

Ismel Brito Rodriguez

Computer Scientist

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University Education

- 2005-2007 **PhD, Artificial Intelligence**, *Polytechnic University of Catalonia (UPC)*, Barcelona, Spain.
honors: Cum Laude
- 2002-2004 **MS, Artificial Intelligence**, *Polytechnic University of Catalonia (UPC)*, Barcelona, Spain.
- 1993-1998 **BS, Computer Science**, *Faculty of Mathematics and Computer Science, Havana University (UH)*, Havana, Cuba.

Experience

- January, 2016–Present **R&D Engineer, GICIEN (Automatic metadata extraction from semi-structured data records)**, *Artificial Intelligence Research Institute (IIIA)*, Spanish National Research Council (CSIC).
Develop a knowledge-based approach to help extracting the correct components of bibliographic citations from REDIB (Red Iberoamericana de Innovación y Conocimiento Científico).
- June–December, 2015 **R&D Engineer, Text Mining projects**, *Artificial Intelligence Research Institute (IIIA)*, Spanish National Research Council (CSIC).
Apply Text Mining Techniques for automated extraction of:
 - statistical analysis in clinical trial literature, and;
 - ingredients, cooking methods, cooking tools and dish types in Spanish recipe books.
- January–May, 2015 **R&D Engineer, PRAISE (Practice and peRformance Analysis Inspiring Social Education)**, *Artificial Intelligence Research Institute (IIIA)*, Spanish National Research Council (CSIC).
Develop a web-based tool to support music teachers in creating educational activity workflows for their students.
- 2013–2014 **R&D Engineer, WOLD (Wind turbine Optimisation through Learning for Diagnosis)**, *Artificial Intelligence Research Institute (IIIA)*, Spanish National Research Council (CSIC).
Detecting potential faults at an early stage is essential to reduce wind turbine repair and maintenance costs. This work is aimed at developing diagnosis tools for wind turbines. The proposed approach employs data-mining as well as machine learning algorithms to construct prediction models for wind turbine states.
- 2012–2013 **R&D Engineer, WorthPlay: Digital Games for Active and Positive Ageing (Proyectos Cero on Ageing)**, *Artificial Intelligence Research Institute (IIIA)*, Spanish National Research Council (CSIC).
Propose, implement and assess a recommender system as part of an adaptive online game for elderly people.

- March–April, 2012 **R&D Engineer**, *Dept. Neuroscience. Division of Cellular and Molecular Neurochemistry, Karolinska Institutet (KI)*, Stockholm, Sweden.
 This two-month stay was the starting point for a future collaboration. From a bioinformatics approach, we try to answer a simple but key question for Biology: what are the factors that make a pair of cell receptors interact between themselves?. We built interaction networks (see [GPCR-HetNet](#)) according to the receptor-receptor interactions reported in the related literature. These scale-free networks provide us the tool to identify the most interacting receptors (hubs) and the least ones (non-hubs). This work proceeds with the statistic analysis to correlate hubs and non-hubs to biochemical and structural properties of receptors (e.g. charge, disorder, post-translational modification etc).
- 2011–2012 **R&D Engineer, Automatic generation of narratives (CENIT project)**, *Artificial Intelligence Research Institute (IIIA)*, Spanish National Research Council (CSIC).
 Implement a case-based reasoning (CBR) system for the automatic generation of narratives and assess the quality of generated narratives according to the 7 criteria proposed by Weyhrauch. This project mainly focuses on two domains related with sport events: football and F1.
- 2010–2012 **R&D Engineer, RECEDIT. Weighted Soft Constraints: Centralized and Distributed Cases**, *Artificial Intelligence Research Institute (IIIA)*, Spanish National Research Council (CSIC).
 Develop efficient solving algorithms for Distributed Weighted Constraint Satisfaction problems.
- 2009–2011 **R&D Engineer, LiquidPub: Scientific Publications meet the Web (FP7 European project)**, *Artificial Intelligence Research Institute (IIIA)*, Spanish National Research Council (CSIC).
 Design, development and support of tools aimed at implementing trust and reputation techniques on the world of scientific publications.
- 2007–2009 **R&D Engineer, eRep: Social knowledge for e-Governance (FP6 European project)**, *Artificial Intelligence Research Institute (IIIA)*, Spanish National Research Council (CSIC).
 Design, development and support of applications aimed at reputation techniques for multi-agent systems.
- 2005–2009 **R&D Engineer, REPLI-II: Constraint reasoning and its application to planning**, *Artificial Intelligence Research Institute (IIIA)*, Spanish National Research Council (CSIC).
 Develop efficient and secure algorithms for Distributed Constraint Satisfaction problems.

Other Experiences

- 2010-Present **Involved in VitoTag Biosciences**, a European biotechnology company.
 2010-2012 **Involved in Finixer**, a sports-related start-up.

Supplementary Training

- 2015 **Bioinformatics Algorithms**, *University of California, Coursera*.
 2015 **Mining Massive Datasets**, *Stanford University, Coursera*.
 2015 **Exploratory Data Analysis**, *Johns Hopkins University, Coursera*.
 2014 **Introduction to Recommender Systems**, *University of Minnesota, Coursera*.
 2014 **M101P: MongoDB for Developers**, *Mongo DB University*.
 2014 **Programming Mobile Applications for Android Handheld Systems**, *University of Maryland, Coursera*.
 2014 **Curso básico de Marketing Digital**, *Activate*.

- 2013 **Introduction to Data Science**, *University of Washington, Coursera.*
 2013 **Introduction to Databases**, *Stanford University.*
 2012 **Oracle Certified Professional, Java SE 6 Programmer**, *Oracle.*

Technical Experience

Languages	Java, Python, C/C++, JavaScript, Matlab, R, Octave, HTML 5, CSS 3, XML, JSON, JSP, PHP, Perl, Lisp
Technologies	scikit-learn, Mahout, Apache Hadoop, Tableau, Node.js, Express, Drupal CMS, \LaTeX , Bash Scripting, jQuery, Bootstrap, Apache Tomcat, Apache Maven, Ajax, DB2, Photoshop, MS-DOS, Windows, Ubuntu & Red Hat Linux, OSX, along with office suite.
Databases	MySql, MongoDB, SQLite, Oracle, SQL Server
IDEs	Eclipse, PyCharm, NetBeans, Visual Studio
CVS	SVN, Git
Artificial Intelligence Technologies	Combinatorial Reasoning, Evolutionary Computation, Multi-agent Systems, Trust and Reputation, Data Mining, Machine Learning, Recommendation Systems, Case Based Reasoning

Skills and Competences

Social	Excellent communicator and listener. Experienced in working with various cultures and language communities.
Organisational	Leadership skill based on dialogue and mutual understanding; highly organised and methodical.

Scientific Publications

- 2014 **D.O. Borroto-Escuela, I. Brito, W. Romero-Fernandez, M. Di Palma, J. Oflijan, K. Skieterska, J. Duchou, K. Van Craenenbroeck, D. Suárez-Boomgaard, A. Rivera; D. Guidolin, L.F. Agnati, K. Fuxe.** The G Protein-Coupled Receptor Heterodimer Network (GPCR-HetNet) and Its Hub Components. *International Journal of Molecular Sciences* 2014, 15, 8570-8590.
- 2014 **D.O. Borroto-Escuela, W. Romero-Fernandez, I. Brito, A. O. Tarakanov, D. Guidolin, L. F. Agnati, and K. Fuxe.** The receptor–receptor interactions within the cytokine receptor superfamily. Role in neuroinflammation and beyond. *Neurology, Psychiatry and Brain Research* 20, no. 1 (2014): 6-7.
- 2013 **D.O. Borroto-Escuela, A. Ravani, AO Tarakanov, I Brito, M Narvaez, W Romero-Fernandez, F Corrales, LF Agnati, S Tanganelli, L Ferraro, K Fuxe.** Dopamine D2 receptor signaling dynamics of dopamine D2-neurotensin 1 receptor heteromers. *Biochem Biophys Res Commun.* 2013 May 24;435(1):140-6.
- 2012 **S. Ontañón, J. Lluís Arcos, J. Puyol-Gruart, E. Carasusan, D. Giribet, D. de La Cruz, I. Brito and C. Lopez Del Toro.** GENA: A Case-Based Approach to the Generation of Audio–visual Narratives. *Proceedings of the 20th International Conference on Case-Based Reasoning (ICCBR-12).* Lecture Note in Computer Science, Springer. Vol. 7466, pp. 287-311. Lyon, France. 2012

- 2012 **I. Brito, N. Osman, J. Sabater-Mir, C. Sierra.** CHARMS: A Charter Management System. Automating the Integration of Electronic Institutions and Humans. *Applied Artificial Intelligence*, Vol. 26, issue 4: Taylor & Francis Group. 2012.
- 2012 **C. Bessière, I. Brito, P. Gutierrez, P. Meseguer.** Global Constraints in Distributed Constraint Satisfaction. *Proceedings of the 11th International Joint Conference on Autonomous Agents and Multi-Agent Systems (AAMAS 2012)*, 2012.
- 2010 **I. Brito, P. Meseguer.** Cluster Tree Elimination for Distributed Constraint Optimization with Quality Guarantees. *Fundamenta Informaticae*, Vol. 102, Num. 3-4, pp. 263-286. 2010
- 2010 **I. Brito, P. Meseguer.** Improving DPOP with Function Filtering. *Proceedings of 9th International Conference on Autonomous Agents and Multiagent Systems (AAMAS 2010)*. 2010
- 2009 **I. Pinyol, D. Villatoro, I. Brito, J. Sabater-Mir.** HIHEREI: human interaction within hybrid environments regulated through electronic institutions. *Proceedings of 8th International Conference on Autonomous Agents and Multiagent Systems (AAMAS 2009)*, Vol. 2, pp 1417-1418. 2009.
- 2009 **I. Brito, P. Meseguer.** Distributed Constraint Satisfaction with Partially Known Constraints. *Constraints*. Vol. 1383-7133, pp. 199-234. 2009.
- 2008 **I. Brito, P. Meseguer.** Distributed Cluster Tree Elimination. RCRA-2008 workshop, Editor M. Gavanelli, T. Mancini. 2008.
- 2008 **I. Brito, P. Meseguer.** Connecting ABT with Arc Consistency. *Proceeding of CP-2008. Lecture Note in Computer Science*, Springer.
- 2007 **I. Brito, A. Meisels, P. Meseguer, and R. Zivan.** Distributed Constraint Satisfaction with Partially Known Constraints. *Constraints*. Vol. 1383-7133 (Print) 1572-9354 (Online). 2007. (Impact Factor: the 49th Computer Science Journal over 93 according to Journal Citation Reports).
- 2007 **I. Brito, P. Meseguer.** Distributed Meeting Scheduling. In *Frontiers in Artificial Intelligence, proceedings of Desè Congrès Internacional de Associació Catalana Intel.ligència Artificial (CCIA-2007)*, Andorra, 2007.
- 2007 **I. Brito, P. Meseguer.** Distributed Forward Checking May Lie for Privacy. *Proceeding of The International Workshop on Distributed Constraint Reasoning (CP-2007)*, 2007.
- 2007 **I. Brito, P. Meseguer.** Improving ABT Performance by Adding Synchronization Points. *Recent Advances in Constraints, Lecture Note in Artificial Intelligence*, 2007
- 2006 **I. Brito, P. Meseguer.** Distributed Forward Checking May Lie for Privacy, *Recent Advances in Constraints, Lecture Note in Artificial Intelligence*, 2006.
- 2006 **I. Brito, P. Meseguer.** Distributed Stable Marriage Problem with Ties and Incomplete Lists. *Workshop on Distributed Constraint Satisfaction Problems at the 17th European Conference on Artificial Intelligence (ECAI-2006)*, Riva del Garda, 2006.
- 2006 **I. Brito, P. Meseguer.** Asynchronous Backtracking Algorithms for Non-binary DisCSP. *Workshop on Distributed Constraint Satisfaction Problems at the 17th European Conference on Artificial Intelligence (ECAI-2006)*, Riva del Garda, 2006.

- 2006 **I. Brito, P. Meseguer.** Distributed Stable Matching Problems with Ties and Incomplete Lists. Proceedings of the Twelfth International Conference on Principles and Practice of Constraint Programming (CP-2006). Lecture Notes in Computer Science, Volume 4204, pp. 675-680, Nantes, 2006.
- 2005 **I. Brito, P. Meseguer.** Distributed Stable Marriage Problem. Sixth International Workshop on Distributed Constraint Reasoning at the Nineteenth International Joint Conference on Artificial Intelligence (IJCAI-2005). Edinburgh, Scotland, 30 July - 5 August, 2005.
- 2005 **I. Brito, P. Meseguer.** Distributed Stable Matching Problems. Proceedings of the Eleventh International Conference on Principles and Practice of Constraint Programming (CP-2005). Lecture Notes in Computer Science. Volume 3709. pp. 152-166. Sitges, Spain. September, 2005.
- 2005 **C. Bessière, A. Maestre, I. Brito, P. Meseguer.** Asynchronous Backtracking without Adding Links: a New Member to ABT Family. Artificial Intelligence. Volume 161. Issues 1-2. pp. 7-24. January, 2005.
- 2004 **I. Brito.** Synchronous, Asynchronous and Hybrid Algorithms for DisCSP. Proceedings of the Tenth International Conference on Principles and Practice of Constraint Programming (CP-2004). Lecture Notes in Computer Science, Volume 3258, pp. 791, January 2004.
- 2004 **I. Brito, P. Meseguer.** Synchronous, Asynchronous and Hybrid Algorithms for DisCSP. Fifth International Workshop on Distributed Constraint Reasoning at the Tenth International Conference on Principles and Practice of Constraint Programming (CP-2004). Toronto, Canada. September, 2004.
- 2004 **I. Brito, F. Herrero, P. Meseguer.** On the Evaluation of DisCSP Algorithms. Fifth International Workshop on Distributed Constraint Reasoning at the Tenth International Conference on Principles and Practice of Constraint Programming (CP-2004). Toronto, Canada. September, 2004.
- 2003 **I. Brito, P. Meseguer.** Distributed Forward Checking. Proceedings of the Ninth International Conference on Principles and Practice of Constraint Programming, CP-2003. Lecture Notes in Computer Science, Volume 2833, pp. 801 - 806, November 2003.
- 2000 **E. Ponce de León, F. Maldonado, I. Brito, A. Ciurlizza.** Aplicación de Algoritmos Genéticos en un Problema Industrial Modelizado ATSP con Restricciones de Tipo Comercial. X CLAIO: Congreso Latinoamericano de Investigación de Operaciones, 4-8, September 2000, Mexico.
- 1999 **E. Ponce de León, I. Brito, F. Maldonado.** Algoritmo Genético con Restricciones: una Aplicación a la Industria Textil. Segunda Conferencia Internacional de Ciencia, Tecnología y Desarrollo (CIMAF'99). March 22-26, 1999. Habana, Cuba.
- 1998 **I. Brito, E. Ponce de León, F. Maldonado.** Algoritmos Genéticos, la Convergencia Temprana y un Problema Asociado al Teñido de Telas. IX Congreso Latinoamericano de Investigación de Operaciones, pp. 144.1-144.6. August 24-31, 1998, Argentina.
- 1997 **E. Ponce de León, R. Santana, I. Brito, F. Maldonado.** Análisis de una Familia de Algoritmos Genéticos para un Problema de Secuenciación en el Teñido de Telas. Primer Encuentro Latinoamericano de Optimización, I ELIO, pp. 234-241. November 6-8. Chile.