

PROF. CONCHA BIELZA



A. GENERAL INFORMATION

PERSONAL INFORMATION

Name:	Concha Bielza
Birthdate:	April 16, 1966
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

- Co-leader of the Computational Intelligence Group since its foundation in 2010
- Full Professor with the Department of Artificial Intelligence, Technical University of Madrid, Spain (since 2010)
- Associate Professor with the Department of Artificial Intelligence, Technical University of Madrid, Spain (1997-2010)
- Assistant Professor with the Department of Artificial Intelligence, Technical University of Madrid, Spain (1991-1997)
- Part-time Lecturer with the Complutense University of Madrid - St. Thomas University (1989-1992)

QUALIFICATIONS

- Habilitation for full Professor in Engineering, Madrid, Spain, 2009
- PhD in Computer Science, *Contributions to the Analysis of Decision-Making Supercomplex Problems*, Technical University of Madrid, Spain, 1996. Awarded with the best PhD thesis in the Technical University of Madrid
- Degree on Mathematics, specialization in Statistics and Operation Research, Complutense University of Madrid, Spain, 1989

RESEARCH INTEREST

My main research interests are: Probabilistic graphical models (Decision Analysis under uncertainty specially with Influence Diagrams, partial information on probabilities and utilities, approximate solutions, explanation of results), Bayesian networks (learning from data, supervised and unsupervised classification), evolutionary computation (genetic algorithms, estimation of distribution algorithms, applications in (multi-objective) optimization), logistic regression and regularization, application domains: medicine, reservoirs, auctions, project selection, industrial machining, astrophysics, agriculture, bioinformatics, bibliometry, neuroscience. In neuroscience, I am interested in ultranatomy (3D models of dendritic arbors, spine classification, interneuron nomenclature consensus, spatial distribution of sinapses and astrocytes, new types of neuron discovery), neurodegenerative diseases diagnosis (Parkinson, Alzheimer, epilepsy), brain computer interfaces and brain networks.

THE CV IN NUMBERS

- Books: 4
- Edited Books: 2
- Journal Papers (ISI Web of Knowledge): 107
- Journal Papers (Non in ISI Web of Knowledge): 10
- Book Chapters: 38
- Conference Publications: 50
- Conference Contributions: 139 (21 invited + 118 accepted)
- Technical Reports: 21
- Awards: 18

- Public Research Projects: 46
- Private Research Projects: 17

- Supervised Ph.D. Theses: 9
- Supervised Master Theses: 15
- Supervised Graduate Projects: 26

- Editorial Board of Journals: 1
- Editor of Journal Special Issues: 4
- Journal Referee: 53 manuscripts
- Plenary Talks in Conferences: 3
- Organizer of Congress and Scientific Events: 12
- Program Committee Member: 64
- Session Chair of Conferences: 14
- Tutorials: 3
- Patents: 1
- Registered Software: 3

CITATIONS AND *h*-INDEX

- ISI Web of Knowledge
Citations: 1159
h-index: 14

 - Google Scholar
Citations: 2811
h-index: 23
Citations (since 2010): 2136
h-index (since 2010): 21
-

B. PUBLICATION RECORD

BOOKS

1. Ibáñez, A., Bielza, C., Larrañaga, P. (2011). *Scientific Productivity and Visibility of Public Spanish Universities Academic Staff in the Area of Computer Sciences*. Fundación General de la U.P.M. (in Spanish). 280 pages
2. Ríos-Insua, S., Mateos, A., Bielza, C., Jiménez, A. (2004). *Operation Research. Deterministic and Stochastic Models*. Centro de Estudios Ramón Areces (in Spanish). 552 pages. Awarded with the Best Textbook Prize (UPM Foundation)
3. Ríos-Insua, S., Bielza, C., Mateos, A. (2002). *Fundamentals of Decision Support Systems*. Ra-Ma (in Spanish). 416 pages
4. Ballesteros, E., Bielza, C., Gómez, M., Maldonado, J.A., Ballbé, P. (1999). *Health Economy, Statistics for Medical Doctors, Computer-Based Clinical Training*. Dossat 2000 (in Spanish). 317 pages

EDITED BOOKS

1. Bielza, C., Salmerón, A., Alonso-Betanzos, A., Hidalgo, J.I., Martínez, L., Troncoso, A., Corchado, E., Corchado, J.M. (2013). *Advances in Artificial Intelligence, Lecture Notes in Artificial Intelligence, Vol. 8109*. Springer. 404 pages
2. Bielza, C., Salmerón, A. (2013). *Proceedings of the XV Conference of the Spanish Association for Artificial Intelligence (CAEPIA 2013)*. CEDI (in Spanish). 158 pages

JOURNAL PAPERS (ISI WEB OF KNOWLEDGE)

1. Anton-Sanchez, L., Bielza, C., Larrañaga, P., DeFelipe, J. (2016). Wiring economy of pyramidal cells in the juvenile rat somatosensory cortex. *PLoS ONE*, in press (doi:10.1371/journal.pone.0165915)
2. Anton-Sanchez, L., Bielza, C., Benavides-Piccione, R., DeFelipe, J., Larrañaga, P. (2016). Dendritic and axonal wiring optimization of cortical GABAergic interneurons. *Neuroinformatics*, 14, 4, 453-464
3. Fernandez-Gonzalez, P., Benavides-Piccione, R., Leguey, I., Bielza, C., Larrañaga, P., DeFelipe, J. (2016). Dendritic branching angles of pyramidal neurons of the human cerebral cortex. *Brain Structure and Function*, (doi:10.1007/s00429-016-1311-0)
4. Leguey, I., Bielza, C., Larrañaga, P., Kastanauskaite, A., Rojo, C., Benavides-Piccione, R., and DeFelipe, J. (2016). Dendritic branching angles of pyramidal cells across layers of the juvenile rat somatosensory cortex. *Journal of Comparative Neurology*, 524, 13, 2567-2576
5. Leitner, F., Bielza, C., Hill, S.L., Larrañaga, P. (2016). Data publications correlate with citation impact. *Frontiers in Neuroscience*, 10, Article 419
6. Rodriguez-Lujan, L., Larrañaga, P., Bielza, C. (2016). Frobenius norm regularization for the multivariate von Mises distribution. *International Journal of Intelligent Systems*, (DOI: 10.1002/int.21834)
7. Varando, G., Bielza, C., Larrañaga, P. (2016). Decision functions for chain classifiers based on Bayesian networks for multi-label classification. *International Journal of Approximate Reasoning*, 68, 164-178
8. Borchani, H., Larrañaga, P., Gama, J., Bielza, C. (2016). Mining multi-dimensional concept-drifting data streams using Bayesian network classifiers. *Intelligent Data Analysis*, 20, 2, 257-280
9. Rojo, C., Leguey, I., Kastanauskaite, A., Bielza, C., Larrañaga, P., DeFelipe, J., Benavides-Piccione, R. (2016). Laminar differences in dendritic structure of pyramidal neurons in juvenile rat somatosensory cortex. *Cerebral Cortex*, 26, 6, 2811-2822
10. Varando, G., Bielza, C., Larrañaga, P. (2015). Decision boundary for discrete Bayesian network classifiers. *Journal of Machine Learning Research*, 16, 2725-2749

11. Bielza, C., Gama, J., Jorge, A., Žliobaitė, I. (2015). Guest editors introduction: special issue of the ECMLPKDD 2015 journal track. *Data Mining and Knowledge Discovery*, 29, 1113-1115
12. Bielza, C., Gama, J., Jorge, A., Žliobaitė, I. (2015). Guest editors introduction: special issue of the ECMLPKDD 2015 journal track. *Machine Learning*, 100, 157-159
13. Luengo-Sanchez, S., Bielza, C., Benavides-Piccione, R., Fernaud-Espinosa, I., DeFelipe, J., Larrañaga, P. (2015). A univocal definition of the neuronal soma morphology using Gaussian mixture models. *Frontiers in Neuroanatomy*, 9, Article 137
14. Borchani, H., Varando, G., Bielza, C., Larrañaga, P. (2015). A survey on multi-output regression. *WIREs Data Mining and Knowledge Discovery*, 5, 216-233
15. 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. Agüera-Ortiz, J. López-Álvarez, P. Larrañaga, C. Bielza, J. Álvarez-Linera, P. Martínez-Martin (2015). The Vallecas Project: a cohort to identify early markers and mechanisms of Alzheimer's disease. *Frontiers in Aging Neuroscience*, 7, Article 181
16. Larrañaga, A., Bielza, C., Pongrácz, P., Faragó, T., Bálint, A., Larrañaga, P. (2015). Comparing supervised learning methods for classifying sex, age, context and individual Mudi dogs from barking. *Animal Cognition*, 18, 2, 405-421
17. Bielza, C., Moral, S., Salmerón, A. (2015). Recent advances in probabilistic graphical models. Editorial. *International Journal of Intelligent Systems*, 30, 3, 207-208
18. Varando, G., López-Cruz, P.L., Nielsen, T., Larrañaga, P., Bielza, C. (2015). Conditional density approximations with mixtures of polynomials. *International Journal of Intelligent Systems*, 30, 3, 236-264
19. Mihaljević, B., Benavides-Piccione, R., Guerra, L., DeFelipe, J., Larrañaga, P., Bielza, C. (2015). Classifying GABAergic interneurons with semi-supervised projected model-based clustering. *Artificial Intelligence in Medicine*, 65, 49-59
20. Masegosa, A. R., Armañanzas, R., Abad-Grau, M. M., Potenciano, V., Moral, S., Larrañaga, P., Bielza, C., Matesanz, F. (2015). Discretization of expression quantitative trait loci in association analysis between genotypes and expression data. *Current Bioinformatics*, 10, 2, 144-164
21. López-Cruz, P.L., Bielza, C., Larrañaga, P. (2015). Directional naive Bayes classifiers. *Pattern Analysis and Applications*, 18, 225-246
22. Mihaljević, B., Benavides-Piccione, R., Bielza, C., DeFelipe, J., Larrañaga, P. (2015). Bayesian network classifiers for categorizing cortical GABAergic interneurons. *Neuroinformatics*, 13, 2, 193-208
23. Ibáñez, A., Armañanzas, A., Bielza, C., Larrañaga, P. (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
24. Karshenas, H., Bielza, C., Larrañaga, P. (2015). Interval-based ranking in noisy evolutionary multi-objective optimization. *Computational Optimization and Applications*, 61, 2, 517-555
25. Mihaljević, B., Bielza, C., Benavides-Piccione, R., DeFelipe, J., Larrañaga, P. (2014). Multi-dimensional classification of GABAergic interneurons with Bayesian network-modeled label uncertainty. *Frontiers in Computational Neuroscience*, 8, article 150
26. Bielza, C., Larrañaga, P. (2014). Bayesian networks in neuroscience: A survey. *Frontiers in Computational Neuroscience*, 8, Article 131
27. Anton-Sanchez, L., Bielza, C., Merchán-Pérez, A., Rodríguez, J.-R., DeFelipe, J., Larrañaga, P. (2014). Three-dimensional distribution of cortical synapses: A replicated point pattern-based analysis. *Frontiers in Neuroanatomy*, 8, Article 85 (doi: 10.3389/fnana.2014.00085)

28. Bielza, C., Benavides-Piccione, R., López-Cruz, P.L., Larrañaga, P., DeFelipe, J. (2014). Branching angles of pyramidal cell dendrites follow common geometrical design principles in different cortical areas. *Scientific Reports*, 4, Article 5909
29. Morales, J., Benavides-Piccione, R., Dar, M., Feraud, I., Rodríguez, A., Anton-Sanchez, L., Bielza, C., Larrañaga, P., DeFelipe, J., Yuste, R. (2014). Random positions of dendritic spines in the human cerebral cortex, *Journal of Neuroscience*, 34, 30, 10078-10084
30. Bielza, C., Larrañaga, P. (2014). Discrete Bayesian network classifiers: A survey. *ACM Computing Surveys*, 47, 1, Article 5 (43 pages)
31. Borchani, H., Bielza, C., Martínez-Martín, P., Larrañaga, P. (2014). Predicting EQ-5D from the Parkinson's disease Questionnaire PDQ-8 using multi-dimensional Bayesian network classifiers. *Biomedical Engineering: Applications, Basis and Communications*, 26, 1, 1450015
32. López-Cruz, P.L., Larrañaga, P., DeFelipe, J., Bielza, C. (2014). Bayesian network modeling of the consensus between experts: An application to neuron classification. *International Journal of Approximate Reasoning*, 55, 1, 3-22
33. Ibáñez, A., Bielza, C., Larrañaga, P. (2014). Cost-sensitive selective naive Bayes classifiers for predicting the increase of the h-index for scientific journals. *Neurocomputing*, 135, 5, 45-52
34. Guerra, L., Bielza, C., Robles, V., Larrañaga, P. (2014). Semi-supervised projected model-based clustering. *Data Mining and Knowledge Discovery*, 28, 4, 882-917
35. Sucar, L.E., Bielza, C., Morales, E.F., Hernandez-Leal, P., Zaragoza, J.H., Larrañaga, P. (2014). Multi-label classification with Bayesian network-based chain classifiers. *Pattern Recognition Letters*, 41, 14-22
36. López-Cruz, P.L., Bielza, C., Larrañaga, P. (2014). Learning mixtures of polynomials of multidimensional probability densities from data using B-spline interpolation. *International Journal of Approximate Reasoning*, 55, 989-1010
37. Merchán-Pérez, A., Rodríguez, J.R., González, S., Robles, V., DeFelipe, J., Larrañaga, P., Bielza, C. (2014). Three-dimensional spatial distribution of synapses in the neocortex: A dual-beam electron microscopy study. *Cerebral Cortex*, 24, 1579-1588
38. Read, J., Bielza, C., Larrañaga, P. (2014). Multi-dimensional classification with super-classes. *IEEE Transactions on Knowledge and Data Engineering*, 26, 7, 1720-1733
39. Karshenas, H., Santana, R., Bielza, C., Larrañaga, P. (2013). Multi-objective estimation of distribution algorithms based on joint modeling of objectives and variables. *IEEE Transactions on Evolutionary Computation*, 18, 4, 519-542
40. Santana, R., McGarry, L.M., Bielza, C., Larrañaga, P., Yuste, R. (2013). Classification of neocortical interneurons using affinity propagation. *Frontiers in Neural Circuits*, 7, Article 185, doi: 10.3389/fn-cir.2013.00185
41. Vidaurre, D., van Gerven M., Bielza, C., Larrañaga, P., Heskes, T. (2013). Bayesian sparse partial least squares. *Neural Computation*, 25, 12, 3318-3339
42. Ibáñez, A., Larrañaga, P., Bielza, C. (2013). Cluster methods for assessing research performance: Exploring Spanish computer science. *Scientometrics*, 97, 571-600
43. Santana, R., Armañanzas, R., Bielza, C., Larrañaga, P. (2013). Network measures for information extraction in evolutionary algorithms. *International Journal of Computational Intelligence Systems*, 6, 6, 1163-1188
44. Borchani, H., Bielza, C., Toro, C., Larrañaga, P. (2013). Predicting human immunodeficiency virus inhibitors using multi-dimensional Bayesian network classifiers. *Artificial Intelligence in Medicine*, 57, 3, 219-229

45. Vidaurre, D., Bielza, C., Larrañaga, P. (2013). A survey of L_1 regression. *International Statistical Review*, 81, 3, 361-387
46. Bielza, C., Fernández del Pozo, J.A., 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
47. Vidaurre, D., Bielza, C., Larrañaga, P. (2013). An L_1 -regularized naive Bayes-inspired classifier for discarding redundant predictors. *International Journal on Artificial Intelligence Tools*, 22, 4, 1350019
48. Armañanzas, R., Alonso-Nanclares, L., DeFelipe-Oroquieta, J., Kastanauskaite, A., de Sola, R.G., DeFelipe, J., Bielza, C., Larrañaga, P. (2013). Machine learning approach for the outcome prediction of temporal lobe epilepsy surgery. *PLoS ONE*, 8, 4:e62819
49. Vidaurre, D., Bielza, C., Larrañaga, P. (2013). Sparse regularized local regression. *Computational Statistics and Data Analysis*, 62, 122-135
50. Armañanzas, R., Bielza, C., Chaudhuri, K.R., Martínez-Martín, P., Larrañaga, P. (2013). Unveiling relevant non-motor Parkinson's disease severity symptoms using a machine learning approach. *Artificial Intelligence in Medicine*, 58(3), 195-202
51. Vidaurre, D., Bielza, C., Larrañaga, P. (2013). Classification of neural signals from sparse autoregressive features. *Neurocomputing*, 111, 21-26
52. Larrañaga, P., Karshenas, H., Bielza, C., Santana, R. (2013). A review on evolutionary algorithms in Bayesian network learning and inference tasks. *Information Sciences*, 233, 109-125
53. DeFelipe J, López-Cruz PL, Benavides-Piccione R, Bielza C, Larrañaga P, Anderson S, Burkhalter A, Cauli A, Fairén A, Feldmeyer D, Fishell G, Fitzpatrick D, Freund TF, González-Burgos G, Hestrin S, Hill S, Hof PR, Huang J, Jones EG, Kawaguchi Y, Kisvárdy Z, Kubota Y, Lewis DA, Marín O, Markram H, McBain CJ, Meyer HS, Monyer H, Nelson SB, Rockland K, Rossier J, Rubenstein JLR, Rudy B, Scanziani M, Shepherd GM, Sherwood CC, Staiger JF, Tamás G, Thomson A, Wang Y, Yuste R, Ascoli GA (2013). New insights in the classification and nomenclature of cortical GABAergic interneurons. *Nature Reviews Neuroscience*, 14(3), 202-216
 → Highly Cited Paper at Essential Science Indicators (top 1% of articles by total citations in discipline Neuroscience & Behavior)
54. Ibáñez, A., Bielza, C., Larrañaga, P. (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
55. García-Torres, M., Armañanzas, R., Bielza, C., Larrañaga, P. (2013). Comparison of metaheuristic strategies for peakbin selection in proteomic mass spectrometry data. *Information Sciences*, 222, 229-246
56. Karshenas, H., Santana, R., Bielza, C., Larrañaga, P. (2013). Regularized continuous estimation of distribution algorithms. *Applied Soft Computing*, 13, 2412-2432
57. Morales, D.A., Vives-Gilabert, Y., Gómez-Ansón, B., Bengoetxea, E., Larrañaga, P., Bielza, C., Pagonabarraga, J., Kulisevsky, J., Corcuera-Solano, I., Delfino, M. (2013). Predicting dementia development in Parkinson's disease using Bayesian network classifiers. *Psychiatry Research: NeuroImaging*, 213, 92-98
58. Ibáñez, A., Bielza, C., Larrañaga, P. (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
59. Santana, R., Bielza, C., Larrañaga, P. (2012). Conductance interaction identification by means of Boltzmann distribution and mutual information analysis in conductance-based neuron models. *BMC Neuroscience*, 13(Suppl 1):P100

60. Larrañaga, P., Karshenas, H., Bielza, C., Santana, R. (2012). A review on probabilistic graphical models in evolutionary computation. *Journal of Heuristics*, 18, 5, 795–819
61. Vidaurre, D., Rodríguez, E.E., Bielza, C., Larrañaga, P., Rudomin, P. (2012). A new feature extraction method for signal classification applied to cord dorsum potential detection. *Journal of Neural Engineering*, 9, 5, 056009
62. Dueñas, M., Santos, M., Aranda, J.F., Bielza, C., Martínez-Cruz, A.B., Lorz, C., Taron, M., Ciruelos, E.M., Rodríguez-Peralto, J.L., Martín, M., Larrañaga, P., Dahabreh, J., Stathopoulos, G.P., Rosell, R., Paramio, J.M., García-Escudero, R. (2012). Mouse p53-deficient cancer models as platforms for obtaining genomic predictors of human cancer clinical outcomes. *PLoS ONE*, 7, 8: e42494
63. Borchani, H., Bielza, C., Martínez-Martín, P., Larrañaga, P. (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
64. Santana, R., Bielza, C., Larrañaga, P. (2012). Regularized logistic regression and multi-objective variable selection for classifying MEG data. *Biological Cybernetics*, 106, 6-7, 389–405
65. Maojo, V., García-Remesal, M., Bielza, C., Crespo, J., Pérez-Rey, D., Kulikowski, C. (2012). Biomedical informatics publications: A global perspective. Part II: Journals. *Methods of Information in Medicine*, 51, 2, 131–137
66. Maojo, V., García-Remesal, M., Bielza, C., Crespo, J., Pérez-Rey, D., Kulikowski, C. (2012). Biomedical informatics publications: A global perspective. Part I: Conferences. *Methods of Information in Medicine*, 51, 2, 82-90
67. Armañanzas, R., Larrañaga, P., Bielza, C. (2012). Ensemble transcript interaction networks: A case study on Alzheimer’s disease. *Computer Methods and Programs in Biomedicine*, 108, 1, 442–450
68. Guerra, L., Robles, V., Bielza, C., Larrañaga, P. (2012). A comparison of cluster quality indices using outliers and noise. *Intelligent Data Analysis*, 16, 4, 703–715
69. Vidaurre, D., Bielza, C., Larrañaga, P. (2012). Lazy lasso for local regression. *Computational Statistics*, 27, 3, 531–550
70. Vidaurre, D., Bielza, C., Larrañaga, P. (2011). On nonlinearity in neural encoding models applied to the primary visual cortex. *Network: Computation in Neural Systems*, 22, 1-4, 97–125
71. Ibáñez, A., Larrañaga, P., Bielza, C. (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
72. Bielza, C., Li, G., Larrañaga, P. (2011). Multi-dimensional classification with Bayesian networks. *International Journal of Approximate Reasoning*, 52, 705–727
73. López-Cruz, P.L., Bielza, C., Larrañaga, P., Benavides-Piccione, R., DeFelipe, J. (2011). Models and simulation of 3D neuronal dendritic trees using Bayesian networks. *Neuroinformatics*, 9, 347–369
74. Fernández del Pozo, J.A., Bielza, C. (2011). Dealing with complex queries in decision support systems. *Data & Knowledge Engineering*, 70, 167–181
75. Bielza, C., Robles, V., Larrañaga, P. (2011). Regularized logistic regression without a penalty term: An application to cancer classification with microarray data. *Expert Systems with Applications*, 38, 5110–5118
76. Santana, R., Bielza, C., Larrañaga, P. (2011). Optimizing brain networks topologies using multi-objective evolutionary computation. *Neuroinformatics*, 9, 3–19
77. Bielza, C., Gómez, M., Shenoy, P.P. (2011). A review of representation issues and modelling challenges with influence diagrams. *Omega: International Journal of Management Science*, 39, 227–241

78. Borchani, H., Larrañaga, P., Bielza, C. (2011). Classifying evolving data streams with partially labelled data. *Intelligent Data Analysis*, 15, 655-670
79. Guerra, L., McGarry, L., Robles, V., Bielza, C., Larrañaga, P., Yuste, R. (2011). Comparison between supervised and unsupervised classification of neuronal cell types: A case study. *Developmental Neurobiology*, 71, 1, 71–82
80. Armañanzas, R., Saeys, Y., Inza, I., García-Torres, M., Bielza, C., van de Peer, Y., Larrañaga, P. (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
81. Bengoetxea, E., Larrañaga, P., Bielza, C., Fernández del Pozo, J.A. (2011). Optimal row and column ordering to improve table interpretation using estimation of distribution algorithms. *Journal of Heuristics*, 17(5), 567-588
82. Cuesta, I., Bielza, C., Cuenca-Estrella, M., Larrañaga, P., Rodríguez-Tudela, J.L. (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
83. Bielza, C., Gómez, M., Shenoy, P.P. (2010). Modelling challenges with influence diagrams: Constructing probability and utility models. *Decision Support Systems*, 49, 354–364
84. Santana, R., Bielza, C., Larrañaga, P., Lozano, J.A., Echegoyen, C., Mendiburu, A., Armañanzas, A., Shakya, S. (2010). MATEDA 2.0: Estimation of distribution algorithms in MATLAB. *Journal of Statistical Software*, 35, 7, 1-30
85. Vidaurre, D., Bielza, C., Larrañaga, P. (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
86. Bielza, C., Fernández del Pozo, J.A., Larrañaga, P., Bengoetxea, E. (2010). Multidimensional statistical analysis of the parameterization of a genetic algorithm for the optimal ordering of tables. *Expert Systems with Applications*, 37, 804-815
87. Ibáñez, A., Larrañaga, P., Bielza, C. (2009). Predicting citation count of Bioinformatics papers within four years of publication. *Bioinformatics*, 25, 24, 3303-3309
88. 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
89. 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
90. M. Correa, C. Bielza, J. Pamies-Teixeira (2009). Comparison of Bayesian networks and artificial neural networks for quality detection in a machining process. *Expert Systems with Applications*, 36, 7270–7279
91. Robles, V., Bielza, C., Larrañaga, P., González, S., Ohno-Machado, L. (2008). Optimizing logistic regression coefficients for discrimination and calibration using estimation of distribution algorithms. *TOP*, 16, 345-366
92. Correa, M., Bielza, C., Ramírez, M. de J., Alique, J.R. (2008). A Bayesian network model for surface roughness prediction in the machining process. *International Journal of Systems Science*, 39, 1181-1192
93. Bielza, C., Fernández del Pozo, J.A., Lucas, P. (2008). Explaining clinical decisions by extracting regularity patterns. *Decision Support Systems*, 44, 397-408

94. Gómez, M., Bielza, C., Fernández del Pozo, J.A., Ríos-Insua, S. (2007). A graphical decision-theoretic model for neonatal jaundice. *Medical Decision Making*, 27, 3, 250-265
95. Larrañaga, P., Calvo, B., Santana, R., Bielza, C., Galdiano, J., Inza, I., Lozano, J.A., Armañanzas, R., Santafé, G., Pérez, A., Robles, V. (2006). Machine learning in bioinformatics. *Briefings in Bioinformatics* 17, 1, 86-112
→ Highly Cited Paper at Essential Science Indicators (top 1% of articles by total citations in discipline Computer Science)
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8. 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, Universidad Politécnica de Madrid (40 pp)

9. 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, Universidad Politécnica de Madrid (29 pp)
10. R. Santana, C. Bielza, P. Larrañaga (2010). *Network measures for re-using problem information in EDAs*. Technical Report TR:UPM-FI/DIA/2010-3, Universidad Politécnica de Madrid (11 pp)
11. 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, Universidad Politécnica de Madrid (29 pp)
12. C. Bielza, G. Li, P. Larrañaga (2010). *Multi-dimensional classification with Bayesian networks*. Technical Report TR:UPM-FI/DIA/2010-1, Universidad Politécnica de Madrid (34 pp)
13. 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, Universidad Politécnica de Madrid (22 pp)
14. 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, Universidad Politécnica de Madrid (25 pp)
15. M. Correa, C. Bielza (2009). *Explanation of a Bayesian network classifier by means of decision trees*. Technical Report UPM-FI-DIA/2009-3, Universidad Politécnica de Madrid (22 pp)
16. Bielza, C., Gómez, M., Shenoy, P. (2009). *Modelling challenges with influence diagrams: Representation issues*, Working Paper No.319, School of Business, University of Kansas (42 pp)
17. Bielza, C., Gómez, M., Shenoy, P. (2009). *Modelling challenges with influence diagrams: Constructing probability and utility models*, Working Paper No.320, School of Business, University of Kansas (26 pp)
18. Bielza, C., Shenoy, P. (1998). *A comparison of graphical techniques for asymmetric decision problems: Supplement to management science paper*, Working Paper No.282, School of Business, University of Kansas (36 pp)
19. Bielza, C., Ríos Insua, D. (1998). *Modelos gráficos para la toma de decisiones*, Technical Report 98-07 on Informatics and Applied Mathematics, Universidad Rey Juan Carlos (23 pp)
20. Bielza, C., Vidakovic, B. (1996). *Time adaptive wavelet denoising*, Discussion Paper 1996-24, ISDS, Duke University (14 pp)
21. Ríos Insua, D., Salewicz, K.A., Müller, P., Bielza, C. (1996). *Bayesian methods in reservoir operations: The Zambezi river case*, Discussion Paper 1996-30, ISDS, Duke University (49 pp)

AWARDS

1. Best *PhD Project on Artificial Intelligence –Doctoral Consortium–* (under my supervision), given by the Spanish Association for Artificial Intelligence to “Theoretical Studies and New Approaches to Bayesian Network Classifiers”, CAEPIA-2015, Albacete (2015)
2. Best paper of the *1st Machine Learning for Cyber Physical Systems Conference (ML4CPS-2015)*, Lemgo, Germany (2015)
3. 2014 Technical University of Madrid Research Prize
4. Best student paper in the *15th Annual Genetic and Evolutionary Computation Conference (GECCO-2013)*, Amsterdam (2013)
5. “Marco Ramoni” best paper award of the *European Society for Artificial Intelligence in MEDicine (AIME)*, Murcia (2013)
6. Second position in the “MEG Mind Reading” competition in *PASCAL2 and the International Conference on Artificial Neural Networks*, Espoo, Finland (2011)

7. Best PhD thesis (under my supervision) awarded by the *Spanish Mathematics Society*, Santiago de Compostela, 2011
8. Best paper of the *International Society of Applied Intelligence in IEA-AIE 2010*, Córdoba (2010)
9. First Position in “Biomag Data Analysis Competition 2010” in *Multivariate Classification of MEG Brain Data* in the International Conference on Biomagnetism (Biomag 2010), Dubrovnik, Croacia (2010)
10. Best paper award of the *Mexican International Conference on Artificial Intelligence*, Guanajuato, México (2009)
11. Best referee in the *XIII Conference of the Spanish Association for the Artificial Intelligence (CAEPIA 2009)*, Sevilla (2009)
12. Best graduate project (under my supervision) awarded by *Cátedra Mercamadrid* from Universidad Politécnica de Madrid, Madrid (2009)
13. Best textbook *Operation Research. Deterministic and Stochastic Models* awarded by *Fundación of Universidad Politécnica de Madrid*, Madrid (2004)
14. Best work to spread the health informatics applications of the *Spanish Society of Health Informatics*, Madrid (2004)
15. Best PhD thesis (under my supervision) awarded by the *Spanish Royal Academy of Doctors*, Madrid (2002)
16. Finalist in IV Annual Awards “Decision Analysis Society Practice Award Competition”, awarded by the *Decision Analysis Society of the INstitute For Operations Research and Management Science (INFORMS)*, San José, California, USA (2002)
17. Best PhD thesis in Engineering in the *Universidad Politécnica de Madrid*, Madrid (1997)
18. Award Student Paper Competition in Decision Analysis, awarded by the *Decision Analysis Society of the INstitute For Operations Research and Management Science (INFORMS)*, Atlanta, USA (1996)

C. RESEARCH PROJECTS

PUBLIC PROJECTS

1. *HBP - Human Brain Project. SGA1 Phase*. Horizon 2020, FET Flagship Initiative, European Commission, 2016-2018
2. *Advances in Multidimensional Classification and Anomaly Detection with Bayesian Networks*. Ministry of Economy and Competitiveness, 2017-2019. Project Leader
3. *Excellence Spanish Network “Big Data and Scalable Data Analysis”*. Ministry of Economy and Competitiveness, 2015-2017.
4. *Bayesian Network Learning with non-Directional and Directional Variables for Association Discovery, Multi-Target Prediction and Clustering*. Ministry of Economy and Competitiveness, 2014-2016. Project Leader
5. *Concepts and Applications of Intelligent Systems*. Madrid Autonomous Region, 2014-2016
6. *HBP - Human Brain Project. Rump Up Phase*. FET Flagship Initiative, European Commission, 2013-2016
7. *Spanish Network for the Advancement and Transference of Computational Intelligence*. Ministry of Economy and Competitiveness, 2012-2012
8. *Spanish Network on Data Mining and Machine Learning*. Ministry of Science and Innovation, 2010-2012

9. *HBP - Human Brain Project*. FET Flagship Initiative Preparatory Actions, European Commission, 2011-2011
10. *Data Mining with Probabilistic Graphical Models: New Algorithms and Applications*. Ministry of Science and Innovation, 2011-2013. Project Leader
11. *Follow-up Congress for Computer Technology Projects*, Ministry of Science and Innovation, 2010-2011. Project Leader
12. *Follow-up Congress for Computer Technology Projects*, Ministry of Science and Innovation, 2009-2010. Project Leader
13. *Intelligent Probabilistic System to Model Scientific Productivity in the Computer Science Area*, Ministry of Science and Innovation, 2009-2011. Project Leader
14. *Cajal Blue Brain Project*. Ministry of Science and Innovation, 2008-2018
15. *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
16. *Incremental Learning of Bayesian Networks with Data Streams from Data Coming from Time-Varying Distributions with Applications to Spam Detection*. Ministry of Foreign Affairs and Cooperation, 2008-2009. Project Leader
17. *Assessing Quality of Individual Predictions in Medical Decision Support Systems*. National Institutes of Health, USA (1-R01-LM009520-01), 2007-2010
18. *CONSOLIDER: Multimodal Interaction in Pattern Recognition and Computer Vision*, Ministry of Education and Science, 2007-2012
19. *Follow-up Congress for Computer Technology Projects*, Ministry of Education and Science, 2008-2009. Project Leader
20. *New Approaches for Multiobjective Learning of Supervised Classification Models and for Knowledge Synthesis in Decision Analysis Models*, Ministry of Education and Science, 2007-2010. Project Leader
21. *Concepts and Support Systems to Electronic Democracy*, Madrid Autonomous Region, 2006-2009
22. *Spanish Network on Probabilistic Graphical Models and Applications (Renewal)*, Ministry of Education and Science, 2007-2008
23. *Spanish Network on Multicriteria Decisions (Renewal 2)*, Ministry of Education and Science, 2006-2007
24. *E-Democracy: Internet-Based Support to Complex Decisions*, Ministry of Education and Science, 2005-2007
25. *Spanish Network on Multicriteria Decisions (Renewal 1)*, Ministry of Education and Science, 2005-2006
26. *Research, Development, Validation and Implementation of a Real State Valuation System Based on Artificial Intelligence Techniques*, Ministry of Economy and Treasury, 2005-2006
27. *Spanish Network on Probabilistic Graphical Models and Applications*, Ministry of Education and Science, 2005-2006
28. *Spanish Network on Pattern Recognition and Applications*, Ministry of Science and Technology, 2004-2006
29. *Spanish Network on Multicriteria Decisions*, Ministry of Science and Technology, 2003-2004
30. *Towards Electronic Democracy: Internet-Based Complex Decision Support*, European Science Foundation, 2002-2006

31. *Spanish Network on Research on Health Results and Public Health Services*, Ministry of Health and Consumption, 2003-2006
32. *Monitoring System of the Post-Harvest Evolution of Fruits and Vegetables, Using Sensor Matrices Based on Different Detection Principles*, Ministry of Science and Technology, 2004-2006
33. *A Multiobjective Decision Support System in Time and with Imprecision*, Ministry of Science and Technology, 2002-2004
34. *Simulation of Movement, Diffusion and Accumulation of Gases in Fruit and Vegetable Cold Storage Chambers Using Cellular Automata*, Technical University of Madrid, 2001-2002. Project Leader
35. *Contributions to Intelligent Decision Support System Development*, Madrid Autonomous Region, 2001-2002
36. *New Approaches for the Development of the IctNeo System for Neonatal Jaundice Decision Support*, Technical University of Madrid, 1999-2000. Project Leader
37. *Implementing Computerised Methodologies to Evaluate the Effectiveness of Countermeasures for Restoring Radionuclide Contaminated Fresh Water Ecosystems*, European Commission, 1999-2001
38. *Development of a Simulator of Damage Occurrence on a Fruit Grading Line*, Technical University of Madrid, 1999-2000. Project Leader
39. *New Approaches to Influence Diagrams-Based Intelligent Decision Systems: Applications to Neonatal Jaundice and Extracorporeal Life Support*, Ministry of Science, Culture and Sports, 1998-1999
40. *An Intelligent System for Reservoir Management*, Ministry of Education and Science, 1998-2000
41. *Complex Decision Problems*, Madrid Autonomous Region, 1997-1999
42. *A Knowledge-Based System for Neonatal Jaundice Treatment*, Ministry of Health and Consumption, 1997-1998
43. *A Model-Based Computerised System for Management Support to Identify Optimal Remedial Strategies for Restoring Radionuclide Contaminated Aquatic Ecosystems and Drainage Areas*, European Commission, 1996-1999
44. *Bayesian Analysis of Stochastic Processes (I y II)*, NATO, 1995-1998
45. *Robust Decision Analysis Implementation*, Ministry of Education and Science, 1995-1998
46. *A Knowledge Based System for Bayesian Reliability Predictions in Repairable Equipments*, Ministry of Education and Science, 1995-1996

PRIVATE PROJECTS

1. 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. Project Leader
2. (Competitive) Grant of Fundación BBVA to Research Groups on the topic of Big Data within project *Multi-view clustering with Bayesian networks*, 2016-2018
3. OLOCIP 11 S.L. contracting within project *Development of a computer program for prediction and analysis in sports using artificial intelligence*, 2016-2017
4. 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 decisiones orientada a la generación de servicios de alto valor añadido para la recuperación de la competitividad de la industria española (CARES)*, TIC-20150093, 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.

5. 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 decisiones orientada a la generación de servicios de alto valor añadido para la recuperación de la competitividad de la industria española (CARES)*, TIC-20150093, 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. Project Leader
6. 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. Project Leader
7. Atos Origin (P10-1015-100). *Modelos Gráficos Probabilistas Dinámicos y sus Aplicaciones*, 2009-2011. Project Leader
8. Produban (Banco Santander). *Minería de Datos y Geomarketing sobre Datos Financiero/Bancarios*, 2009-2010
9. Panda Security. *Adaptación Dinámica del Cambio en Sistemas de Aprendizaje. Problemática Drift*, 2009. Project Leader
10. Fundación Gil Gayarre. *Implantación y Explotación de una Medida de la Calidad de los Servicios en la Fundación Gil Gayarre*, 2005-2006
11. European Computing Consultants. *Modelos Dinámicos Lineales Bayesianos para la Previsión de la Demanda*, 2004. Project Co-leader
12. Telefónica, Publicidad e Información (TPI). *Predicción de Ventas por Anuncios en Páginas Amarillas*, Sept2002-Feb2003. Project Co-leader
13. Fundación Gil Gayarre. *Definición, Construcción, Implantación y Explotación de una Medida de la Calidad de los Servicios en la Fundación Gil Gayarre*, 2001-2002
14. Arthur Andersen. *Modelo de Predicción de Precios del Mercado Eléctrico*, 2001-2003. Project Co-leader
15. Airtel Móvil. *Optimización de Costes a Través de la Calidad y Fidelización: Un Enfoque Estadístico*, 1999
16. Coopers & Lybrand. *Una Metodología de Evaluación de la Calidad*, 1996-1997
17. Iberdrola. *Una Metodología para la Gestión de Embalses Hidroeléctricos*, 1995-1997

D. TEACHING AND SUPERVISION

UNDERGRADUATE COURSES

Machine Learning, Data Mining, Decision Support Systems, Information Systems, Models and Simulation, Simulation Methods, Stochastic Processes and Networks, Probability and Statistics, Statistical Inference, Mathematics for the Financial and Social Sciences

MASTER COURSES

Decision Support Systems, Machine Learning, Bayesian Networks, Data Mining, Intelligent Data Analysis, Bayesian Reasoning with Graphical Models

DOCTORATE COURSES

Bayesian Reasoning with Graphical Models, Probabilistic Graphical Models in Medicine, Fundamentals of Probabilistic Graphical Models, Decision Support Systems, Bayesian Methods in Artificial Intelligence, Randomized Computation, Simulation and Artificial Intelligence

SUMMER SCHOOLS

Madrid UPM Advanced Statistics and Data Mining Summer School (a worldwide top ten maths and stats summer school according to INOMICS, with 11 editions since 2006), Coordinator and Instructor

SUPERVISED PH. D. THESES –All PhD in Computer Science, Technical University of Madrid

1. A. Ibañez (2015). *Machine Learning in Scientometrics*
2. P.L. López-Cruz (2013). *Contributions to Bayesian networks learning with applications to neuroscience*
3. H. Karshenas (2013). *Regularized model learning in EDAs for continuous and multi-objective optimization*
4. H. Borchani (2013). *Multi-dimensional classification using Bayesian networks for stationary and evolving streaming data*
5. L. Guerra (2012). *Semi-supervised subspace clustering and applications to neuroscience*
6. D. Vidaurre (2012). *Regularization for sparsity in statistical analysis and machine learning*
7. M. Correa (2010). *Inteligencia artificial para predicción y control del acabado superficial en procesos de fresado a alta velocidad*
8. J.A. Fernández del Pozo (2006). *Listas KBM2L para la Síntesis de Conocimiento en Sistemas de Ayuda a la Decisión*
9. M. Gómez (2002). *IctNeo: Un sistema de ayuda a la decisión para el tratamiento de la ictericia en recién nacidos*

SUPERVISED MASTER THESES –All in Technical University of Madrid

1. D. Atienza (2016). *Detección de Anomalías durante un Proceso de Templado Láser con un Seguimiento Espacio-Temporal*
2. F. Rodríguez Sánchez (2016). *Multi-view Clustering with Bayesian Networks*
3. I. Córdoba-Sánchez (2015). *Fusión de Redes Bayesianas Gaussianas*
4. L. Antón-Sánchez (2015). *Computación Evolutiva de Bosques de Expansión Mínimos con Restricciones de Grado y de Rol*
5. L. Rodríguez-Luján (2015). *Caracterización y Simulación de Arborizaciones Dendríticas con Redes Bayesianas Incluyendo Variables Angulares*
6. Patricia Maraver (2015). *Clasificación Supervisada de las Neuronas de la Base de Datos NeuroMorpho*
7. M. Benjumeda (2014). *Learning Bayesian Networks from Data by the Incremental Compilation of New Network Polynomials*
8. S. Luengo (2014). *Clustering Basado en Redes Bayesianas con Predictoras Continuas. Aplicaciones en Neurociencia*
9. P. Fernández-González (2014). *Contributions to the truncated von Mises distribution for the univariate and bivariate case*
10. P. López-Adeva (2013). *Markov models for the multivariate von Mises distribution*
11. B. Mihaljevic (2013). *BAYESCLASS. An R package for learning Bayesian network classifiers. Applications to neuroscience*
12. J. Pérez (2012). *Replicated spatial point processes for statistical neuroscience*

13. P. López-Cruz (2010). *Simulación de morfologías dendríticas mediante redes Bayesianas*
14. A. Ibáñez (2009). *Técnicas de aprendizaje automático aplicadas a la bibliometría*
15. M.A. Abad (2009). *Minería de datos dependiente del contexto en dispositivos ubicuos*

SUPERVISED GRADUATE PROJECTS –All in Technical University of Madrid

1. A. Canales (2009). *Estudio bibliométrico de la producción científica del Departamento de Inteligencia Artificial, UPM, 2004-2008*
2. M. Vaquero (2009). *Heurísticos de optimización para regresión logística regularizada*
3. F. Andrés (2009). *Clasificadores Bayesianos para la detección de correo basura*
4. M. Fernández (2008). *Interfaz gráfico en vendimiadora para viticultura de precisión*
5. R. Gómez (2008). *Construcción de un filtro anti-spam con distintos clasificadores*
6. D. Soto (2008). *Diseño y desarrollo de un interfaz gráfico con LabVIEW para un Equipo espectrofotométrico de campo en la evaluación de frutos intactos*
7. I. Barrilero (2008). *Identificación de variables relevantes en modelos de toma de decisiones con diagramas de influencia*
8. A. Pérez (2007). *Detección de Movimiento Robusta a Cambios de Iluminación*
9. V. Oliva (2004). *Ajuste y generación de distribuciones para simular líneas de clasificación de fruta. SimLin 3.0*
10. D. Quero (2003). *Técnicas de seguimiento en visión computacional*
11. S. Galán (2003). *Simulación distribuida mediante la arquitectura HLA*
12. M. Calles (2002). *Simulador del movimiento, difusión y acumulación de gases en cámaras de frigoconservación de frutas y hortalizas mediante autómatas celulares. Versión 2.0*
13. V. Canseco (2002). *Distribución selectiva de la información*
14. E. Córcoles (2002). *Algoritmo genético para la búsqueda de secuencias de borrado de nodos en diagramas de influencia*
15. M. Ramos (2001). *Aspectos computacionales relacionados con la evaluación de diagramas de influencia*
16. S. Bielza (2001). *Simulador del movimiento, difusión y acumulación de gases en cámaras de frigoconservación de frutas y hortalizas mediante autómatas celulares*
17. R. Heradio (2000). *Regresión logística para la predicción de daño y simulación de líneas de clasificación de fruta*
18. M. Gersol (1999). *Gestión y control de la calidad en el servicio y su aplicación en entidades bancarias*
19. M. Cruz (1999). *Programa BAYES para inferencia estadística Bayesiana*
20. O. Pacios (1999). *Simulador de líneas de clasificación*
21. J.A. Fernández del Pozo (1998). *Sistema de ayuda a la decisión para el tratamiento de la ictericia neonatal: IctNeo*
22. J. Rey (1997). *Optimización discreta con computación local*
23. E. Pérez (1997). *BayRes: Un sistema de gestión de embalses. Módulo de optimización*
24. J. Fuertes (1997). *BayRes: Un sistema de gestión de embalses. Módulo de preferencias*

25. M. Farache (1996). *BayRes: Un sistema de gestión de embalses. Módulo de predicción*
26. A. Alberite (1995). *Redes de evaluación: Una herramienta para representar y resolver problemas de análisis de decisión*

E. SERVICE TO THE ACADEMIC COMMUNITY

EDITORIAL BOARD OF JOURNALS

1. Associate Editor of *Frontiers in Computational Neuroscience*

EDITOR OF JOURNAL SPECIAL ISSUES

1. C. Bielza, J. Gama, A. Jorge, I. Žliobaitė (2015). Special ECML PKDD issue. *Machine Learning*
2. C. Bielza, J. Gama, A. Jorge, I. Žliobaitė (2015). Special ECML PKDD issue. *Data Mining and Knowledge Discovery*
3. C. Bielza, P. Larrañaga (2014). Special issue on Bayesian Networks in Neuroscience. *Frontiers in Computational Neuroscience*
4. C. Bielza, A. Salmerón, S. Moral (2015). Special issue on Recent Advances in Probabilistic Graphical Models. *International Journal of Intelligent Systems*

PHD COMMITTEES

- Member of 18 PhD committees. 2001-today

INVITED SPEAKER IN UNIVERSITIES/INSTITUTIONS

- Denmark: Aalborg University (2009)
- Italy: Consiglio Nazionale delle Ricerche (1997)
- Germany: Spanish Embassy in Germany (Berlin) (2008), Cervantes Institute (Berlin) (2006)
- Greece: University of Patras (2010)
- Portugal: University of Aveiro (2009)
- South Korea: Seoul National University (2010)
- Spain: Spanish Open University (1998), Rey Juan Carlos University (2002, 2004, 2006, 2006), University of the Basque Country (2002, 2004), University of Sevilla (2004, 2007), University of Castilla - La Mancha (1998, 2010, 2011), University of Málaga (2012), Fiscal Studies Institute (2005, 2006, 2006), Carlos III Health Institute (2009), University Pablo de Olavide (2016)
- The Netherlands: Radboud University Nijmegen (2009, 2012)
- Tunisia: Institut Supérieur de Gestion de Tunis (Université de Tunis) (2008)
- United Kingdom: University of Essex (2009)
- United States of America: Institute of Statistics and Decision Sciences (Duke University, USA) (1996), University of Kansas (1997, 2000), Harvard Medical School (2005)

JOURNAL REFEREE:

1. Annals of Operations Research
2. Bioinformatics
3. Computational Statistics and Data Analysis
4. Computers in Biology and Medicine

5. Computer Methods and Programs in Biomedicine
6. Decision Analysis
7. Decision Support Systems
8. European Journal of Operational Research
9. Evolutionary Computation
10. Frontiers in Neuratomy
11. IEEE Transactions on Evolutionary Computation
12. IEEE Transactions on Pattern Analysis and Machine Intelligence
13. Information Sciences
14. International Journal of Approximate Reasoning
15. International Journal of Intelligent Systems
16. International Journal of Uncertainty, Fuzziness and Knowledge-Based Systems
17. Journal of Applied Statistics
18. Journal of Biomedical Informatics
19. Journal of Computational and Graphical Statistics
20. Journal of Computer Science and Technology
21. Journal of the Neurological Sciences
22. Machine Learning
23. Management Science
24. Medical Decision Making
25. Neurocomputing
26. PLOS Computational Biology
27. QÜESTIÓ (Quaderns d'Estadística i Investigació Operativa)
28. The Scientific World Journal
29. TOP

BOOK REVIEWER:

1. *Chapman & Hall/CRC Press*, 2013

PLENARY TALKS IN CONFERENCES

1. 8th European Conference on Data Mining 2014 (ECDM-2014) / 8th International Conference on Intelligent Systems and Agents 2014 (ISA-2014), Lisbon (2014)
2. 26th IEEE International Symposium on Computer-Based Medical Systems (CBMS), Porto (2013)
3. Sixth European Workshop on Probabilistic Graphical Models (PGM), Granada (2012)

ORGANIZER OF CONFERENCES AND SCIENTIFIC EVENTS

1. *Co-Chair of the Journal Track* (journals: Machine Learning, Data Mining and Knowledge Discovery), within The European Conference on Machine Learning and Principles and Practice of Knowledge Discovery in Databases (ECML PKDD-2015), Porto, 2015

2. *Jornadas Científico-Técnicas y Seminario Doctoral de la Red ATICA (SEMÁTICA-2013)*, Madrid, 2013
3. Program Chair of the *XV Conference of the Spanish Association for the Artificial Intelligence (CAEPIA '13)*, Madrid, 2013
4. Session *Optimization and Data Mining* within XXV European Conference on Operational Research (EURO XXV - 2012), Vilnius, 2012
5. *IX Jornada de Seguimiento de Proyectos en Tecnologías Informáticas*, Madrid, 2010
6. Session *Optimization and Data Mining* within XXIV European Conference on Operational Research (EURO XXIV - 2010), Lisbon, 2010
7. *VIII Jornada de Seguimiento de Proyectos en Tecnologías Informáticas*, Madrid, 2009
8. *VII Jornada de Seguimiento de Proyectos en Tecnologías Informáticas*, Zaragoza, 2007
9. *Doctorado Interuniversitario "Modelos Probabilísticos para la Inteligencia Artificial y la Minería de Datos"*, San Lorenzo de El Escorial (Madrid), 2006
10. *Primera Reunión de la Red Temática sobre Modelos Gráficos Probabilísticos y Aplicaciones*, San Lorenzo de El Escorial (Madrid), 2006
11. *Workshop on Graphical Modelling of Dependent Uncertainties for Decision Support in Public Policy*, Gartmore (UK), 2004
12. Sessions *Graphical Models in Decision Analysis: Complex Applications* and *Graphical Models in Decision Analysis: Novel Representations and Algorithms* within EURO XV-INFORMS XXXIV, Barcelona, 1997

PROGRAM COMMITTEE MEMBER

1. 4th IEEE International Conference on Data Science and Advanced Analytics (IEEE-DSAA-2017), Tokyo, 2017
2. 14th European Conference on Symbolic and Quantitative Approaches to Reasoning with Uncertainty (ECSQARU-2017), Lugano, 2017
3. 30th International Conference on Industrial, Engineering, Other Applications of Applied Intelligent Systems (IEA-AIE 2017). Special Track on "Graphical Models: from Theory to Applications", Arras (France), 2017
4. 15th Ibero-American Conference on Artificial Intelligence (IBERAMIA 2016), San José (Costa Rica), 2016
5. Workshop on Data Science for Social Good (SoGood 2016), within ECML-PKDD 2016, Riva del Garda (Italy), 2016
6. XVII Conferencia de la Asociación Española para la Inteligencia Artificial (CAEPIA-2016), Salamanca, 2016
7. International Conference on Probabilistic Graphical Models (PGM-2016), Lugano, 2016
8. 22nd European Conference on Artificial Intelligence (ECAI-2016), The Hague, 2016
9. 25th International Joint Conference on Artificial Intelligence (IJCAI-16), New York, 2016
10. I Workshop "BigData y Análisis de Datos Escalable" (BigDADE-2015), Albacete, 2015
11. XVI Conferencia de la Asociación Española para la Inteligencia Artificial (CAEPIA-2015), Albacete, 2015
12. Workshop on Adaptive Treatments and Therapies (WATT-2015), Istanbul, 2015

13. 2015 Genetic and Evolutionary Computation Conference (GECCO-2015), Madrid, 2015
14. 3rd International Work-Conference on Bioinformatics and Biomedical Engineering (IWBBIO-2015), Granada, 2015
15. Seventh European Workshop on Probabilistic Graphical Models (PGM'14), Utrecht, 2014
16. 21st European Conference on Artificial Intelligence (ECAI-2014), Prague, 2014
17. 2014 Genetic and Evolutionary Computation Conference (GECCO-2014), Vancouver, 2014
18. 15th Biennial European Conference of the Society for Medical Decision Making (ESMDM-2014), Antwerp, 2014
19. 2nd International Work-Conference on Bioinformatics and Biomedical Engineering (IWBBIO-2014), Granada, 2014
20. 23rd International Joint Conference on Artificial Intelligence (IJCAI-13), Beijing, 2013
21. 12th European Conference on Symbolic and Quantitative Approaches to Reasoning with Uncertainty (ECSQARU-2013), Utrecht, 2013
22. 2013 Genetic and Evolutionary Computation Conference (GECCO-2013), Amsterdam, 2013
23. IEEE Congress on Evolutionary Computation (IEEE CEC-2013), Cancún, 2013
24. International Work-Conference on Bioinformatics and Biomedical Engineering (IWBBIO-2013), Granada, 2013
25. Sixth European Workshop on Probabilistic Graphical Models (PGM'12), Granada, 2012
26. 7th Conference on Prestigious Applications of Intelligent Systems (PAIS-2012), within ECAI-2012, Montpellier, 2012
27. 9th Bayesian Modelling Applications Workshop (within UAI-2012), Catalina Island, 2012
28. 28th Conference on Uncertainty in Artificial Intelligence (UAI-2012), Catalina Island, 2012
29. 2012 Genetic and Evolutionary Computation Conference (GECCO-2012), Philadelphia, 2012
30. IEEE Congress on Evolutionary Computation (IEEE CEC-2012), Brisbane, 2012
31. 4th Biennial European Conference of the Society for Medical Decision Making (ESMDM-2012), Oslo, 2012
32. International Conference on Pattern Recognition Applications and Methods (ICPRAM-2012), Algarve, 2012
33. XIV Conferencia de la Asociación Española para la Inteligencia Artificial (CAEPIA'11), Tenerife, 2011
34. 22th International Joint Conference on Artificial Intelligence (IJCAI-11), Barcelona, 2011
35. 27th Conference on Uncertainty in Artificial Intelligence (UAI-2011), Barcelona, 2011
36. 2011 Genetic and Evolutionary Computation Conference (GECCO-2011), Dublin, 2011
37. Probabilistic Problem Solving in Biomedicine (ProBioMed'11), within 13th Conference on Artificial Intelligence in Medicine (AIME-2011), Bled, 2011
38. 13th International Conference on Discovery Science (DS-2010), Canberra, 2010
39. Fifth European Workshop on Probabilistic Graphical Models (PGM'10), Helsinki, 2010
40. 26th Conference on Uncertainty in Artificial Intelligence (UAI-2010), Catalina Island, 2010

41. 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
42. 13th European Meeting of the Society for Medical Decision Making (ESMDM-2010), Tyrol, 2010
43. XIII Conferencia de la Asociación Española para la Inteligencia Artificial (CAEPIA-TTIA 2009), Sevilla, 2009
44. 12th International Conference on Discovery Science (DS-2009), Porto, 2009
45. European Conference on Machine Learning – Conference on Principles and Practice of Knowledge Discovery in Databases (ECML-PKDD 2009), Bled, 2009
46. 21th International Joint Conference on Artificial Intelligence (IJCAI-09), Pasadena, 2009
47. 25th Conference on Uncertainty in Artificial Intelligence (UAI-2009), Montreal, 2009
48. 11th Ibero-American Conference on Artificial Intelligence (IBERAMIA 2008), Lisbon, 2008
49. Fourth European Workshop on Probabilistic Graphical Models (PGM’08), Hirtshals, 2008
50. IV International Symposium on Applications of Modelling as an Innovative Technology in the Agri-Food Chain (Model-IT 2008), Madrid, 2008
51. IFAC Conference on Cost Effective Automation in Networked Product Development and Manufacturing (IFAC-CEA-2007), Monterrey, 2007
52. 18th European Conference on Machine Learning (ECML) – 11th European Conference on Principles and Practice of Knowledge Discovery in Databases (PKDD), Varsovia, 2007
53. 23th Conference on Uncertainty in Artificial Intelligence (UAI-2007), Vancouver, 2007
54. IADIS International Conference Intelligent Systems and Agents (ISA-2007), Lisbon, 2007
55. Third European Workshop on Probabilistic Graphical Models (PGM’06), Prague, 2006
56. 16th European Conference on Machine Learning (ECML) – 9th European Conference on Principles and Practice of Knowledge Discovery in Databases (PKDD), Porto, 2005
57. Second European Workshop on Probabilistic Graphical Models (PGM’04), Leiden, 2004
58. 20th Conference on Uncertainty in Artificial Intelligence (UAI-2004), Banff, 2004
59. 14th European Conference on Machine Learning – 7th European Conference on Principles and Practice of Knowledge Discovery. Workshop on Probabilistic Graphical Models for Classification, Cavtat–Dubrovnik, 2003
60. 19th Conference on Uncertainty in Artificial Intelligence (UAI-2003), Acapulco, 2003
61. First European Workshop on Probabilistic Graphical Models (PGM’02), Cuenca, 2002
62. 17th Conference on Uncertainty in Artificial Intelligence (UAI-2001), Seattle, 2001
63. International Symposium on Adaptive Systems. Evolutionary Computation and Probabilistic Graphical Models (ISAS2001), La Habana, 2001
64. 16th Conference on Uncertainty in Artificial Intelligence (UAI-2000), Stanford, 2000

SESSION CHAIR OF CONFERENCES

1. Learning in *22nd European Conference on Artificial Intelligence (ECAI-2016)*, The Hague, 2016
2. Dynamic Models in *International Conference on Probabilistic Graphical Models (PGM’16)*, Lugano, 2016

3. Probabilistic Graphical Models in *XVI Conferencia de la Asociación Española para la Inteligencia Artificial (CAEPIA'15)*, Albacete, 2015
4. Classification and Clustering in *Sixth European Workshop on Probabilistic Graphical Models (PGM'12)*, Granada, 2012
5. Optimization and Data Mining in *EURO XXV*, Vilnius, 2012
6. Machine Learning in *XIV Conferencia de la Asociación Española para la Inteligencia Artificial (CAEPIA'11)*, Tenerife, 2011
7. Influence Diagrams in *Fifth European Workshop on Probabilistic Graphical Models (PGM'10)*, Helsinki, 2010
8. Optimization and Data Mining in *EURO XXIV*, Lisbon, 2010
9. Redes Bayesianas in *XIII Conferencia de la Asociación Española para la Inteligencia Artificial (CAEPIA-TTIA 2009)*, Sevilla, 2009
10. Statistical Data Analysis in *6th International Symposium on Intelligent Data Analysis (IDA'05)*, Madrid, 2005
11. Influence Diagrams and Decision Networks in *Second European Workshop on Probabilistic Graphical Models (PGM'04)*, Leiden, 2004
12. Influence Diagrams in *First European Workshop on Probabilistic Graphical Models (PGM'02)*, Cuenca, 2002
13. Computational Methods in Bayesian Statistics in *EURO XV-INFORMS XXXIV*, Barcelona, 1997
14. Graphical Models in Decision Analysis: Novel Representations and Algorithms, in *EURO XV-INFORMS XXXIV*, Barcelona, 1997

TUTORIALS

1. 14th Conference on Artificial Intelligence in Medicine, Murcia, 2013
2. XIV Conference of the Spanish Association for Artificial Intelligence, Tenerife, 2011
3. 12th International Conference on Discovery Science, Porto, 2009

MEMBER OF COMMITTEES EVALUATING PROJECTS AND RESEARCH CAREERS

- *Evaluating Committee of 2016 R+D Projects of Young Researchers*, Spanish Ministry of Economy and Competitiveness, Madrid (2016)
- *Assessment of competences for a Full Professor*, Utrecht University (2016)
- *Selection Committee of 2016 Program of PhD Scholarships*, Obra Social “la Caixa”, Barcelona (2016)
- *Evaluating Committee of 2014 Juan de la Cierva Postdoctoral Contracts*, Spanish Ministry of Economy and Competitiveness, Madrid (2015)
- *ICREA (Catalan Institution for Research and Advanced Studies)–Peer Evaluation for Promotion of Research Professors*, Barcelona (2015, 2016)
- *Project proposals for Czech Science Foundation*, Czech Republic (2015)
- *Evaluating Committee of Computer Technology Projects*, Spanish Ministry of Economy and Competitiveness, Madrid (2015, 2016)
- *Follow-up Commission for Computer Technology Projects*, Spanish Ministry of Economy and Competitiveness, Madrid (2014)
- *Junta de Andalucía*, Córdoba (2013)

- *Project proposals for Agence Nationale de la Recherche*, France (2012)
- *Evaluating Committee to Certify R+D Industrial Projects*, Agencia de Acreditación de Proyectos de Investigación, Desarrollo e Innovación Tecnológica (AIDIT), Madrid (2012)
- *Follow-up Commission for Computer Technology Projects*, Spanish Ministry of Science and Innovation, Madrid (2011)
- *Aalborg University*, Denmark (2010)
- *Evaluating Committee of Computer Technology Projects*, Spanish Ministry of Science and Innovation, Madrid (2009, 2009, 2011)
- *Agencia Nacional de Evaluación y Prospectiva*, Madrid (2000, 2004, 2005 (2), 2006, 2007, 2008 (2), 2012 (2), 2014, 2015 (5), 2016 (2))

SCIENCE DISSEMINATION

- *Los Ladridos Caracterizan a los Perros Igual que la Voz a las Personas*. Madri+d News, Platform SINC (FECYT), AlphaGalileo, ABC (2015)
- *La mente artificial aprende a inventar*. El Correo Innova+, pp. 1–3 (2014)
- *Desarrollan un kit que predice la supervivencia al cáncer de pulmón*. Madri+d News, Platform SINC (FECYT), AlphaGalileo, EuropaPress, 20minutos (2013)
- *Avances en el pronóstico de la cirugía de la epilepsia*. Madri+d News, Física Hoy (2013)
- *Alan Turing y la estadística Bayesiana*. Blog El País newspaper (2012)
- *Inteligencia Artificial. Proyecto Cajal Blue Brain*. Interview in Radio3 of RNE (2011)
- *Predicen el número de citas que tendrán los artículos científicos*. Madri+d News, Platform SINC (FECYT) (2010)

PATENTS

1. *Test Predictor de Supervivencia Global de Adenocarcinoma de Pulmón*. R. García, J.M. Paramio, P. Larrañaga, C. Bielza. P-2010-31626, Grant date: 4-26-2013

REGISTERED SOFTWARE

1. *Fidelización de Clientes a través de Internet*. Ríos-Insua, S., Bielza, C., Mateos, A., Martín, J. 103787, Registration date: 5-4-2001
2. Computer Program: *SimLin “Simulador del Comportamiento de una Línea de Clasificación de Fruta en Relación con la Aparición de Daños Mecánicos”*. Ruiz-Altisent, M., Barreiro, P., Bielza, C., García, F., García, F.J., Heradio, R., Pacios, O., Martín, J., Ríos-Insua, S., M-5928-02, Registration date: 6-30-2000
3. *Análisis de la Calidad en el Servicio*. Ríos-Insua, S., Bielza, C., Mateos, A., Martín, J., M-72228, Registration date: 3-26-1998

MANAGING

- Academic Secretary of the Artificial Intelligence Department (Technical University of Madrid), May2007-Dic2008
- Member of Curriculum Itinerary Commission of Computer Science Studies (Technical University of Madrid), June2009-today
- Member of the Academic Planning Commission of Computer Science Studies (Technical University of Madrid), 2006-2008