

Santiago Ontañón Villar

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Educational Background

Ph.D. in Computer Science (Artificial Intelligence) issued by the *Universitat Autònoma de Barcelona* with the qualification of “Cum Laude”, 2005.

Advanced Studies Diploma in Computer Science and Artificial Intelligence issued by the *Universitat Autònoma de Barcelona*, 2004.

Degree in Computer Science issued by the *Universitat Autònoma de Barcelona* (with special award only given to the top two students of my promotion), 2000.

Employment History

- From 15 May 2009** Juan de la Cierva fellowship, Artificial Intelligence Research Institute (IIIA-CSIC), Barcelona, Spain
- 2006 – 14 May 2009** Postdoctoral Fellow (hired to work in the Integrated Learning DARPA project), Georgia Institute of Technology, Atlanta, Georgia, US
- 2004 - 2006** Assistant Professor, University of Barcelona, Barcelona, Spain
- 2001 - 2004** Predoctoral scholarship, Artificial Intelligence Research Institute (IIIA-CSIC), Barcelona, Spain

Current Fields of Interest

Artificial intelligence and specifically case-based reasoning, game AI, and machine learning.

Teaching Experience

I taught undergraduate level courses to CS majors during two years at the University of Barcelona. Specifically, I taught the following courses:

- “Introduction to Databases”, University of Barcelona (2004-2005)
- “Data Structures”, University of Barcelona (2004-2005)
- “Operative Systems”, University of Barcelona (2004-2005)
- “Programming Elements”, University of Barcelona (2005-2006)

During my postdoctoral stay in Georgia Tech, I helped preparing the Fall 2007 CS 7620 / CS 4803 Case Based Reasoning course taught by Professor Ashwin Ram, and also gave a guest lecture in the FALL 2008 CS 4731 / CS 8803 Game AI course taught by Mark Riedl. Additionally, I co-advised more than a dozen MS and undergrad students.

Publications

Journals articles:

1. Enric Plaza and Santiago Ontañón (2006),
Learning Collaboration Strategies for Committees of Learning Agents, in Journal of Autonomous Agents and Multi-Agent Systems (JAAMAS), Vol 13, Issue 3, pp. 429-461.
2. Eva Armengol, Santiago Ontañón and Enric Plaza (2005),
The explanatory power of symbolic similarity in case-based reasoning, in Artificial Intelligence Review. Vol. 24, N. 2, pp. 145 - 161.
3. Santiago Ontañón, Neha Sugandh, Kinshuk Mishra and Ashwin Ram (2009)
Online Case-Based Planning, (to appear in Computational Intelligence) (Top-tier journal with impact factor 1.972)

Journals articles (submitted):

1. Manu Sharma, Santiago Ontañón, Manish Mehta and Ashwin Ram (submitted 2008),
Drama Management for Interactive Fiction Games, submitted to Computational Intelligence (Top-tier journal with impact factor 1.972)

Books:

1. Santiago Ontañón (2008),
Ensemble Case Based Learning for Multi-Agent Systems. VDM Verlag, ISBN-10: 3836474301, ISBN-13: 9783836474306.

Book chapters:

1. Manish Mehta and Santiago Ontañón and Ashwin Ram (2008),
Adaptive Computer Games: Easing the Authorial Burden, in Steve Rabin (Editor), AI Game Programming Wisdom 4. pp. 617-632 (This is the leading Game AI series, peer-reviewed for scientific merit and well-read by industry practitioners)
2. Santiago Ontañón and Kinshuk Mishra and Neha Sugandh and Ashwin Ram (2008)
Learning from Demonstration and Case-Based Planning for Real-Time Strategy Games, in Soft Computing Applications in Industry (ISBN 1434-9922 (Print) 1860-0808 (Online)), p. 293-310
3. Santiago Ontañón and Enric Plaza (2007),
Arguments and Counterexamples in Case-based Joint Deliberation, in N. Maudet and S. Parsons and I. Rahwan (Editors), Argumentation in Multi-Agent Systems, Lecture Notes in Artificial Intelligence Vol. 4766, p. 36-53, Springer Verlag.
4. Jesús Cerquides, Maite López-Sánchez, Santiago Ontañón, Eloi Puertas, Anna Puig, Oriol Pujol, Dani Tost (2005),
Learning Methods for Automatic Classification of Biomedical Volume Datasets, in CAEPIA05 post-proceedings volume.
5. Enric Plaza and Santiago Ontañón (2003)

Cooperative Multiagent Learning, in Adaptive Agents and Multi-Agent Systems, Lecture Notes on Artificial Intelligence 2636, Springer Verlag.

Top-tier International Conferences:

1. Manish Mehta and Santiago Ontañón and Ashwin Ram (2009) *Using Meta-Reasoning to Improve the Performance of Case-Based Planning*, in ICCBR 2009.
2. Santiago Ontañón and Enric Plaza (2009) *On Similarity Measures based on a Refinement Lattice*, in ICCBR 2009.
3. Jainarayan Radhakrishnan and Santiago Ontañón and Ashwin Ram (2009) *Goal-Driven Learning in the GILA Integrated Intelligence Architecture*, in IJCAI 2009.
4. Xiaoqin (Shelley) Zhang, Sungwook Yoon, Phillip DiBona, Darren Scott Appling, Li Ding, Janardhan Rao Doppa, Derek Greeny, Jinhong K. Guo, Ugur Kuter, Geoff Levine , Reid L. MacTavish , Daniel McFarlane, James R Michaelis, Hala Mostafa , Santiago Ontañón, Charles Parker, Jainarayan Radhakrishnan, Antons Rebguns, Bhavesh Shrestha, Zhexuan Song , Ethan B. Trehitt, Huzaiifa Zafar, Chongjie Zhang, Dan Corkill, Gerald DeJong, Thomas G. Dietterich, Subbarao Kambhampati, Victor Lesser, Deborah L. McGuinness, Ashwin Ram, Diana Spears , Prasad Tadepalli, Elizabeth T. Whitaker, Weng-Keen Wong, James A. Hendler, Martin O. Hofmann, Kenneth Whitebread (2009) *An Ensemble Learning and Problem Solving Architecture for Airspace Management*, in IAAI-2009.
5. Neha Sugandh and Santiago Ontañón and Ashwin Ram (2008), *On-Line Case-Based Plan Adaptation for Real-Time Strategy Games*, in AAI-2008.
6. Kinshuk Mishra and Santiago Ontañón and Ashwin Ram (2008), *Situation Assessment for Plan Retrieval in Real-Time Strategy Games*, in ECCBR-2008.
7. Neha Sugandh and Santiago Ontañón and Ashwin Ram (2008), *Real-Time Plan Adaptation for Case-Based Planning in Real-Time Strategy Games*, in ECCBR-2008
8. Santiago Ontañón and Kinshuk Mishra and Neha Sugandh and Ashwin Ram (2007) *Case-Based Planning and Execution for Real-Time Strategy Games*, in ICCBR 2007, pp. 164 – 178.
9. Santiago Ontañón and Enric Plaza (2007), *Learning and Joint Deliberation through Argumentation in Multi-Agent Systems*, in Autonomous Agents and Multi-Agent Systems (AAMAS 2007).
10. Santiago Ontañón and Enric Plaza (2007), *Case-based Learning from Proactive Communication*, in International Joint Conference on Artificial Intelligence (IJCAI 2007).
11. Santiago Ontañón and Enric Plaza (2005), *Recycling Data for Multi-Agent Learning*, in Luc de Raed and Stefan Wrobel (Eds.) Proceedings 22nd International Conference on Machine Learning (ICML 2005), Pages 633-640. ACM Press
12. Santiago Ontañón and Enric Plaza (2004) *Justification-based Selection of Training Examples for Case Base Reduction*, in J.F. Boulicaut, F. Esposito, F. Giannotti and D. Pedresh (Eds.) Proceedings of the fifteenth

European Conference on Machine Learning (ECML 2004). Lecture Notes in Artificial Intelligence 3201, p 310-321. Springer-Verlag.

13. Santiago Ontañón and Enric Plaza (2004)
Justification-based Case Retention, in P.A. Gonzalez and P. Funk (Eds.) Proceedings of the seventh European Conference on Case Based Reasoning (ECCBR 2004). Lecture Notes in Artificial Intelligence 3155, p. 346-360. Springer-Verlag.
14. Santiago Ontañón and Enric Plaza (2003)
Collaborative Case Retention Strategies for CBR Agents, in “Advances in Case-Based Reasoning”, proceedings of the fifth International Conference on Case Based Reasoning (ICCBR 2003). Lecture Notes on Artificial Intelligence 2689, p. 392-406.
15. Santiago Ontañón and Enric Plaza (2003),
Justification-based Multiagent Learning, in proceedings of the Twentieth International Conference on Machine Learning (ICML 2003), Washington D.C, USA, August 2003, p. 576-583, Morgan Kaufmann
16. Santiago Ontañón and Enric Plaza (2003),
Learning to Form Dynamic Committees, in proceedings of the second International Conference on Autonomous Agents and Multiagent Systems (AAMAS 2003), Melbourne, Australia, July 2003, p. 504-511. ACM Press.
17. Santiago Ontañón and Enric Plaza (2002)
A Bartering Approach to Improve Multiagent Learning, in proceedings of the first International joint conference on Autonomous Agents and Multiagent Systems (AAMAS 2002), July 2002, p.386-393. ACM press.
18. Santiago Ontañón and Enric Plaza (2002)
Collaboration Strategies to Improve Multiagent Learning, in T. Elomaa, H. Mannila, H. Toivonen (Eds.) “Machine Learning: ECML 2002”, proceedings of the thirteenth European Conference on Machine Learning (ECML 2002). Lecture Notes in Artificial Intelligence 2430, p. 331-344. Springer-Verlag.
19. Santiago Ontañón and Enric Plaza (2001)
Learning When to Collaborate among Learning Agents, in L. De Raedt, P. Flach (Eds.) “Machine Learning: ECML 2001”, proceedings of the twelfth European Conference on Machine Learning (ECML 2001). Lecture Notes in Artificial Intelligence 2167, p. 394-405. Springer-Verlag.
20. Enric Plaza and Santiago Ontañón (2001)
Ensemble Case-based Reasoning: Collaboration Policies for Multiagent Cooperative CBR, in “Case-Based Reasoning Research and Development: ICCBR 2001”, proceedings of the fourth International Conference on Case Based Reasoning. Lecture Notes in Artificial Intelligence 2080, p. 437-451. Springer-Verlag.

Other conferences and workshops:

1. Santiago Ontañón and Kane Bonnette and Prafulla Mahindrakar and Marco A. Gómez-Martín and Katie Long and Jainarayan Radhakrishnan and Rushabh Shah and Ashwin Ram (2009) ***Learning from Human Demonstrations for Real-Time Case-Based Planning***. in the IJCAI-09 Workshop on Learning Structural Knowledge From Observations

2. Santiago Ontañón and Abhishek Jain and Manish Mehta and Ashwin Ram (2008)
Developing a Drama Management Architecture for Interactive Fiction Games. in International Conference on Interactive Digital Storytelling ICIDS 2008, Erfurt, Germany, pp 186-197
3. Santiago Ontañón and Enric Plaza (2008),
Learning, Information Exchange, and Joint-Deliberation Through Argumentation in Multi-Agent Systems, in On The Move Federated Conferences, OTM 2008 (invited paper)
4. Suhas Virmani, Yatin Kanetkar, Manish Mehta, Santiago Ontañón and Ashwin Ram (2008),
An Intelligent IDE for Behavior Authoring in Real-Time Strategy Games, in AIIDE-2008
5. Andrew Trusty, Santiago Ontañón and Ashwin Ram (2008),
Stochastic Plan Optimization in Real-Time Strategy Games, in AIIDE-2008.
6. Santiago Ontañón and Enric Plaza (2002)
Argumentation-based Information Exchange in Prediction Markets, in ArgMAS 2008 workshop, located in AAMAS 2008.
7. Manu Sharma and Santiago Ontañón Manish Mehta and Ashwin Ram (2007) ***Drama Management Evaluation for Interactive Fiction Games,*** in AAAI-2007 Intelligent Narratives Technologies Fall Symposium
8. Manish Mehta and Santiago Ontañón and Ashwin Ram (2007),
Driving Interactive Drama Research through Building Complete systems, in AAAI-2007 Intelligent Narratives Technologies Fall Symposium
9. Manu Sharma and Manish Mehta and Santiago Ontañón and Ashwin Ram (2007)
Evaluating Player Modeling for a Drama Manager Based Interactive Fiction, in AIIDE'07 Workshop on Optimizing Player Satisfaction.
10. Ashwin Ram and Santiago Ontañón and Manish Mehta (2007),
Artificial Intelligence for Adaptive Computer Games, in FLAIRS 2007 (invited paper).
11. Manu Sharma and Santiago Ontañón and Christina Strong and Manish Mehta and Ashwin Ram (2007)
Towards Player Preference Modeling for Drama Management, in *Interactive Stories,* in FLAIRS 2007.
12. Santiago Ontañón and Enric Plaza (2007),
An Argumentation based Approach to Multi-Agent Learning, in FLAIRS 2007.
13. Maite López-Sánchez, Jesús Cerquides, Santiago Ontañón, Anna Puig, Eloi Puertas (2006),
Learning Methods Applied to High-Resolution CT Colume Data Classification, in 3IA 2006.
14. Santiago Ontañón and Enric Plaza (2006),
Arguments and Counterexamples for Case-based Joint Deliberation, in ArgMAS 2006 workshop in AAMAS 2006.
15. *Jesús Cerquides, Maite López-Sánchez, Santiago Ontañón, Eloi Puertas, Anna Puig, Oriol Pujol, Dani Tost* (2005),
Learning Methods for Automatic Classification of Biomedical Volume Datasets, in XI Conferencia de la Asociación Española para la Inteligencia Artificial (CAEPIA05).

16. *Eva Armengol, Santiago Ontañón and Enric Plaza* (2004),
Explaining Similarity in CBR, in Workshop in Explanation in CBR in the ECCBR 2004.
Technical report 142-04 Departamento de Sistemas Informáticos y Programación,
Universidad Complutense de Madrid, p. 87-95. Springer-Verlag
17. Santiago Ontañón and Enric Plaza (2002)
Cooperative Case Bartering for Case-Based Reasoning Agents, in “Topics in Artificial
Intelligence: CCIA'02”. Lecture Notes in Artificial Intelligence 2504, p. 294-308. Springer-
Verlag
18. Santiago Ontañón and Enric Plaza (2002)
Cooperative Case Bartering for Case-Based Reasoning Agents, in 2002 AAAI Spring
Symposium Series, p.77-83. AAAI Press.
19. Santiago Ontañón and Enric Plaza (2001)
Collaboration Policies for Case-Based Reasoning Agents, in proceedings of the Workshop
on Learning Agents, Autonomous Agents'2001.

Conference and Workshop Organization

I organized together with Professor Ian Watson the Special Track on Case-Based Reasoning in the FLAIRS 2008 and FLAIRS 2009 conferences.