

Jaume Bacardit

Curriculum Vitae
December 16, 2004

1 Personal information

Full name: Jaume Bacardit i Peñarroya
Nationality: European Union Member (Catalonia, Spain)
Year of birth: 1976
Email: jbacardit@salleURL.edu
Home page: <http://www.salleURL.edu/~jbacardit>
Phone: +34 696827229
Fax: +34 932902416
UNESCO code: 1203 04
Current affiliation: Intelligent Systems Research Group
Enginyeria i Arquitectura La Salle
Ramon Llull University
Passeig Bonanova 8
08022 Barcelona, Catalonia, Spain

2 Research interests

- Genetic and Evolutionary Computation
- Genetic-Based Machine Learning
- Data Mining

3 Education

2001-2004 PhD Degree in Computer Science. Enginyeria i Arquitectura La Salle. Ramon Llull University, Barcelona, European Union (Catalonia, Spain). Thesis title: “Pittsburgh Genetics-Based Machine Learning in the Data Mining Era: Representations, generalization, and run-time”.

2003 (July) Advances Studies Degree. Enginyeria i Arquitectura La Salle. Ramon Llull University, Barcelona, European Union (Catalonia, Spain).

1998-2000 Computer Engineering Degree. Enginyeria i Arquitectura La Salle. Ramon Llull University, Barcelona, European Union (Catalonia, Spain). Thesis title: “Development of a digital assistant for the academical failure prediction using evolutionary computation”.

1994-1998 Technical Degree in Computer Engineering. Enginyeria i Arquitectura La Salle. Ramon Llull University, Barcelona, European Union (Catalonia, Spain). Thesis title: “Development of an Evolutionary Computation Educational Environment with Visual C++”.

4 Awards and visits

4.1 Awards

2001-2004 FI Fellowship (FI 2001 00514). Sponsor: Departament d'Universitats, Recerca i Societat de la Informació, Generalitat de Catalunya (Catalan Government). Doctoral fellowship.

1999 Beca Colaboración del Ministerio de Educación y Cultura. Fellowship granted by the Spanish government to students in their degree final year to collaborate in a university department.

1998-1999 Beca Universitaria de Caixa de Manresa. Sponsor: Manresa Savings Bank, Catalonia, Spain. Fellowship granted to the best university students if the Manresa region, Spain.

4.2 Research visits

February-May 2004 Visit to the Illinois Genetic Algorithms Laboratory, University of Illinois at Urbana-Champaign, Urbana, IL.

5 Refereed publications

5.1 Journal Articles

Abbass, H.A., Bacardit, J., Butz, M.V., Llorà, X. (submitted) Online adaptation in Learning Classifier Systems: Stream Data Mining, IEEE Transactions on System, Man and Cybernetics, Part B.

Teixidó, M., Belda, I., Roselló, X., Gonzàlez, S., Fabre, M., Llorà, X., Bacardit, J., Garrell, J. M., Vilaró, S., Albericio, F., and Giralt, E. (2003), Development of a Genetic Algorithm to Design and Identify Peptides that can Cross the Blood-Brain Barrier: Design and validation in silico, Journal of QSAR and Combinatorial Science. No. 7, pp. 745 753, Wiley-VCH.

5.2 Book chapters

Bacardit, J. and Butz, M.V. (Accepted, final version), Data Mining in Learning Classifier Systems: Comparing XCS with GAssist, in Advances in Learning Classifier Systems (7th International Workshop, IWLCS 2004), Seattle, USA, LNAI, Springer.

Bacardit, J., Goldberg D.E. and Butz, M.V. (Accepted, final version), Improving the Performance of a Pittsburgh Learning Classifier System Using a Default Rule, in Advances in Learning Classifier Systems (7th International Workshop, IWLCS 2004), Seattle, USA, LNAI, Springer.

Llorà, X., Goldberg, D.E., Bacardit, J., Traus, I., and Bernadó, E. (Accepted, final version), Where to Go Once You Evolved a Bunch of Promising Hypotheses?, in Advances in Learning Classifier Systems (6th International Workshop, IWLCS 2003), Chicago, USA, LNAI, Springer.

Bacardit, J. and Garrell, J.M., (Accepted, final version), Bloat control and generalization pressure using the minimum description length principle for a Pittsburgh approach Learning Classifier System in Advances in Learning Classifier Systems (6th International Workshop, IWLCS 2003), Chicago, USA, LNAI, Springer.

5.3 International conferences papers

- Bacardit, J., Goldberg D.E., Butz, M.V., Llorà, X. and Butz, M.V., Speeding-up Pittsburgh Learning Classifier Systems: Modeling Time and Accuracy, 8th International Conference on Parallel Problem Solving from Nature - PPSN VIII, Birmingham, UK.
- Aguilar-Ruiz, J., Bacardit, J. and Divina, F., Experimental Evaluation of Discretization Schemes for Rule Induction, Genetic and Evolutionary Computation Conference 2004, GECCO'04, Seattle, USA.
- Bacardit, J. and Garrell, J.M., Analysis and improvements of the Adaptive Discretization Intervals knowledge representation, Genetic and Evolutionary Computation Conference 2004, GECCO'04, Seattle, USA.
- Bacardit, J. and Butz, M.V., Data Mining in Learning Classifier Systems: Comparing XCS with GAssist, 7th International Workshop on Learning Classifier Systems - IWLCS 2004, Seattle, USA.
- Bacardit, J., Goldberg D.E. and Butz, M.V., Improving the Performance of a Pittsburgh Learning Classifier System Using a Default Rule, 7th International Workshop on Learning Classifier Systems - IWLCS 2004, Seattle, USA.
- Llorà, X., Goldberg, D.E., Bacardit, J., Traus, I., and Bernadó, E. Where to Go Once You Evolved a Bunch of Promising Hypotheses?, 6th International Workshop on Learning Classifier Systems - IWLCS 2003, Chicago, USA.
- Bacardit, J. and Garrell, J.M., Bloat control and generalization pressure using the minimum description length principle for a Pittsburgh approach Learning Classifier System, 6th International Workshop on Learning Classifier Systems - IWLCS 2003, Chicago, USA.
- Bacardit, J. and Garrell, J.M., Evolving multiple discretizations with adaptive intervals for a Pittsburgh Rule-Based Learning Classifier System, Genetic and Evolutionary Computation Conference 2003, GECCO'03, Chicago, USA.
- Bacardit, J. and Garrell, J.M., Evolution of Multi-Adaptive Discretization Intervals for a Rule-Based Genetic Learning System, 7th Iberoamerican Conference on Artificial Intelligence (IBERAMIA2002), Sevilla, Spain.
- Bacardit, J. and Garrell, J.M., Evolution of Adaptive Discretization Intervals for a Rule-Based Genetic Learning System, Genetic and Evolutionary Computation Conference 2002, GECCO'02, New York, USA.

5.4 National conferences

- Bacardit, J., Garrell, J.M. and Miralles, P., Combinando multiples discretizadores para aprendizaje de reglas evolutivo con enfoque de Pittsburgh, Tercer Congreso Español de Metaheurísticas, Algoritmos Evolutivos y Bioinspirados, pages 192-202, 2004.
- Bacardit, J. and Garrell, J.M., Comparison of training set reduction techniques for Pittsburgh approach Genetic Classifier Systems, X Conferencia de la Asociación Española para la Inteligencia Artificial (CAEPIA2003), 2003.
- Bacardit, J. and Garrell, J.M., Incremental Learning for Pittsburgh Approach Classifier Systems, Segundo Congreso Español de Metaheurísticas, Algoritmos Evolutivos y Bioinspirados, pages 303-311, 2003.

Bacardit, J. and Garrell, J.M., The role of interval initialization in a GBML system with rule representation and adaptive discrete intervals, 5th Catalan Conference on Artificial Intelligence (CCIA 2002), LNAI vol. 2504, pages 184-195, Springer, 2002.

Bacardit, J. and Garrell, J.M., Métodos de generalización para sistemas clasificadores de Pittsburgh, Primer Congreso Español de Algoritmos Evolutivos y Bioinspirados (AEB 02), pages 486-493, 2002.

5.5 Technical reports

Bacardit, J., Goldberg D.E. and Butz, M.V., Improving the Performance of a Pittsburgh Learning Classifier System Using a Default Rule, Illinois Genetic Algorithms Laboratory, Technical report 2004032. University of Illinois at Urbana-Champaign, IL, USA.

Abbass, H.A., Bacardit, J., Butz, M.V., Llorà, X., Online adaptation in Learning Classifier Systems: Stream Data Mining, Illinois Genetic Algorithms Laboratory, Technical report 2004031. University of Illinois at Urbana-Champaign, IL, USA.

Bacardit, J. and Butz, M.V., Data Mining in Learning Classifier Systems: Comparing XCS with GAssist, Illinois Genetic Algorithms Laboratory, Technical report 2004030. University of Illinois at Urbana-Champaign, IL, USA.

Bacardit, J., Goldberg D.E., Butz, M.V., Llorà, X. and Butz, M.V., Speeding-up Pittsburgh Learning Classifier Systems: Modeling Time and Accuracy, Illinois Genetic Algorithms Laboratory, Technical report 2004022. University of Illinois at Urbana-Champaign, IL, USA.

6 Experience

2003-Current Date “KEEL: Knowledge Extraction based on Evolutionary Learning”. Sponsor: Spanish Research Agency (grant TIC2002-04036-C05). Project involving the Universities of Granada, Cordoba, Jaen, Oviedo and Ramon Llull University, in Spain. Software development coordinator of the subproject “Integration and Development of Michigan and Pittsburgh Rule Learning Evolutionary Models, Reasoning Based on Cases and Data Mining in the KEEL Environment (Ramon Llull University, TIC2002-04036-C05-03)”

2003-Current Date “Content analysis-based mammography images retrieval tool for breast-cancer diagnosis advising”, Sponsor: Spanish Research Agency (grant TIC2002-04160-C02). Project involving the University of Girona, Josep Trueta Medical Center and Ramon Llull University.

2003-2004 “Design and Implementation of a Distributed Object-oriented Framework for the Cooperation and Competition of Intelligent Agents”, Intelligent Systems Research Group. Enginyeria i Arquitectura La Salle, Ramon Llull University. Project coordinator.

2001-Current Date “Analysis and design of reliability-enhancement techniques for automatical classification using Pittsburgh Genetic-Based Machine Learning”. Intelligent Systems Research Group, Enginyeria i Arquitectura La Salle, Ramon Llull University.

2001-Current Date Research assistant at the Intelligent Systems Research Group, Enginyeria i Arquitectura La Salle, Ramon Llull University.

2001-Current Date “Teacher of Introduction to Intelligent Systems (30 hours course)”, Enginyeria i Arquitectura La Salle, Ramon Llull University.

2001-2002 “Design and Implementation of Machine Learning techniques for the Diagnosis of Breast Cancer.”. Project: Breast cancer diagnosis using Computer Vision and Machine Learning techniques. Sponsor: Fondo de Investigación Sanitaria (Instituto Carlos III), FIS 00/0033-02 (Spanish Government). Ramon Llull University and University of Girona.

2000-2001 “Design and Implementation of the Web Work-flow for the 4th Catalan Conference on Artificial Intelligence (CCIA 2001)”, Department of Computer Science, Enginyeria i Arquitectura La Salle, Ramon Llull University.

1999-2000 “Design of Machine Learning techniques for Distance-Learning Platforms” . Project: “Study and implementation of Artificial Intelligence tools for Distance Learning Tools and ATM networks”. Sponsor: Consejo de Investigaciones Científicas Y Tecnológicas, TEL98-0408-C02-02 (Spanish Government). Ramon Llull University, University of Girona and The Open University of Catalonia.

7 Professional activities

7.1 Conference organization

- Electronic Work-flow Chair, 4th Catalan Conference on Artificial Intelligence (CCIA 2001).

7.2 Conference program committees and journal reviews

- IEEE Transactions on Systems, Man and Cybernetics Part-B
- Genetic and Evolutionary Computation Conference (GECCO 2005)

7.3 Memberships

- Member, International Society of Genetic and Evolutionary Computation, 2002-Current Date.

8 Software

EECE Self-teaching tools for genetic algorithms on MS Windows platforms.

GAssist Genetic-based machine learning platform based on the Pittsburgh model. Contains several knowledge representations, windowing techniques for run-time reduction and several generalization pressure techniques to obtain compact and accurate solutions

9 Skills

- Programming Languages: C, C++, Java, Javascript, Perl, Prolog, Lisp, Sh
- Java technologies: RMI, JDBC, JSP, EJB
- Development frameworks: Visual C++, Eclipse
- Linux, Solaris and Windows platforms
- Distributed and web programming
- Data-Base Management Systems: MySQL, PostgreSQL and Oracle

- Languages: Catalan, English and Spanish