

Jose A. Lozano

1. Personal Information

NAME: Jose A. Lozano
BIRTHDATE: 10-25-1968
NATIONALITY: Spanish
ADDRESS : Department of Computer Science and Artificial Intelligence
P. Manuel de Lardizabal, 1
20018 Donostia-San Sebastian (Spain)
TELEPHONE: +34 943015034
E-MAIL: ja.lozano@ehu.es
URL: <http://www.sc.ehu.es/isg>

2. Current Activities

- Scientific Director of the Basque Center for Applied Mathematics BCAM
- Full Professor at the Department of Computer Science and Artificial Intelligence, University of the Basque Country, Spain
- Researcher at Basque Centre for Applied Mathematics (BCAM)
- Head of the Intelligent Systems Group (<http://www.sc.ehu.es/isg>)
- Associate editor of IEEE Trans. on Neural Network and Learning Systems
- Associate editor of IEEE Trans. on Evolutionary Computation
- Member of the editorial board of Evolutionary Computation Journal (MIT Press)
- Associate editor of IEEE Trans. on Systems, Man and Cybernetics: Systems
- Member of the editorial board of Memetic Algorithms (Springer)
- Member of the editorial board of Neural Computing and Applications (Springer)
- Member of the editorial board of Progress in Artificial Intelligence (Springer)

3. Education

- Ph.D., Computer Science, University of the Basque Country, Spain, 1998 (University of the Basque Country UPV/EHU, Award to the best thesis in Engineering)
- M.S., Computer Science, University of the Basque Country, Spain, 1992
- M.S., Mathematics, University of the Basque Country, Spain, 1991
- B.S., Mathematics, University of the Basque Country, Spain, 1989

4. Work Experience

- Associate Professor: Department of Computer Science and Artificial Intelligence, University of the Basque Country (Spain). November 1999-Marzo 2008.
- Assistant Professor: Department of Computer Science and Artificial Intelligence, University of the Basque Country (Spain). March 1993- October 1999.
- Computer technician: Bilbao City Council (Spain). March 1992- February 1993.

5. Citation Record

- h-index (google scholar): 43
- Citations (google scholar): 10565

6. Research Interests

- Artificial Intelligence
- Machine learning
- Heuristic optimization
- Probabilistic graphical models
- Applications in Medicine, Ecology, Industry.
- High-performance computing

7. Research Grants Awarded

1. Dealing with accidents and insurance data: a computational intelligence approach . *Spanish Ministry of Science, 2017-2019*. Budget: 225,000 Euros
2. Probabilistic Modeling in Machine Learning and Optimization: Model Learning, Permutations and Time Series. *Spanish Ministry of Science, 2014-2016*. Budget: 102,000 Euros
3. Grant for excellence research groups. *Basque Country Government, 2013-2018*. Budget: 303,218 Euros
4. Nature Inspired Computation and its Applications. *European Commission, 2011-2015*. Budget: 252,486 Euros
5. Probabilistic Graphical Models in Machine Learning and Optimization: Efficient Implementations and Applications. *Spanish Ministry of Science, 2011-2013*. Budget: 158,631 Euros
6. Multidimensional Classification. Applications in Computational Biology. *Spanish Ministry of Science, 2009-2010*. Budget: 145,200 Euros
7. Spanish network on computational biomedicine. *Instituto de Salud Carlos III, 2008-2014*. Budget: 86,948 Euros
8. Grant for excellence research groups. *Basque Country Government, 2007-2012*. Budget: 562,636 Euros
9. Computational Intelligence by Means of Bayesian networks, Gaussian networks and Kikuchi approximations. *Spanish Ministry of Education, 2006-2008*. Budget: 173,740 Euros.
10. Spanish network on Probabilistic Graphical Models and Applications. *Spanish Ministry of Education, 2005*. Budget: 9,000 Euros.
11. Methodological Advances on Estimation of Distribution Algorithms. *Basque Country Government, 2004-2005*. Budget: 49,000 Euros.
12. Genetic networks: Modeling the interaction between genes by means of Bayesian and Gaussian networks. *Local administration, 2003*. Budget: 25,000 Euros.
13. Advanced optimization techniques for the automatic generation of input cases for software validation. *Basque Country Government, 2001-2002*. Budget: 41,000 Euros.
14. Application of statistical and artificial intelligence techniques to the prediction of bankruptcy. *Local administration, 1997*. Budget: 12,000 Euros.
15. Cluster analysis applied to market segmentation. *Local administration, 1996*. Budget: 13,000 Euros.

8. Publication Record

Edited Books

1. J. A. Lozano, P. Larrañaga, I. Inza, and E. Bengoetxea (2006) *Towards a New Evolutionary Computation. Advances in Estimation of Distribution Algorithms*. Springer Verlag.
2. P. Larrañaga, and J. A. Lozano (2002) *Estimation of Distribution Algorithms. A New Tool for Evolutionary Computation*. Kluwer Academic Publishers.

Edited Proceedings

1. E. Corchado J.A. Lozano, Hector Quitan, Hujun Yin (2014)
Intelligent Data Engineering and Automated Learning – IDEAL 2014. Lectures Notes in Computer Science 8669, Springer-Verlag.
2. C. Blum, E. Alba, Jose A. Lozano, et al. (2013) *Genetic and Evolutionary Computation Conference, GECCO '13*. ACM 2013.
3. T. Soule, J.H. Moore, J.A. Lozano, et al. (2012) *Genetic and Evolutionary Computation Conference, GECCO '12*. ACM 2012.
4. J.A. Lozano, J.A. Gamez, J.A. Moreno (2011)
Advances in Artificial Intelligence. Lectures Notes in Computer Science 7023, Springer-Verlag.
5. N. Krasnogor, P. L. Lanzi, J.A. Lozano et al. (2011)
Genetic and Evolutionary Computation Conference, GECCO '11. ACM 2011.
6. X. Yao, E. Burke, J.A. Lozano J. Smith, J. J. Merelo-Guervós, J. A. Bullinaria, J. Rowe, P. Tino, A. Kabán, H.-P. Schwefel (2004)
Parallel Problem Solving From Nature VI. Lectures Notes in Computer Science 3242, Springer Verlag
7. 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 Boskovic Institute

Edited Journal Issues

1. J. A. Lozano, Q. Zhang, and P. Larrañaga (2009)
Special issue on Evolutionary Algorithms based on Probabilistic Models
IEEE Transactions on Evolutionary Computation. Vol. 13, No. 6
2. P. Larrañaga, J. A. Lozano, J. M. Peña, and I. Inza (2005)
Special issue on Probabilistic Graphical Models for Classification
Machine Learning, Vol. 59, No. 3
3. J.A. Lozano, and P. Larrañaga (2005)
Special issue on Estimation of Distribution Algorithms
Evolutionary Computation, Vol. 13, No. 1
4. P. Larrañaga, and J. A. Lozano (2002)
Special issue on Synergies Between Probabilistic Graphical Models and Evolutionary Computation
International Journal of Approximate Reasoning, Vol. 31

Refereed Journal Papers

1. U. Mori, A. Mendiburu, M.I. Miranda, J.A. Lozano (2019)
Early classification of time series using multi-objective optimization techniques. *Information Sciences*. Accepted.
2. E. Irurozki, B. Calvo, J.A. Lozano (2019)
Mallows and Generalized Mallows Model for Matchings
Bernoulli, 25(2), 1160-1188.
3. J. Hernández-González, I. Inza, I. Granado, O.C Basurko, J.A. Fernández, J.A. Lozano (2019)
Aggregated outputs by linear models: An application on marine litter beaching prediction. *Information Sciences*. Accepted.
4. I. Oregui, J. del Ser, A. Pérez, J.A. Lozano (2018)
On-line Elastic Similarity Measures for Time Series. *Pattern Recognition*. Accepted.
5. A. Abanda, U. Mori, J.A. Lozano (2018)
A review on distance based time series classification. *Data Mining and Knowledge Discovery*. Accepted.
6. D. Carrera, L. Bandeira, R. Santana, J.A. Lozano (2018)
Detection of Sand Dunes on Mars Using a Regular Vine-based Classification Approach. *Knowledge-Based Systems*. Accepted.
7. A. Shirazi, J. Ceberio, J.A. Lozano (2018)
Spacecraft Trajectory Optimization: A review of Models, Objectives, Approaches and Solutions
Progress in Aerospace Sciences. Accepted.
8. J. Hernández-González, I. Inza, J.A. Lozano (2018)
A note on the behavior of majority voting in multi-class domains with biased annotators
IEEE Transactions on Knowledge and Data Engineering. Accepted.
9. L. Hernando, A. Mendiburu and J.A. Lozano (2018)
Anatomy of the Attraction Basins: Breaking with the Intuition
Evolutionary Computation. Accepted.
10. J. Ceberio, B. Calvo, A. Mendiburu, J.A. Lozano (2018)
Multi-objectivising Combinatorial Optimisation Problems by means of Elementary Landscape Decompositions
Evolutionary Computation, Accepted.
11. U. Mori, A. Mendiburu, S. Dasgupta, J.A. Lozano (2018)
Early classification of time series by simultaneously optimizing the accuracy and earliness
IEEE Transactions on Neural Networks and Learning Systems, Accepted.
12. J.A. Pascual, J. Miguel-Alonso, J.A. Lozano (2018)
Effects of reducing VMs management times on elastic applications
Journal of Grid Computing, 16, 513-530.
13. E. Irurozki, B. Calvo, J.A. Lozano (2018)
Sampling and Learning Mallows and Generalized Mallows Models Under the Cayley Distance
Methodology and Computing in Applied Probability, 20(1), 1-35.
14. J. Hernández-González, L. Crisol-Ortíz, M. Guembe, M.J. Iñarra I. Inza, J.A. Lozano (2018)
Fitting the data from embryo implantation prediction: learning from label proportions
Statistical Methods in Medical Research, 27(4) 1056-1066.
15. P. Rozas Larraondo, I. Inza, J. A. Lozano (2018)
A system for airport weather forecasting based on circular regression trees
Environmental Modelling & Software, 100, 24-32.
16. J. Hernández-González, D. Rodríguez, I. Inza, Rachel Harrison, J.A. Lozano (2018)
Learning to classify software defects from crowds: a novel approach
Applied Soft Computing, 62, 579-591.

17. J. Hernández-González, D. Rodríguez, I. Inza, Rachel Harrison, J.A. Lozano (2018)
Two datasets of defect reports labeled by a crowd of annotators of unknown reliability
Data in Brief, 18, 840-845.
18. G. Kobeaga, M. Merino, J.A. Lozano (2018)
An efficient evolutionary algorithm for the orienteering problem
Computers and Operations Research. 90, 42-59.
19. P. Pinacho Davidson, C. Blum, J.A. Lozano (2018)
The Weighted Independent Domination Problem: Integer Linear Programming Models and Metaheuristic Approaches
European Journal of Operational Research. 265(3), 860-871.
20. J. Ortigosa-Hernández, I. Inza and J.A. Lozano (2017)
Measuring the Class-imbalance Extent of Multi-class Problems
Pattern Recognition Letters. 98, 32-38.
21. O. Rodrigues, A. Pozo, J.A. Lozano, R. Santana (2017)
An investigation of clustering strategies in many-objective optimization: The I-Multi algorithm as a case study
Swarm Intelligence. 11(2), 101-130.
22. O. Rodrigues, A. Pozo, R. Santana, J.A. Lozano (2017)
Transfer weight functions for injecting problem information in the Multi-Objective CMA-ES
Memetic Computing. 9(2), 153-180.
23. M. Capó, A. Pérez, J.A. Lozano (2017)
An efficient approximation to the K-means clustering for Massive Data
Knowledge-Based Systems. 117, 56-69.
24. J. Hernández-González, I. Inza, J.A. Lozano (2017)
Learning from proportions of positive and unlabeled examples
International Journal of Intelligent Systems. 32(2), 109-133.
25. U. Mori, A. Mendiburu, E. Keogh, J.A. Lozano (2017)
Reliable early classification of time series based on discriminating the classes over time
Data Mining and Knowledge Discovery. 31(1), 233-263.
26. D. Carrera, R. Santana, J.A. Lozano (2016)
Vine copula classifiers for the mind reading problem. *Progress in Artificial Intelligence*. 5(4), 289-305.
27. J. Ortigosa-Hernández, I. Inza and J.A. Lozano (2016)
Semi-supervised Multi-class Classification Problems with Scarcity of Labelled Data: A Theoretical Study. *IEEE Trans. on Neural Networks and Learning Systems*, 27(12), 2602-2614.
28. C. Blum, P. Pinacho, M. López-Ibáñez, Jose A. Lozano (2016)
Construct, Merge, Solve & Adapt: A New General Algorithm For Combinatorial Optimization
Computers and Operations Research, 68, 75-88.
29. U. Mori, A. Mendiburu, J.A. Lozano (2016)
Distance Measures for Time Series in R: The TSdist Package
The R Journal, 8(2), 451-459.
30. J. Hernández-González, I. Inza, J.A. Lozano (2016)
Weak supervision and other non-standard classification problems: a taxonomy
Pattern Recognition Letters, 69, 49-55.
31. J. Luo, L. Jiao, J.A. Lozano (2016)
A Sparse Spectral Clustering Framework via Multi-Objective Evolutionary Algorithm
IEEE Trans. On Evolutionary Computation, 20(3), 418-433.

32. U. Mori, A. Mendiburu, J.A. Lozano (2016)
Similarity Measure Selection for Clustering Time Series Databases
IEEE Transaction on Knowledge and Data Engineering, 28(1), 181-195.
33. L. Hernando, A. Mendiburu and J.A. Lozano (2016)
A Tunable Generator of Instances of Permutation-based Combinatorial Optimization Problems
IEEE Trans. On Evolutionary Computation, 20(2), 165-179.
34. E. Irurozki, B. Calvo, J.A. Lozano (2016)
PerMallows: An R Package for Mallows and Generalized Mallows Models
Journal of Statistical Software, 71(12).
35. J. Wang, K. Tang, J.A. Lozano, X. Yao (2016)
Estimation of Distribution Algorithm with Stochastic Local Search for Uncertain Capacitated Arc Routing Problems
IEEE Trans. On Evolutionary Computation. 20(1), 96-109
36. A. Perez, I. Inza, J.A. Lozano (2016)
Efficient Approximation of Probability Distributions with k-order Decomposable Models
International Journal of Approximate Reasoning, 74, 58-87.
37. R. Santana, A. Mendiburu, J.A. Lozano (2016)
A review of message passing algorithms in estimation of distribution algorithms
Natural Computing, 15(1) 165-180.
38. X. Liang, H. Chen, J.A. Lozano (2015)
A Boltzmann-based Estimation of Distribution Algorithm for Scheduling a General Resource Model
IEEE Trans. On Evolutionary Computation, 19(6), 793-806.
39. J.A. Pascual, T. Llorido-Botran, J. Miguel-Alonso, J.A Lozano (2015)
Towards a Greener Cloud Infrastructure Management using Optimized Placement Policies
Journal of Grid Computing, 13(3), 375-389.
40. P. Yang, K. Tang, J.A. Lozano, X. Cao (2015)
Path Planning for Single Unmanned Aerial Vehicle by Separately Evolving Waypoints
IEEE Transactions on Robotics, 31(5), 1130-1146.
41. G. Santafé, I. Inza, J.A. Lozano (2015)
Dealing with the evaluation of supervised classification algorithms
Artificial Intelligence Review, 44(4), 467- 508.
42. C. Echegoyen, R. Santana, A. Mendiburu, J.A. Lozano (2015)
Comprehensive Characterization of the Behaviors of Estimation of Distribution Algorithms
Theoretical Computer Science, 598, 64-86.
43. J. Ceberio. E. Irurozki, A. Mendiburu, J.A. Lozano (2015)
A Review of Distances for the Mallows and Generalized Mallows Estimation of Distribution Algorithms
Computational Optimization and Applications, 6(2), 545-564.
44. R. Santana, A. Mendiburu, J.A. Lozano (2015)
Multi-view classification of psychiatric conditions based on saccades
Applied Soft Computing, 31, 308- 316.
45. C. Blum, J.A. Lozano, P. Pinacho (2015)
An Artificial Bioindicator System for Network Intrusion Detection
Artificial Life, 21(2), 93-118.
46. Z. Wang, J.-H. Sul, S. Snir, J.A. Lozano and E. Eskin (2015)
Gene-Gene Interactions Detection Using A Two-stage Model
Journal of Computational Biology, 22(6), 563-576.

47. J.A. Fernandes, X. Irigoien, J.A. Lozano, I. Inza, N. Goikoetxea, A. Pérez (2015)
Evaluating machine-learning techniques for recruitment forecasting of seven North East Atlantic fish species
Ecological Informatics, 25, 35-42.
48. J.A. Pascual, J. Miguel-Alonso, J.A. Lozano (2015)
Locality-aware Policies to Improve Job Scheduling in Supercomputers
Journal of Supercomputing, 71(3), 966-994.
49. C. Blum, J.A. Lozano, P. Pinacho (2015)
Mathematical Programming Strategies for Solving the Minimum Common String Partition Problem
European Journal of Operational Research, 242(3), 769-777.
50. J. Ceberio, E. Irurozki, A. Mendiburu, J.A. Lozano (2015)
The Linear Ordering Problem Revisited
European Journal of Operational Research, 241(3), 686-696.
51. J. Hernández-González, I. Inza, J.A. Lozano (2015)
Multi-dimensional learning from crowds: usefulness and application of expertise detection.
International Journal of Intelligent Systems, 30(3), 326-354.
52. U. Mori, A. Mendiburu, J.A. Lozano (2015)
A Review of Travel Time Estimation and Prediction for Advanced Traveler Information Systems.
Transportmetrica A: Transport Science, 11(2), 119-157.
53. T. Lorido-Botran, J. Miguel-Alonso, J.A. Lozano (2014)
A Review of Auto-scaling Techniques for Elastic Applications in Cloud Environments
Journal of Grid Computing, 12(4), 559-592.
54. P. Rozas-Larraondo, I. Inza, J.A. Lozano (2014)
A Method for Wind Speed Forecasting in Airports Based on Non-Parametric Regression.
Weather and Forecasting, 29(6), 1332-1342.
55. J.A. Pascual, J. Miguel-Alonso and J.A. Lozano (2014)
A fast implementation of the first fit contiguous partitioning strategy for cubic topologies.
Concurrency and Computation: Practice and Experience, 26(17), 2792-2810.
56. J.A. Pascual, J. Miguel-Alonso and J.A. Lozano (2014)
Application-aware metrics for partition selection in cube-shaped topologies.
Parallel Computing, 40(5-6), 129-139.
57. J. Ceberio, E. Irurozki, A. Mendiburu and J.A. Lozano (2014)
A Distance-based Ranking Model Estimation of Distribution Algorithm for the Flowshop Scheduling Problem.
IEEE Transactions on Evolutionary Computation, 18(2), 286-300.
58. R. Sagarna, A. Mendiburu, I. Inza and J.A. Lozano (2014)
Assisting in search heuristics selection through multidimensional supervised classification: A case study on software testing.
Information Sciences, 258, 122-139.
59. L. Hernández, I. Inza and J.A. Lozano (2013)
Learning Bayesian network classifiers from label proportions.
Pattern Recognition, 46(12), 3425-3440.
60. L. Hernando, A. Mendiburu and J.A. Lozano (2013)
An evaluation of methods for estimating the number of local optima in combinatorial optimization problems.
Evolutionary Computation, 21(4), 625-58.
61. D. Berrar and J.A. Lozano (2013)
Significance tests or confidence intervals: which are preferable for the comparison of classifiers? *Journal of Experimental & Theoretical Artificial Intelligence*, 25(2), 189-206.

62. C. Echegoyen, A. Mendiburu, R. Santana and J.A. Lozano (2013)
On the Taxonomy of Optimization Problems under Estimation of Distribution Algorithms.
Evolutionary Computation, 21(3), 471-495.
63. J.A. Fernandes, J.A. Lozano, I. Inza, X. Irigoien, A. Perez, and J.D. Rodríguez (2013)
Supervised pre-processing approaches in multiple class variables classification for fish recruitment forecasting.
Environmental Modelling & Software, 40, 245-254.
64. J.D. Rodríguez, A. Pérez and J.A. Lozano (2013)
A General Framework for the Statistical Analysis of the Sources of Variance for Classification Error Estimators.
Pattern Recognition, 46(3), 855-864.
65. J.D. Rodríguez, A. Pérez, D. Arteta, D. Tejedor and J.A. Lozano (2012)
Using Multi-Dimensional Bayesian Network Classifiers to Assist the Treatment of Multiple Sclerosis.
IEEE Transactions on Systems, Man, and Cybernetics-Part C: Applications and Reviews, 42(6), 1705-1715.
66. B. Calvo, I. Inza, P. Larrañaga and J.A. Lozano (2012)
Wrapper positive Bayesian network classifiers.
Knowledge and Information Systems, 33(3), 631-654.
67. S. Shakya, R. Santana and J.A. Lozano (2012)
A Markovianity based Optimisation Algorithm.
Genetic Programming and Evolvable Machines, 13(2), 159-195.
68. J. Ortigosa-Hernández, J.D. Rodríguez, L. Alzate, M. Lucania, I. Inza and J.A. Lozano (2012)
Approaching Sentiment Analysis by Using Semi-supervised Learning of Multi-dimensional Classifiers.
Neurocomputing, 92, 98-115.
69. C. Echegoyen, A. Mendiburu, R. Santana and J.A. Lozano (2012)
Towards understanding EDAs based on Bayesian networks through a quantitative analysis.
IEEE Transactions on Evolutionary Computation, 16(2), 173-189.
70. I. Ibarbia, A. Mendiburu, M. Santos and J.A. Lozano (2012)
An interactive optimization approach to a real-world oceanographic campaign planning problem.
Applied Intelligence. 36(3), 721-734.
71. J. Ceberio, E. Irurozki, A. Mendiburu and J.A. Lozano (2012)
A review on estimation of distribution algorithms in permutation-based combinatorial optimization problems.
Progress in Artificial Intelligence. 1(1), 103-117.
72. E. Irurozki, B. Calvo and J. A. Lozano (2011)
A Preprocessing Procedure for Haplotype Inference by Pure Parsimony.
IEEE/ACM Transactions on Computational Biology and Bioinformatics. 8(5), 1183-1195.
73. E. Kostem, J.A. Lozano and E. Eskin (2011)
Increasing power of genome-wide association studies by collecting additional single-nucleotide polymorphisms.
Genetics. 188(2), 449-60.
74. J.A. Pascual, J. Miguel-Alonso and J.A. Lozano (2011)
Optimization-based mapping framework for parallel applications.
Journal of Parallel and Distributed Computing. 71(10), 1377-1387.
75. R. Santana, P. Larrañaga, and J. A. Lozano (2010)
Learning factorizations in estimation of distribution algorithms using affinity propagation.
Evolutionary Computation. 18(4), 515-546.

76. R. Santana, A. Mendiburu, N. Zaitlen, E. Eskin and J. A. Lozano (2010)
Multi-marker tagging SNP selection using estimation of distribution algorithms.
Artificial Intelligence in Medicine. 50, 193-201.
77. R. Santana, C. Bielza, P. Larrañaga, J. A. Lozano, C. Echegoyen, A. Mendiburu, R. Armañanzas, S. Shakya (2010)
MATEDA: A Matlab package for the implementation and analysis of Estimation of distribution algorithms.
Journal of Statistical Software. American Statistical Association. 35(7), 1-30.
78. J.A. Lozano, Q. Zhang and P. Larrañaga (2009)
Guest Editorial: Special Issue on Evolutionary Algorithms Based on Probabilistic Models.
IEEE Transaction on Evolutionary Computation. 13(6), 1197-1198.
79. J. A. Fernandes, X. Irigoien, N. Goikoetxea, J. A. Lozano, I. Inza, A. Pérez and A. Bode (2009).
Fish recruitment prediction, using robust supervised classification methods. *Ecological Modelling*. 221(2), 338-352.
80. J. D. Rodríguez, A. Pérez and J. A. Lozano (2009)
Sensitivity Analysis of k-fold cross-validation in prediction error estimation.
IEEE Transactions on Pattern Analysis and Machine Intelligence. 32(3), 569-574.
81. D. Otaegui, S. Baranzini, R. Armañanzas, B. Calvo, M. Muñoz-Culla, P. Khankhanian, I. Inza, J. A. Lozano, A. Asensio, T. Castillo-Triviño, J. Olascoaga, A. López de Munain (2009)
Differential microRNA expression in PBMC from multiple sclerosis patients.
PLoS ONE. 4(7), e6309.
82. B. Calvo, P. Larrañaga and J.A. Lozano (2009)
Feature subset selection from positive and unlabelled examples.
Pattern Recognition Letters, 30, 1027-1036.
83. J. A. Fernandes, X. Irigoyen, J. A. Lozano, I. Inza (2009)
Optimizing the number of classes in automated zooplankton classification.
Journal of Plankton Research. 31(1), 19-29.
84. R. Santana, P. Larrañaga and J.A. Lozano (2008)
Research topics in discrete estimation of distribution algorithms.
Memetic Computing, 1(1), 35-54.
85. S. J. 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.
86. 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.
87. 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.
BioData Mining. 1:6.
88. R. Sagarna and J.A. Lozano (2008)
Dynamic Search Space Transformations for Software Test Data Generation.
Computational Intelligence. 24(1), 23-61.
89. R. Santana, J. A. Lozano and P. Larrañaga (2008)
Protein folding in simplified models with estimation of distribution algorithms.
IEEE Transactions on Evolutionary Computation. 12(4), 418-438.

90. R. Santana, J. A. Lozano and P. Larrañaga (2008)
Combining Variable Neighborhood Search and Estimation of Distribution Algorithms in the Protein Side Chain Placement Problem.
Journal of Heuristics, 14, 519-547.
91. B. Calvo, P. Larrañaga and J.A. Lozano (2007)
Learning Bayesian classifiers from positive and unlabeled examples.
Pattern Recognition Letters, 28(16), 2375-2384.
92. B. Calvo, N. López-Bigas, S.J. Furney, P. Larrañaga, J. A. Lozano (2007). A partially supervised classification approach to dominant and recessive human disease gene prediction.
Computer Methods and Programs in Biomedicine, 85(3), 229-237.
93. R. Santana, P. Larrañaga, J. A. Lozano (2007)
Side chain placement using estimation of distribution algorithms.
Artificial Intelligence in Medicine, 39(1), 49-63.
94. G. Santafé J. A. Lozano, P. Larrañaga (2006)
Bayesian model averaging of naive Bayes for clustering.
IEEE Transactions on Systems, Man and Cybernetics, Part B, 36(5), 1149-1161.
95. A. Mendiburu, J. Miguel-Alonso, J. A. Lozano, M. Ostra, C. Ubide (2006)
Parallel EDAs to create multivariate calibration models for quantitative chemical applications.
Journal of Parallel and Distributed Computing, 66(8), 1002-1013.
96. P. Larrañaga, B. Calvo, R. Santana, C. Bielza, J. Galdiano, I. Inza, J. A. Lozano, R. Armañanzas, G. Santafé, A. Perez, V. Robles (2006)
Machine Learning in Bioinformatics.
Briefings in Bioinformatics, 7(1), 86-112.
97. A. Mendiburu, J. Miguel-Alonso, J. A. Lozano (2006)
Implementation and Performance evaluation of a parallelization of Estimation of Bayesian Network Algorithms.
Parallel Processing Letters, 16(1), 133-148.
98. R. Sagarna, J.A. Lozano (2006)
Scatter search in software testing, comparison and collaboration with estimation of distribution algorithms.
European Journal of Operational Research, 169(2), 392-412.
99. R. Sagarna, J.A. Lozano (2005)
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100. P. Larrañaga, J.A. Lozano, J.M. Peña, I. Inza (2005)
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101. A. Mendiburu, J.A. Lozano, J. Miguel-Alonso (2005)
Parallel Estimation of Distribution Algorithms: New Approaches.
IEEE Trans. On Evolutionary Computation, 9(4), 406-423.
102. P. Larrañaga, J.A. Lozano (2005)
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103. J.M. Peña, J.A. Lozano, P. Larrañaga (2005)
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104. J.M. Peña, J.A. Lozano, P. Larrañaga (2004)
Unsupervised 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 (1), 63-82.
105. P. Larrañaga, J.A. Lozano (2002)
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International Journal of Approximate Reasoning, 31(3), 155-156.
106. 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(3), 313-340.
107. J.M. Peña, J.A. Lozano, P. Larrañaga (2002)
Learning recursive Bayesian multinets for clustering by means of constructive induction.
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108. 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(1), 23-50.
109. 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.
110. 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.
111. C. González, J.A. Lozano, P. Larrañaga (2000)
Analyzing the PBIL algorithm by means of discrete dynamical systems.
Complex Systems, 12(4), 465-479.
112. J.M. Peña, J.A. Lozano, P. Larrañaga (1999)
Learning Bayesian networks for clustering by means of constructive induction.
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113. I. Inza, P. Larrañaga, B. Sierra, R. Etxeberria, J.A. Lozano, J.M. Peña (1999)
Representing the joint behaviour of Machine Learning inducers by Bayesian Networks.
Pattern Recognition Letters, 20(11-13), 1201-1209.
114. J. A. Lozano, P. Larrañaga, M. Graña, F. X. Albizuri (1999)
Genetic algorithms: bridging the convergence gap.
Theoretical Computer Science, 229, 11-22.
115. 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(10), 1027-1040.
116. J. A. Lozano, P. Larrañaga (1999)
Applying genetic algorithms to search for the best hierarchical clustering of a dataset.
Pattern Recognition Letters, 20(9), 911-918.
117. F.X. Albizuri, A. D'Anjou, M. Graña, J.A. Lozano (1996)
Convergence Properties of High-order Boltzmann Machines.
Neural Networks, 9(9), 1561-1567.

Book chapters

1. C. Echegoyen, A. Mendiburu, R. Santana, and J.A. Lozano. “Analyzing the k Most Probable Solutions in EDAs Based on Bayesian Networks.” *Linkage in Evolutionary Computation*. Springer Berlin / Heidelberg, Y.-P. Chen editor. Pp. 163–189, 2010.
2. C. Echegoyen, R. Santana, J.A. Lozano and P. Larrañaga. “The impact of probabilistic learning algorithms in EDAs based on Bayesian networks.” *Linkage in Evolutionary Algorithms. Studies in Computational Intelligence Series*. Springer. Y.-P. Chen and M.-H. Lim editors. Pp. 109–139. 2008
3. R. Santana, J. A. Lozano and P. Larrañaga. “Adaptive estimation of distribution algorithms.” *Adaptive Metaheuristics. Studies in Computational Intelligence Series*. Springer, 177-197, 2008.
4. R. Sagarna, and J. A. Lozano. “Software metrics mining to predict the performance of estimation of distribution algorithms in test data Generation.” *Knowledge-Driven Computing. Knowledge Engineering and Intelligent Computations*. Springer-Verlag. 235–254, 2008.
5. S. Dizdarevic, P. Larrañaga, B. Sierra, J. A. Lozano and J. M. Peña. “Combining Statistical and Machine Learning Based Classifiers in the Prediction of Corporate Failure.” *Artificial Intelligence in Accounting and Auditing. Markus Wiener Publishers, 177–209, 2005*.
6. J. A. Lozano, P. Larrañaga, and M. Graña. “Partitional cluster analysis with genetic algorithms: searching for the number of clusters.” *Studies in Classification, Data Analysis and Knowledge Organization: Data Science Classification and Related Methods*. Springer-Verlag, 117–124, 1998.
7. P. Larrañaga, C. M. H. Kuijpers, R. H. Murga, Y. Yurramendi, M. Graña, J. A. Lozano, X. Albizuri, A. dAnjou, F. J. Torrealdea. “Genetic algorithms applied to Bayesian networks.” *Computational Learning and Probabilistic Reasoning*. John Wiley & Sons Ltd., 211-234, 1996.

Selected Refereed Conference Papers

1. I. Oregi, A. Pérez, J. Del Ser, J.A. Lozano. “On-Line Dynamic Time Warping for Streaming Time Series” *Machine Learning and Knowledge Discovery in Databases. ECML PKDD 2017*. Lecture Notes in Computer Science, vol 10535. Springer, 2017.
2. Z. Wang, J.-H. Sul, S. Snir, J.A. Lozano and E. Eskin. “Gene-Gene Interactions Detection Using A Two-stage Model” *18th Annual International Conference on Research in Computational Molecular Biology (RECOMB)*, Pittsburgh, USA, 2014.
3. R. Santana, A. Mendiburu and J.A. Lozano. “Extending the use of message passing algorithms to problems with unknown structure” *Workshop on Bayesian Optimization (NIPS-2013)*, Lake Tahoe, USA, 2013.
4. R. Santana, A. Mendiburu and J.A. Lozano “Analyzing Probabilistic Models Generated by EDAs for Simplified Protein Folding Problems” *Workshop on Constructive Machine Learning (NIPS-2013)*, Lake Tahoe, USA, 2013.
5. L. Hernando, A. Mendiburu and J.A. Lozano. “Generating Customized Landscapes in Permutation-based Combinatorial Optimization Problems” *Learning and Intelligent Optimization Conference (LION-7)*, Catania, Italy. 2013. **Best Short Paper Award**
6. R. Santana, A. Mendiburu and J.A. Lozano. “Structural transfer using EDAs: An application to multi-marker tagging SNP selection”. *World Conference on Computational Intelligence (WCCI-12)* Brisbane, Australia. 3484-3491, 2012. **Best Paper Award**
7. R. Santana, A. Mendiburu and J.A. Lozano. “Evolving NK-complexity for evolutionary solvers”. *Genetic and Evolutionary Computation Conference (GECCO-2012)*. Philadelphia, US, 2012

8. R. Santana, A. Mendiburu and J.A. Lozano. "An analysis of the use of probabilistic modeling for synaptic connectivity prediction from genomic data". *World Conference on Computational Intelligence (WCCI-12)* Brisbane, Australia. 3484-3491, 2012.
9. C. Echegoyen, A. Mendiburu, R. Santana and J.A. Lozano. "Clases de Equivalencia en Algoritmos de Estimación de Distribuciones". *VIII Congreso Español sobre Metaheurísticas, Algoritmos Evolutivos y Bioinspirados (MAEB-2012)* Albacete, Spain, 2012. **Best Student Paper Award**
10. C. Echegoyen, Q. Zhang, A. Mendiburu, R. Santana and J.A. Lozano. "On the limits of effectiveness in estimation of distribution algorithms" *Congress on Evolutionary Computation (CEC-2011)*, New Orleans, USA. 1573 -1580, 2011. *Best Student Paper Award*
11. E. Irurozki, B. Calvo and J.A. Lozano. "Learning Probability Distributions over Permutations by Means of Fourier Coefficients" *Canadian Conference on Artificial Intelligence*, St. John's, Canada. 186-191, 2011.
12. J. Ceberio, A. Mendiburu and J.A. Lozano. "A preliminary study on EDAs for permutation problems based on marginal-based models", *Genetic and Evolutionary Computation Conference (GECCO-2011)*, Dublin, Ireland. 609-616, 2011.
13. J. Ceberio, A. Mendiburu and J.A. Lozano. "Introducing the Mallows Model on Estimation of Distribution Algorithms", *In Neural Information Processing Conference (ICONIP 2011)*, Shanghai, China. 461-470, 2011.
14. L. Hernando, J.A. Pascual, A. Mendiburu and J.A. Lozano. "A study on the complexity of TSP instances under the 2-exchange neighbor system", *IEEE Symposium on Foundations of Computational Intelligence (FOCI-2011)*, Paris, France. 15-21, 2011.
15. C. Echegoyen, A. Mendiburu, R. Santana and J.A. Lozano. "Estimation of Bayesian networks algorithms in a class of complex networks", *Congress on Evolutionary Computation (CEC-2010)*, Barcelona, Spain, 2010.
16. C. Echegoyen, A. Mendiburu, R. Santana, and J. A. Lozano. "Analyzing the probability of the optimum in EDAs based on Bayesian networks", *Congress on Evolutionary Computation (CEC-2009)*, Trondheim, Norway. 1652-1659, 2009. **Best Student Paper Award**
17. E. Irurozki and J.A. Lozano. "A new Preprocessing Procedure for the Haplotype Inference Problem", *Congress on Evolutionary Computation (CEC-2009)*, Trondheim, Norway. 1320-1327, 2009.
18. R. Santana, C. Bielza, J.A. Lozano and P. Larrañaga. "Mining probabilistic models learned by EDAs in the optimization of multi-objective problems", *Genetic and Evolutionary Computation Conference (GECCO-2009)*, New York, USA. 445-452, 2009.
19. R. Santana, P. Larrañaga and J.A. Lozano. "Component weighting functions for adaptive search with EDAs", *Congress on Evolutionary Computation (CEC-2008)*, Hong Kong, China. 4067-4074, 2008.
20. R. Santana, P. Larrañaga and J.A. Lozano. "Adding probabilistic dependencies to the search of protein side chain configurations using EDAs", *Parallel Problem Solving from Nature (PPSN X)*, Dortmund, Germany. 1120-112, 2008.
21. R. Santana, A. Mendiburu and Jose A. Lozano. "An empirical analysis of loopy belief propagation in three topologies: grids, small-world networks and random graphs" *Proceedings of the Fourth European Workshop on Probabilistic Graphical Models (PGM-2008)*. Hirtshals, Denmark, 2008.
22. J.D. Rodríguez and J.A. Lozano. "Multi-objective learning of multi-dimensional Bayesian classifiers", *International Conference on Hybrid Intelligent Systems (HIS-2008)*, Barcelona, Spain. 501-506, 2008.
23. C. Echegoyen, J. A. Lozano, R. Santana and P. Larrañaga. "Exact Bayesian network learning in estimation of distribution algorithms". *Congress on Evolutionary Computation (CEC-2007)* Singapore, 2007.

24. G. Santafé and J. A. Lozano and P. Larrañaga. “Discriminative vs. Generative Learning of Bayesian Network Classifiers”. *Ninth European Conference on Symbolic and Quantitative Approaches to Reasoning with Uncertainty (ECSQARU'2007)*, Hammamet, Tunisia. 453-464, 2007.
25. R. Santana, P. Larrañaga, and Jose A. Lozano. “The role of a priori information in the minimization of contact potentials by means of estimation of distribution algorithms.” *5TH European Conference on Evolutionary Computation, Machine Learning and Data Mining in Bioinformatics*. Valencia, Spain, 2007.
26. G. Santafé, J. A. Lozano, P. Larrañaga, and E. Eskin. “Population substructure determination by means of Bayesian model averaging for clustering.” *Intelligent Data Analysis In Biomedicine And Pharmacology (IDAMAP 2006)*. Verona, Italy, 2006.
27. R. Santana, P. Larrañaga, and J. A. Lozano. “Self-adapting Estimation of Distribution Algorithms.” *7th EU/MEeting on Adaptive, Self-Adaptive and Multilevel Metaheuristics*. Málaga, Spain, 2006.
28. R. Santana, P. Larrañaga, and J. A. Lozano. “The role of probabilistic dependencies in protein structure prediction and protein design.” *Workshop on Current challenges in computational structural biology: improving model refinement for functional predictions (MODREF 2006)*. Barcelona, Spain, 2006.
29. A. Mendiburu, J. Miguel-Alonso, and J.A. Lozano. “Evaluation of Parallel EDAs to Create Chemical Calibration Model.” *Second IEEE International Conference on e-Science and Grid Computing (e-Science'06)*., Amsterdam, The Netherlands, 2006.
30. R. Santana, P. Larrañaga, and J. A. Lozano. “Mixtures of Kikuchi approximations.” *Proceedings of the 17th European Conference on Machine Learning (ECML-2006)*. Berlin, Germany, 2006.
31. G. Santafé, J. A. Lozano, and P. Larrañaga. “Bayesian Model Averaging of TAN Models for Clustering.” *European Workshop on Probabilistic Graphical Models (PGM 2006)*. Prague, Czech Republic, 2006.
32. R. Santana, J.A. Lozano, and P. Larrañaga. “Combining Variable Neighborhood Search and Estimation of Distribution Algorithms in the protein side chain placement problem.” *XVIII Mini EURO Conference on VNS*. Tenerife, Spain, 2005.
33. R. Santana, J.A. Lozano, and P. Larrañaga. “Interactions and dependencies in Estimation of Distribution Algorithms.” *Congress on Evolutionary Computation (CEC)*. Edimburgo, U.K., 2005.
34. C. González, A. Ramírez, J. A. Lozano, and P. Larrañaga. “Average Time Complexity of Estimation of Distribution Algorithms.” *The 8th International World-Conference on Artificial Neural Networks*. Villanova i la Geltrú, Spain, 2005.
35. G. Santafé, J. A. Lozano, and P. Larrañaga. “Discriminative Learning of Bayesian Network Classifiers via the TM Algorithm.” *Eighth European Conference on Symbolic and Quantitative Approaches to Reasoning with Uncertainty (ECSQARU'2005)*. Barcelona, Spain, 2005.
36. A. Mendiburu, J. Miguel-Alonso, J.A. Lozano, M. Ostra, and C. Ubide. “Parallel and Multi-objective EDAs to create multivariate calibration models for quantitative chemical applications.” *1st Workshop on Parallel Bioinspired Algorithms. The 2005 International Conference on Parallel Processing (ICPP-05)*. Oslo, Norway, 2005.
37. R. Armañanzas, and J.A. Lozano. “A Multiobjective Approach to the Portfolio Optimization Problem.” *Congress on Evolutionary Computation (CEC-2005)*. Edimburgo, U.K., 2005.
38. G. Karciuskas, T. Kocka, F. Jensen, P. Larrañaga, and J. A. Lozano. “Learning of latent class models by splitting and merging components.” *Probabilistic Graphical Models*. Leiden, The Netherlands, 2004.
39. R. Santana, P. Larrañaga, and J. A. Lozano. “Protein Folding in 2-Dimensional Lattices with Estimation of Distribution Algorithms.” *Proceedings of the First International Symposium on Biological and Medical Data Analysis*. Barcelona, Spain, 2004.

40. R. Sagarna, and J.A. Lozano. "Variable Search Space for Software Testing." *International Conference on Neural Networks and Signal Processing (ICNNSP)*. Nanjing, China, 2003.
41. C. González, J. D. Rodríguez, J. A. Lozano, and P. Larrañaga. "Analysis of the univariate marginal distribution algorithm modeled by Markov chains." *7th International World-Conference on Artificial and Natural Neural Networks*. Maó, Spain, 2003.
42. J. M. Peña, J. A. Lozano, and P. Larrañaga. "Unsupervised learning of Bayesian networks via estimation of distribution algorithms." *First European Workshop in Probabilistic Graphical Models*. Cuenca, Spain, 2002.
43. J. M. Peña, I. Izarzugaza, J. A. Lozano, E. Aldasoro, and P. Larrañaga. "Geographical clustering of cancer incidence by means of Bayesian networks and conditional Gaussian networks." *Artificial Intelligence and Statistics*. Florida, USA, 2001.
44. J. A. Lozano, R. Sagarna, and P. Larrañaga. "Parallel estimation of Bayesian networks algorithms" *Third International Symposium on Adaptive Systems*. La Habana, Cuba, 2001.
45. C. González, J. A. Lozano, and P. Larrañaga. "The convergence behavior of the PBIL algorithm: A preliminary approach." *International Conference in Artificial Neural Nets and Genetic Algorithms*. Prague, Czech Republic, 2001.
46. P. Larrañaga, E. Bengoetxea, J. A. Lozano, V. Robles, A. Mendiburu, and P. de Miguel. "Searching for the best permutation with estimation of distribution algorithms." *Seventeenth International Joint Conference on Artificial Intelligence. Workshop on Stochastic Search Algorithms*. Seattle, USA, 2001.
47. P. Larrañaga, R. Etxeberria, J. A. Lozano, and J. M. Peña. "Optimization in continuous domains by learning and simulation of Gaussian networks." *Genetic and Evolutionary Computation Conference*. Las Vegas, USA, 2000.
48. P. Larrañaga, R. Etxeberria, J. A. Lozano, and J. M. Peña. "Combinatorial optimization by learning and simulation of Bayesian networks." *Sixteenth Conference on Uncertainty in Artificial Intelligence*. Stanford, USA, 2000.
49. P. Larrañaga, R. Etxeberria, J. A. Lozano, B. Sierra, I. Inza, and J. M. Peña. "A review of the cooperation between evolutionary computation and probabilistic graphical models". *Second Symposium on Artificial Intelligence*. La Habana, Cuba, 1999.
50. A. I. Gonzalez, M. Graña, J. A. Lozano, and P. Larrañaga. "Experimental results of a Michigan - like evolution strategy for non-stationary clustering." *International Conference on Artificial Neural Nets and Genetic Algorithms*. Norwich, U.K., 1997.
51. J. A. Lozano, P. Larrañaga, and M. Graña. "Partitional cluster analysis with genetic algorithms: searching for the number of clusters." *Fifth Conference of the International Federation of Classification Societies*. Kobe, Japan, 1996.

9. Teaching Record

Graduate courses (1993-Present):

- Algebra
- Probability and Statistics
- Operational Research
- Advanced Methods in Optimization
- Machine Learning

Prost-graduate courses:

- Evolutionary Algorithms: From Theory to Practice
- Metaheuristics and Bioinspired Algorithms
- Probabilistic Graphical Models
- Intelligent Systems in Molecular Biology
- Computational Intelligence

10. Reviewing and Conference Organization

Conference Organizing

General Chair: *IEEE Congress on Evolutionary Computation (CEC), 2017*
 Program Technical Co-Chair: *IEEE Congress on Evolutionary Computation (CEC), 2013*
 Program Chair: *The 14th Conference of the Spanish Association for Artificial Intelligence (CAEPIA), 2011*
 Program Track Co-Chair: *Genetic and Evolutionary Computation Conference (GECCO), 2011-2013*
 Program Co-chair: *The 8th International Conference on Parallel Problem Solving from Nature (PPSN VIII), 2004.*
 Program Co-chair: *Workshop on Probabilistic Graphical Models for Classification. The 14th European Conference on Machine Learning (ECML) 2003*
 Conference Steering Committee: *IEEE Symposium on Foundations of Computational Intelligence (FOCI'07)*

Scientific National Agencies Referee

European Commission, FPVII-FET-2012, FPVII-FET-2014, H2020-FET-OPEN, H2020-RISE
 Spanish Research Council, 2006-2016.
 Netherlands Organisation for Scientific Research, 2005, 2006, 2010, 2011, 2013
 Austrian Science Fund (FWF), 2007, 2009, 2012, 2013

11. Supervised PhD students

1. Marco Capó (2019) k-means for massive data. International PhD. (Co-supervised with Prof. Pérez)
2. Pablo Rozas (2018) *Application of machine learning techniques to weather forecasting* International PhD. (Co-supervised with Prof. Inza)
3. Jonathan Ortigosa (2018) *Theoretical and Methodological Advances in Semi-supervised Learning and the Class-Imbalance Problem*. University of the Basque Country. International PhD. (Co-supervised with Prof. Inza)
4. Pedro Pinacho Davidson (2017) *Development of hybrid metaheuristics based on instance reduction for combinatorial optimization problems*. University of the Basque Country. International PhD. (Co-supervised with Prof. Blum)
5. Usue Mori Carrascal (2015) *Contributions to Time Series Data Mining Departing from the Problem of Road Travel Time Modeling*. University of the Basque Country. International PhD and Excellence University Award. (Co-supervised with Prof. Mendiburu)

6. J. Hernández-González (2015) *Contributions to Learning Bayesian Networks Models from Weakly Supervised Data*. University of the Basque Country. International PhD and Excellence University Award. (Co-supervised with Prof. Inza)
7. L. Hernando (2015) *Instances of Combinatorial Optimization Problems: Complexity and Generation*. University of the Basque Country. International PhD. (Co-supervised with Prof. Mendiburu)
8. J. Ceberio (2014) *Solving Permutation Problems with Estimation of Distribution Algorithms and Extensions Thereof*. University of the Basque Country. International PhD. (Co-supervised with Prof. Mendiburu)
9. E. Irurozki (2014) *Sampling and learning distance-based probability models for permutation spaces*. University of the Basque Country. International PhD and Excellence University Award (Co-supervised with Prof. Calvo)
10. JA. Pascual (2013) *Mechanisms and Techniques for Scheduling in Supercomputers*. University of the Basque Country. International PhD. (Co-supervised with Prof. Miguel-Alonso)
11. J.D. Rodríguez (2013) *Advances in Error Estimation and Multi-Dimensional Supervised Classification*. University of the Basque Country. International PhD. (Co-supervised with Prof. Pérez)
12. C. Echegoyen (2012) *Contributions to the Analysis and Understanding of Estimation of Distribution Algorithms*. University of the Basque Country. International PhD. (Co-supervised with Prof. Mendiburu)
13. J.A. Fernández (2011) *Data analysis advances in marine science for fisheries management: supervised classification applications*. University of the Basque Country. European PhD and Excellence University Award (Co-supervised with Prof. Inza and Dr. Irigoien)
14. B. Calvo (2008) *Positive Unlabelled Learning with Applications in Computational Biology*. University of the Basque Country. European PhD. (Co-supervised with Prof. Larrañaga)
15. G. Santafé (2008). *Advances on Supervised and Unsupervised Learning of Bayesian Network Models. Application to Population Genetics*. University of the Basque Country. European PhD. (Co-supervised with Prof. Larrañaga)
16. R. Sagarna (2007). *An Optimization Approach for Software Test Data Generation: Applications of Estimation of Distribution Algorithms and Scatter Search*. University of the Basque Country. European PhD and Excellence University Award.
17. R. Santana (2006). *Advances in Probabilistic Graphical Models for Optimization and Learning Applications in Protein Modelling*. University of the Basque Country. European PhD and Excellence University Award. (Co-supervised with Prof. Larrañaga)
18. A. Mendiburu (2006). *Parallel implementation of Estimation of Distribution Algorithms based on probabilistic graphical models. Application to chemical calibration models*. University of the Basque Country. European PhD. (Co-supervised with Prof. Miguel)
19. C. González (2006). *Contributions on Theoretical Aspects of Estimation of Distribution Algorithms*. University of the Basque Country. (Co-supervised with Prof. Larrañaga)
20. J.M. Peña (2001). *On Unsupervised Learning of Bayesian Networks and Conditional Gaussian Networks*. University of the Basque Country. (Co-supervised with Prof. Larrañaga)

12. Research Stays

1. Department of Mathematics and Information Science, *Coventry University*, Coventry (U.K.). February-July, 1994. Hosting professor: Colin Reeves.
2. Department of Statistics, *University of Washington*, Seattle (USA), July-August, 2001. Hosting professor: Marina Meila.

3. Department of Radiology. Decision Systems Group, *Harvard University*, Cambridge (USA), July-August, 2004. Hosting professor: Lucila Ohno-Machado.
4. Department of Computer Science and Engineering, *University of California, San Diego*, San Diego (USA), July-August, 2005. Hosting professor: Eleazar Eskin.
5. Department of Computer Science and Engineering, *University of California, San Diego*, San Diego (USA), May-August, 2006. Hosting professor: Eleazar Eskin.
6. Department of Computer Science, *University of California, Los Angeles*, Los Angeles (USA), July-August, 2008. Hosting professor: Eleazar Eskin.
7. Department of Computer Science, *University of California, Los Angeles*, Los Angeles (USA), July-August, 2009. Hosting professor: Eleazar Eskin.
8. Department of Computer Science, *University of California, Los Angeles*, Los Angeles (USA), July-August, 2010. Hosting professor: Eleazar Eskin.
9. Department of Computer Science, *University of California, Los Angeles*, Los Angeles (USA), July-August, 2011. Hosting professor: Eleazar Eskin.
10. Department of Computer Science, *University of California, Los Angeles*, Los Angeles (USA), August, 2012. Hosting professor: Eleazar Eskin.
11. Department of Computer Science, *University of California, Los Angeles*, Los Angeles (USA), August, 2013. Hosting professor: Eleazar Eskin.
12. Department of Computer Science, *University of California, Los Angeles*, Los Angeles (USA), August, 2014. Hosting professor: Eleazar Eskin.
13. Department of Computer Science, *University of California, Los Angeles*, Los Angeles (USA), August, 2015. Hosting professor: Eleazar Eskin.
14. Department of Computer Science, *University of California, Los Angeles*, Los Angeles (USA), August, 2016. Hosting professor: Eleazar Eskin.

13. Tutorials and Invited Talks

Tutorials

1. Estimation of distribution: Basic and advanced topics. *The 2017 IEEE Symposium Series on Computational Intelligence (IEEE SSCI 2017)*. Hawaii, USA, 2017.
2. Probabilistic Modeling of Ranking. *Asian Conference on Machine Learning (ACML)*. Singapore, 2012.
3. Probabilistic Modeling of Ranking. European Conference on Machine Learning (ECML-PKDD). Bristol (UK), 2012.
4. Honest Evaluation of Classification Models. *Asian Conference on Machine Learning (ACML)*. Tokyo (Japan), 2010.
5. Classifier performance evaluation and comparison. *International Conference on Machine Learning Applications (ICMLA)*. Washington (USA), 2010.
6. A Gentle Introduction to Estimation of Distribution Algorithms. *Congress on Evolutionary Computation*. Edinburgh (U.K.), 2005.
7. Introduction to Estimation of Distribution Algorithms. *Congress on Evolutionary Computation*. Canberra (Australia), 2003.

8. Optimization by Learning and Simulation of Probabilistic Graphical Models. *Parallel Problem Solving from Nature VII*. Granada (Spain), 2002.
9. Optimization by Learning and Simulation of Probabilistic Graphical Models. *Parallel Problem Solving from Nature VI*. Paris (France), 2000.

Invited Talks

1. Recent Advances on Time Series Data Mining. *12th International Symposium on Intelligent Distributed Computing (IDC 2018)*. Bilbao (Spain), 2018.
2. Non-standard Supervised Classification Problems. *The 33rd ACM/SIGAPP Symposium On Applied Computing (SAC 18)*. Pau (France), 2018.
3. Non-standar machine learning problems in small and big data. *The 8th International ACM Conference on Management of Digital EcoSystems (MEDES'16)*. Hendaye (France), 2016.
4. The Mathematics of Big Data. *The XXIV Congress on Differential Equations and Applications / XIV Congress on Applied Mathematics (XXIV CEDYA / XIV CMA)*. Cádiz (Spain), 2015.
5. Weakly Supervised Classification Problems. *Spanish Conference on Artificial Intelligence*. Albacete (Spain), 2015.
6. Estimation of Distribution Algorithms for Permutation-based Optimization Problems. *The 2010 International Workshop on Nature Inspired Computation and Applications*. Hefei (China), 2012.
7. A review on methods to estimate the number of local optima in combinatorial optimization problems. *NICaiA: Nature Inspired Computation and its Applications Workshop*. Xi'an (China), 2012.
8. Solving three bioinformatics problems with EDAs. *The 2010 International Workshop on Nature Inspired Computation and Applications*. Hefei (China), 2010.
9. A Gentle Introduction to Estimation of Distribution Algorithms. *The 2010 International Workshop on Nature Inspired Computation and Applications*. Hefei (China), 2010.
10. Probabilistic Graphical Models in Optimization - Applications in Bioinformatics. *The Scottish Informatics & Computer Science Alliance Annual Meeting*. Aberdeen (UK), 2010.
11. An introduction to Estimation of Distribution Algorithms. *First Spanish Conference in Computer Science*. Granada (Spain), 2005. (In Spanish).

14. Honors and Awards

1. Best student paper award. Spanish Conference on Artificial Intelligence, Albacete (Spain), 2015.
2. Best paper award. Spanish Conference on Metaheuristic and Biological Inspired Algorithms, Merida (Spain), 2015.
3. Best short paper award. Learning and Intelligent Optimization Conference, Catania (Italy), 2013.
4. Best paper overall. World Conference on Computational Intelligence, Brisbane (Australia), 2012.
5. Best student paper award. Spanish Conference on Metaheuristic and Biological Inspired Algorithms, Albacete (Spain), 2012.
6. Best student paper award. IEEE Congress on Evolutionary Computation, New Orleans (USA), 2011.
7. Best student paper award. IEEE Congress on Evolutionary Computation, Trondheim (Norway), 2009.
8. Best thesis award. University of the Basque Country, 2000.