Learning and Principles and Practice of Knowledge Discovery in Databases, (ECML/PKDD 2014), Nancy, 2014
41. The Seventh European Workshop on Probabilistic Graphical Models, (PGM2014), Utrecht, 2014
42. European Conference on Symbolic and Quantitative Approaches to Reasoning with Uncertainty, (ECSQARU2013), Utrecht, 2015
43. International Joint Conference on Artificial Intelligence, (IJCAI2013), Beijing, 2013
44. 14th Conference on Artificial Intelligence in Medicine (AIME2013), Murcia, 2013
45. International Work-Conference on Bioinformatics and Biomedical Engineering, (IWBBIO2013), Granada, 2013
46. XV Conferencia de la Asociación Española para Inteligencia Artificial (CAEPIA'13), Madrid, 2013
47. 27th Conference on Uncertainty in Artificial Intelligence (UAI-2012), Catalina Island, 2012
48. Prestigiuos Applications of Intelligent Systems in the European Conference on Artificial Intelligence (ECAI2012), Montpellier, 2012
49. IEEE Word Congress on Computational Intelligence (WCCI2012), Brisbane, 2012

50. Genetic and Evolutionary Conference (GECCO2012), Atlanta, 2012
51. First International Conference on Pattern Recognition Applications and Methods (ICPRAM2012), Algarve, 2012
52. Sixth European Workshop on Probabilistic Graphical Models (PGM'12), Granada, 2012
53. Conferencia de la Asociación Española de Inteligencia Artificial, CAEPIA2011, San Cristóbal de La Laguna, 2011
54. Probabilistic Problem Solving in Biomedicine in the 13th Conference on Artificial Intelligence in Medicine (AIME2011), Bled, 2011
55. Genetic and Evolutionary Conference (GECCO2011), Dublin, 2011
56. 26th Conference on Uncertainty in Artificial Intelligence (UAI-2011), Barcelona, 2011
57. IEEE Congress on Evolutionary Computation (CEC2011), New Orleans, 2011
58. Intelligent Data Analysis Conference, IDA2011, Porto, 2011
59. International Joint Conference on Artificial Intelligence, IJCAI2011, Barcelona, 2011
60. 23rd International Conference on Industrial, Engineering & Other Applications of Applied Intelligent Systems (IEA-AIE 2010). Special Session on "New Frontiers in Data Analysis, Optimization and Visualization for Bioinformatics and Neuroscience", Córdoba, 2010
61. 26th Conference on Uncertainty in Artificial Intelligence (UAI-2010), Catalina Island, 2010
62. Fifth European Workshop on Probabilistic Graphical Models (PGM'10), Helsinki, 2010
63. 13th International Conference on Discovery Science (DS-2010), Canberra, 2010
64. ASAI 2010 Simposio Argentino de Inteligencia Artificial, Buenos Aires, 2010
65. 27th International Conference on Machine Learning, ICML2010, Haifa, 2010 Intelligent Data Analysis, IDA2010, Tucson, 2010
66. 13th International Conference on Information Processing and management of Uncertainty in Knowledge-Based Systems, Dortmund, 2010
67. European Conference on Machine Learning, ECML2010, Barcelona, 2010
68. 20th Brazilian Symposium on Artificial Intelligence, SBIA2010, Sao Bernardo do Campo, 2010
69. Congreso Español sobre Metaheurísticas, Algoritmos Evolutivos y Bioinspirados, MAEB2010, Valencia, 2010
70. 14th Pacific-Asia Conference on Knowledge Discovery and Data Mining, PAKDD2010, Hyderabad, 2010
71. Congress on Evolutionary Computation, CEC2010, Barcelona, 2010
72. 12th Conference on Artificial Intelligence in Medicine, AIME2009, Verona, 2009
73. Congress on Evolutionary Computation, CEC2009, Trondheim, 2009
74. 22nd International Florida Artificial Intelligence Research Society Conference, FLAIRS-22, Sanibel Island, 2009
75. Genetic and Evolutionary Computation Conference, GECCO2009, Montreal, 2009
76. Conferencia de la Asociación Española de Inteligencia Artificial, CAEPIA2009, Sevilla, 2009
77. Discovery Science, DS2009, Porto, 2009
78. Mexican International Conference on Artificial Intelligence, MICAI2009, Guanajuato, 2009

79. International Conference on Adaptive and Natural Computing Algorithms, ICANNGA2009, Kuopio, 2009
80. Intelligent Data Analysis, IDA2009, Lyon, 2009
81. European Conference on Symbolic and Quantitative Approaches to Reasoning with Uncertainty, ECSQARU2009, Verona, 2009
82. Congreso Español sobre Metaheurísticas, Algoritmos Evolutivos y Bioinspirados, MAEB2009, Malaga, 2009
83. Asian Conference on Machine Learning, ACML2009, Nanjing, 2009
84. International Joint Conference on Artificial Intelligence, IJCAI2009, Pasadena, 2009
85. Genetic and Evolutionary Computation Conference, GECCO2008, Atlanta, 2008
86. IEEE World Congress on Computational Intelligence, WCCI2008, Hong Kong, 2008
87. IV International Symposium on Applications of Modelling as an Innovative Technology in the Agri-Food Chain, MODEL-IT2008, Madrid, 2008
88. 8th International Conference on Hybrid Intelligent Systems, HIS2008, Barcelona, 2008
89. International Conference on Machine Learning, ICML2008, Helsinki, 2008
90. European Conference on Artificial Intelligence, ECAI2008, Patras, 2008
91. Parallel Problem Solving from Nature, PPSN2008, Dortmund, 2008
92. Probabilistic Graphical Models, PGM2008, Hirtshals, 2008
93. International Conference on Adaptive and Natural Computing Algorithms, ICANNGA2009, Kuopio, 2009
94. Intelligent Data Analysis in Medicine and Pharmacology, IDAMAP2008, Washington, 2008
95. Feature Selection in Data Mining and Knowledge Discovery, FSDM2008, Antwerp, 2008
96. Artificial Intelligence in Medicine, AIME2007, Amsterdam, 2007
97. International Conference on Artificial Intelligence and Applications, AIA 2007, Innsbruck, 2007
98. International Conference on Adaptive and Natural Computing Algorithms, ICANNGA 2007, Warsaw, 2007
99. European Conference on Symbolic and Quantitative Approaches to Reasoning and Uncertainty, ECSQARU2007, Hammamet, 2007
100. International Conference on Natural Computation, ICNC2007, Haikon, 2007
101. Conferencia de la Asociación Española para la Inteligencia Artificial, Salamanca, 2007
102. European Conference on Machine Learning (Area Chair), ECML-PKDD2007, Warsaw, 2007
103. Intelligent Data Analysis in bioMedicine and Pharmacology, Amsterdam, 2007
104. Genetic Algorithms and Evolutionary Computation, GECCO2007, Londres, 2007
105. Data Warehousing and OLAP, DAWAK2007, Regensburg, 2007
106. Uncertainty in Artificial Intelligence, UAI2007, Vancouver, 2007
107. Intelligent Data Analysis, IDA2007, Ljubljana, 2007
108. IEEE Congress on Evolutionary Computation, CEC2007, Singapore, 2007

109. Jornadas de Algoritmos Evolutivos y Metaheurísticas, JAEM2007, Zaragoza, 2007
110. Intelligent Data Analyisis in Biomedicine and Pharmacology, IDAMAP2006, Verona, 2006
111. Genetic and Evolutionary Computation Conference, GECCO2006, Seattle, 2006
112. Congress on Evolutionary Computation, CEC2006, Vancouver, 2006
113. European Conference on Artificial Intelligence, ECAI2006, Italia, 2006
114. Data Warehousing and Knowledge Discovery, DaWaK2006, Krakow, 2006
115. European Conference on Machine Learning, ECML-PKDD2006, Berlin, 2006
116. Probabilistic Graphical Models, PGM2006, Praga, 2006
117. 7th International Symposium on Biological and Medical Data Analysis, Thessaloniki, 2006
118. Non-Darwinian Evolutionary Computation Special Track at the 18th International Conference on Tools with Artificial Intelligence, ICTAI 2006, Washington, 2006
119. European Conference on Machine Learning (Area Chair), ECML-PKDD2005, Porto, 2005
120. Mini Euro Conference on Variable Neighborhood Search, Tenerife, 2005
121. International Symposium on Biological and Medical Data Analysis, ISBMDA2005, Aveiro, 2005
122. Cuarto Congreso Español de Metaheurísticas, Algoritmos Evolutivos y Bioinspirados, Granada, 2005
123. Conference on Evolutionary Computation, CEC2005, Edinburgh,2005
124. Genetic and Evolutionary Computation, GECC02005, Washington, 2005
125. International Conference on Machine Learning. Workshop on Ontology Learning, ICML2005, Bonn, 2005
126. Mexican International Conference on Artificial Intelligence, MICAI2005, Monterrey, 2005
127. 7th International Conference on Adaptive and Natural Computing Algorithms, ICANNGA2005, Coimbra, 2005
128. Segundo Congreso Mexicano de Computación Evolutiva, COMCEV2005, AguasCalientes, 2005
129. Intelligent Data Analysis, Madrid, 2005
130. International Symposium on Biological and Medical Data Analysis, ISBMDA2005, Aveiro, 2005
131. Cuarto Congreso Español de Metaheurísticas, Algoritmos Evolutivos y Bioinspirados, MAEB2005, Granada, 2005
132. International Conference on Machine Inteligence, ICMI2005, Tunez, 2005
133. Mini Euro Conference on Variable Neighborhood Search, Tenerife, 2005
134. European Conference on Symbolic and Quantitative Approach to Reasoning and Uncertainty, ECSQARU2005, Barcelona, 2005
135. European Conference on Computational Biology, ECCB2005, Madrid, 2005
136. Fifth International Conference on Artificial Neural Nets and Genetic Algorithms, ICANNGA2005, Coimbra, 2005
137. V Annual Spanish Bioinformatics Conference, Barcelona, 2004
138. Uncertainty in Artificial Intelligence, UAI2004, Banff, 2004
139. First Iberoamerican Workshop on Machine Learning for Scientific Data Analysis, Puebla, 2004

140. Iberoamerican Conference on Artificial Intelligence, IBEARMIA2004, Puebla, 2004
141. Information Processing and Management Uncertainty, IPMU2004, Perugia, 2004
142. PPSNVIII Parallel Problem Solving From Nature, Birmingham, 2004
143. European Conference on Artificial Intelligence, ECAI2004, Valencia, 2004
144. Tercer Congreso Español de Metaheurísticas, Algoritmos Evolutivos y Bioinspirados, Cordoba, 2004
145. Genetic and Evolutionary Conference, GECCO2004, Seatle, 2004
146. Second European Workshop on Probabilistic Graphical Models, PGM2004, Leiden, 2004
147. Mexican International Conference on Artificial Intelligence, MICAI2004, Morelia, 2004
148. International Symposium on Medical Data Analysis, ISMDA2003, Berlin, 2003
149. International Joint Conference on Artificial Intelligence, IJCAI2003, Acapulco, 2003
150. Genetic and Evolutionary Conference, GECCO2003, Chicago, 2003
151. Ninth European Conference on Artificial Intelligence in Medicine 2003. Joint Workshop Intelligent Data Analysis in Medicine and Pharmacology 2003 and Knowledge–Based Information Management in Anaesthesia and Intensive Care 2003, Cyprus, 2003
152. Segundo Congreso Español de Metaheurísticas, Algoritmos Evolutivos y Bioinspirados, Gijón, 2003
153. Primer Congreso Mexicano de Computación Evolutiva, COMCEV2003, Guanajuato, 2003
154. Fifth International Conference on Artificial Neural Nets and Genetic Algorithms, ICANNGA2003, Rhoen, 2003
155. First European Workshop on Probabilistic Graphical Models, PGM2002, Cuenca, 2002
156. PPSNVII Parallel Problem Solving From Nature, Granada, 2002
157. 15th European Conference on Artificial Intelligence. Workshop of Intelligent Data Analysis in Medicine and Pharmacology, IDAMAP2002, Lyon, 2002
158. Mexican International Conference on Artificial Intelligence, MICAI2002, Mérida, 2002
159. Congreso Español de Algoritmos Evolutivos y Bioinspirados, Mérida, 2002
160. Optimization by Building and Using Probabilistic Models, GECCO2001, San Francisco, 2001
161. Fourteenth European Conference on Artificial Intelligence in Medicine. Workshop on Bayesian Models in Medicine, Cascais, 2001
162. International Symposium on Medical Data Analysis, ISMDA2001, Madrid, 2001
163. International Symposium on Adaptive Systems, La Habana, 2001
164. International Conference in Machine Learning, ICML2001, Seatle, 2001
165. IX Conferencia de la Asociación Española de Inteligencia Artificial, CAEPIA2001, Gijón, 2001
166. IX Symposium Nacional de Reconocimiento de Formas y Análisis de Imágenes, Castellón de la Plana, 2001
167. International Conference on Artificial Neural Nets and Genetic Algorithms, ICANNGA2001, Praga, 2001
168. Optimization by Building and Using Probabilistic Models, GECCO2000, Las Vegas, 2000
169. International Symposium on Medical Data Analysis, ISMDA2000, Frankfurt, 2000

170. Fourteenth European Conference on Artificial Intelligence, ECAI2000, Berlin, 2000
171. 8th International Conference on Information Processing and Management of Uncertainty in Knowledge Based Systems, Madrid, 2000
172. VIII Conferencia de la Asociación Española para la Inteligencia Artificial, Murcia, 1999
173. Fourth International Conference on Artificial Neural Nets and Genetic Algorithms, Portorož, 1999
174. IV Jornadas de Informática, Las Palmas de Gran Canaria, 1998
175. Third International Conference on Artificial Neural Nets and Genetic Algorithms, Norwich, 1997

Session Chair of Conferences

1. Image Analysis in *21st International Conference on Artificial Intelligence in Medicine*, Portoroz (2023)
2. Foundations II in *11th International Conference on Probabilistic Graphical Models*, Almearía (2022)
3. Learning and Classifiers in *10th International Conference on Probabilistic Graphical Models*, Aalborg (2020)
4. Uncertainty in Artificial Intelligence in *XVIII Conferencia de la Asociación Española para la Inteligencia Artificial*, Granada 2018
5. Estimation in *9th International Conference on Probabilistic Graphical Models*, Lugano (2016)
6. Estimation of Distribution Algorithms in *Genetic and Evolutionary Computation Conference*, Madrid (2015)
7. Memetic, Multimeme, and Hybrid Algorithms in *Congress on Evolutionaty Computation*, Barcelona (2010)
8. Applications in the *Fifth European Workshop on Probabilistic Graphical Models*, Helsinki (2010)
9. Soft Computing in the *Indo-Spain Workshop on Information and Communication Technology*, Bangalore (2010)
10. Evolutionary Algorithms Based on Probabilistic Models in the *Congress on Evolutionary Computation*, Seatle (2006)
11. Algoritmos Evolutivos: Fundamentos II in the *MAEB*, Granada (2005)
12. Bayesian Statistics in the *European Conference on Machine Learning*, Porto (2005)
13. Algorithms in the *4th European Conference on Computational Biology*, Madrid (2005)
14. Computación Evolutiva in the *X Conferencia de la Asociación Española de Inteligencia Artificial*, San Sebastián (2003)
15. Machine Learning II in the *VIII Iberoamerican Conference on Artificial Intelligence*, Seville (2002)
16. Learning in Graphical Models in the *First European Workshop in Probabilistic Graphical Models*, Cuenca (2002)
17. Machine Learning in the *Second International Symposium on Medical Data Analysis*, Madrid (2001)
18. Computación Evolutiva in the *IX Conferencia de la Asociación Española para la Inteligencia Artificial*, Gijón (2001)

Tutorials

1. 19th Mexican International Conference on Artificial Intelligence, Mexico City (2020)
2. XXIV Jornadas de Classificação e Análise de Dados, Porto (2017)

3. 14th Conference on Artificial Intelligence in Medicine, Murcia (2013)
4. XIV Conference of the Spanish Artificial Intelligence Association, Tenerife (2011)
5. Discovery Science, Porto (2009)
6. Conferencia Española de Informática, Valencia (2010)
7. Congress on Evolutionary Computation, Edinburgh 2005
8. Congress on Evolutionary Computation, Canberra 2003
9. VIII Iberoamerican Conference on Artificial Intelligence, Seville 2002
10. Parallel Problem Solving from Nature VII, Granada (2002)
11. Mexican International Conference on Artificial Intelligence, Merida (2002)
12. IX Conference of the Spanish Artificial Intelligence Association, Gijón (2001)
13. International Symposium on Adaptive Systems. Evolutionary Computation and Probabilistic Graphical Models, Havana (2001)
14. Parallel Problem Solving from Nature VI, Paris (2000)

Member of Committees-Panels Evaluating Grants, Projects and Research Careers

1. *Norwegian Centres of Excellence*, Oslo
2. *Universidad de la República*, Montevideo
3. *European Research Council*, Brussels
4. *Research Assessment University of Helsinki*, Helsinki
5. *Medical Research Council*, London
6. *Danish Agency for Science and Higher Education*, Odense
7. *Agencia de Calidad del Sistema Universitario Vasco (UNIBASQ)*, Vitoria-Gasteiz
8. *Comisión Nacional de Investigación Científica y Tecnológica Chile*, Santiago de Chile
9. *Grants Program of the Obra Social la Caixa*, Barcelona
10. *Agència de Gestió d'Ajuts Universitaris i de Recerca (AGUAR)*, Barcelona
11. *INESC TEC Scientific Advisory Board*, Porto
12. *The Welcome Trust*, London
13. *The Research Foundation - Flanders (FWO)*, Flanders
14. *The Dutch Technology Foundation (STW)*, Utrecht
15. *The Israel Science Foundation*, Jerusalem
16. *Swiss National Science Foundation*, Berna
17. *Croatian Science Foundation*, Zagreb
18. *para a Ciência e a Tecnologia*, Lisboa
19. *Fundacão para a Ciência e a Tecnologia*, Lisboa
20. *Fonds de la Recherche Scientifique*, Paris

21. *Fonds de la Recherche Scientifique - FNRS, Agence de Financement de la Recherche pour la Belgique Francophone*, Bruselas
22. *ICREA Academia*, Barcelona
23. *ICREA Promotion*, Barcelona
24. *Junta de Andalucia*, Córdoba
25. *Agencia para la Calidad del Sistema Universitario de Castilla y León*, Valladolid
26. *Gobierno de Castilla y León*, Valladolid
27. *Gobierno de Aragón*, Zaragoza
28. *Generalitat Valenciana*, Valencia
29. *Ruder Bošković*, Zagreb
30. *Austrian Science Fund*, Vienna
31. *Comité de Evaluadores de Proyectos en Tecnologías de la Información*, Spanish Ministry of Science and Technology, Madrid
32. *Comité de Expertos de la Agencia Nacional de Evaluación y Prospectiva*, Spanish Ministry of Science and Technology, Madrid
33. *European Coordinating Committee for Artificial Intelligence*, European Conference on Artificial Intelligence, Edinburgh
34. *Fundación Séneca*, Murcia
35. *Agencia Nacional de Evaluación y Prospectiva*, Madrid
36. *Council of Physical Sciences of NWO (Computer Science)*, Netherlands Organization for Scientific Research, La Haya
37. *College of Science and Engineering at the City University of Hong Kong*, Hong Kong
38. *University of Helsinki*, Helsinki
39. *University of Windsor*, Ontario

Dissemination Activities

- *Newpapers*: El Diario Vasco, El Correo Innova+, ABC, Expansión, Retina, AS
- *Magazines*: Elhuyar Zientzia eta Teknologia, Pil-pilean
- *Radio*: Radio3 (RNE), Radio Extremadura, Onda Cero, Instituto Mexicano de la Radio
- *Television*: Televisión Española, IBE La Televisión Iberoamericana, beIn La Liga
- *Digital Media*: El Pais Digital, madri+d, Canal UPM, ABC, Daily News, Diario Digital de Asturias, Sciences Avenir, Science Daily, El Correo Digital, Plataforma SINC, Andalucía Investiga, Matepedia, Matematicalia, Astekari Digitala, Terra Noticias, Catalunya, Vanguardista, La Universidad Responde (CRUE), Pfizer, Vademecum, DiarioFarma, Infosalus, Siglo XXI, IM Médico Hospitalario, Medicina21, Anisalud, Farmanews, Sociedad Española de Informática de la Salud

Software Registration

1. *Elvira: Entorno para el desarrollo de modelos gráficos probabilísticos (programa de ordenador)*. A. Cano, S. Moral, M. Gómez, J.F. Huete, A. Salmerón, J. del Sagrado, J.A. Gámez, J.M. Puerta, F.J. Díez, C. Lacave, P. Larrañaga, B. Sierra, J.A. Lozano, I. Inza, S. Acid, L.M. de Campos, J.M. Fernández. Registro de la Propiedad Industrial de la Junta de Andalucía 2002-0420031059

Patents

1. *Methods and Kits for the Diagnosis and the Staging of Colorectal Cancer*. A. García, B. Suarez, M. Betanzos, G. López, R. Armañanzas, I. Inza, P. Larrañaga. WO-2010-034794
2. *Test Predictor de Supervivencia Global de Adenocarcinoma de Pulmón*. R. García, J. M. Paramio, P. Larrañaga, C. Bielza. P-2010-31626

Managing

- Academic Secretary of the Computer Science School of the University of the Basque Country (1988–1991)
- Expert Manager of Computer Technology area, Deputy Directorate of research projects, of the Spanish Ministry of Science and Innovation (2007–2010)
- Member of the Committee for the Evaluation of the Research Activities of the University Professors, Spanish Ministry of Education (2010–2011)
- Member of the Group of Experts collaborating with the Spanish Ministry of Science, Innovation and Universities in the Spanish Strategy on Artificial Intelligence, 2019

Personal Awards/Honors

- *ELLIS Fellow*, Tübingen (2023)
- *Sigma Xi Membership, The Scientific Research Honor Society*, North Carolina (2023)
- *IEEE Senior Membership*, New Jersey (2022)
- *Member of Jakiunde, Academy for the Science, the Arts, and Letters of the Basque Country*, Bergara (2022)
- *Fellow of the Asia-Pacific Artificial Intelligence Association*, Hong Kong (2021)
- *Amity Researchers Award for Significant Contribution in the field of Machine Learning*, New Delhi (2020)
- *Award of the Universidad Politécnica de Madrid to the Incorporation of Research Excellence*, Madrid (2019)
- *Member of the Academia Europaea*, London (2018)
- *Prize of the Spanish Association for Artificial Intelligence*, Granada (2018)
- *Spanish National Prize in Computer Science*, Aritmel Award, Madrid (2013)
- *Member of the European Association for Artificial Intelligence*, EuroAi Fellow, Montpellier (2012)
- *Best PhD Thesis in Engineering in the University of the Basque Country*, Bilbao (1996)