

- Focused on AI research and applications combining machine-learning and model-based AI.
- Award-winning work on artificial intelligence for model-based sequential decision making.
- Aiming to make solid theoretical and empirical contributions to solving simple but significant problems.
- Strong technical, analytic and communication skills as demonstrated through publications and talks.

EDUCATION

PHD, COMPUTER SCIENCE

Excellent Cum Laude.
Advisor: Prof. Hector Geffner
Universitat Pompeu Fabra
Dec 2009 | Barcelona/Spain

BS & MS, COMPUTER SCIENCE

Universidad Simón Bolívar, Venezuela

PEER RECOGNITION

- Influenced the AI planning community by helping to popularize the *translation-based approach* of solving rich planning problems.
- Reviewed hundreds of articles submitted to top AI conferences (AAAI, IJCAI, ICAPS) and journals (AIJ, JAIR, KBS, ACM-TIST).

TEAMWORK

- Collaborated on research, both supervised / supervising, on-site / remote, leading to 20+ successful academic publications. (See list in next pages)
- Organized two academic workshops. Invited researchers to submit work, guided discussion and revision of the articles.
- Stimulated, coordinated and enabled online citizen activism. Main activities involved data crowdsourcing and event-mapping for improving citizen awareness during events including natural disasters and elections.

PROGRAMMING

Extensive experience with • Java • C / C++
• Python • Functional languages • Linux
• Computer clusters • Version control.

COMMUNICATION / COORD

- Presented original research at conferences, including a tutorial. (See list in next pages).
- Invited to talk at Nasa Ames, Univ of Amsterdam, Univ of Sao Paulo.
- Lectured hundreds of hours to groups of up to 130 students on AI, logic, computational logic, discrete math, functional languages, in addition to TA and programming labs.

TRAINING

Summer schools: • Deep learning 2017
• Reinforcement learning 2017.

LANGUAGES

- English: professional.
- Spanish: native.
- French: elementary.

EMPLOYMENT HISTORY

ELEMENT AI | Applied Research Scientist

Sep 2018 – present | Montreal, Canada

NUANCE COMMUNICATIONS | Senior Research Scientist

Nov 2016 – Sep 2018 | Montreal, Canada

UNIVERSITAT POMPEU FABRA | Visiting Professor

Jan 2013 – Dec 2015 | Barcelona, Spain

UNIV. CARLOS III DE MADRID | Postdoctoral Scholar

Dec 2010 – Dec 2012 | Madrid, Spain

UNIVERSIDAD SIMÓN BOLÍVAR | Assistant Professor

2008 – 2010 | Caracas, Venezuela

PALO ALTO RESEARCH CENTER (PARC) | Research Intern

July 2007 – September 2007 | California, USA

ARTIFICIAL INTELLIGENCE RESEARCH

INDUSTRIAL | Natural language

- Currently working on machine-learning-based intent detection using TensorFlow on abundant dense data.
- Worked one year on question answering on domain-specific content and no labelled data: • Information retrieval • Word embeddings • Ontologies.

EMPIRICAL | Think, code, measure, analyze, repeat, report

- Designed and ran hundreds of experiments over hundreds of problems.
- Examined sets of millions of data points for deeper understanding.
- Programmed complex algorithms, requiring millions of object instances.
- Turned empirical observations into theoretical results, and vice versa.

SEQUENTIAL DECISION MAKING | Model-based

- Main contributions to solving AI problems through simpler AI models
- Solved rich sequential decision making problems featuring
 - + Possible set / Probability distribution of factored states
 - + Observation actions + Nondeterministic actions
 - + Offline / Interactive + Durations and concurrencyobtaining offline / online policies through 3rd party classical planners.
- Introduced formal models and proved theoretical properties of them.
- Used logic / probabilistic reasoning, compilation to logical circuits, combinatorial optimization, and search.

RESEARCH AWARDS

AI SOFTWARE COMPETITION | # problems solved given time limit

- Winner of the Conformant track of the 5th Int. *Planning Competition* 2006.
- Required theoretical insights and fast-paced empirical work.

PAPERS AND PHD THESIS

- IJCAI-JAIR Best Paper Prize 2012 to an "outstanding paper published in JAIR in the preceding five calendar years".
- 2010 Best Dissertation Award by the International Conference on Automated Planning and Scheduling (ICAPS).
- Honourable Mention at the 2009 Artificial Intelligence Dissertation Award by the European Coordinating Committee for AI (ECCAI).

PUBLICATIONS

PHD THESIS

- H Palacios. *Translation-based approaches to Conformant Planning*. Supervised by Prof. Hector Geffner. Dec 2009. Barcelona, Spain.
 - Honourable Mention at the *2009 Artificial Intelligence Dissertation Award* by the European Coordinating Committee for AI (ECCAI).
 - *2010 Best Dissertation Award* by the International Conference on Automated Planning and Scheduling (ICAPS).

JOURNAL ARTICLES

- S Jimenez, A Jonsson, H Palacios. *Temporal Planning with a Classical Planner*. Working paper at 2016..
- V. Agrawal, J. Baier, K. Bekris, Y. Chen, A.S. d'Avila Garcez, P. Hitzler, P. Haslum, D. Jannach, E. Law, F. Lecue, L.C. Lamb, C. Matuszek, H. Palacios, B. Srivastava, L. Shastri, N. Sturtevant, R. Stern, S. Tellex, S. Vassos. *Reports of the AAAI 2012 Conference Workshops*. AI Magazine. 33(4): 119-126 (2012). ISSN 0738-4602.
- H. Palacios and H. Geffner. *Compiling Uncertainty Away in Conformant Planning Problems with Bounded Width*. Journal of Artificial Intelligence Research (JAIR). 35: 623-765. 2009. ISSN 1076-9757.
 - *IJCAI-JAIR Best Paper Prize 2012* to an "outstanding paper published in JAIR in the preceding five calendar years".

PATENTS

- M. B. Do, H. Palacios, R. Zhou, L. Kuhn, J. de Kleer. *Methods and Systems for Active Diagnosis through Logic-based Planning*. Patent US8145334. Issue date: 27 Mar 2012.
 - During internship at PARC (formerly Xerox PARC).

EDITOR

- Papers from the 2012 AAAI Workshop "Problem Solving Using Classical Planners". H. Palacios, P. Haslum, J. Baier. 98 pp. 2012. ISBN 978-1-57735-577-9.
- Proceedings of the ICAPS'10 workshop on Planning and Scheduling Under Uncertainty (13 May 2010), Bidot J., Bryce D., Buffet O., Palacios H., Sanner S. (Editors). 2010.

REFEREED CONFERENCE ARTICLES

- K. Fernandes, J.S. Cardoso, H. Palacios. *Learning and Ensembling Lexicographic Preference Trees with Multiple Kernels*. 2016 International Joint Conference on Neural Networks (IJCNN 2016).
- S. Jimenez, A. Jonsson, H. Palacios. *Temporal Planning With Required Concurrency Using Classical Planning*. 25Th International Conference on Automated Planning and Scheduling (ICAPS). Jerusalem, Israel. June 7-11, 2015.
- C. Boutilier, J. Lang, J. Oren, H. Palacios. *Robust Winners and Winner Determination Policies under Candidate Uncertainty*. Twenty-Eighth AAAI Conference on Artificial Intelligence (AAAI). July 27-31, 2014. Québec, Canada.
- A. Albore, H. Palacios and H. Geffner. *Compiling Uncertainty Away in Non-Deterministic Conformant Planning*. European Conference on Artificial Intelligence (ECAI), p. 465-470. ISBN 978-1-60750-605-8. Lisbon, Portugal, August 16-20, 2010.
- J. Hoffmann, N. Fates, H. Palacios. *Brothers in Arms? On AI Planning and Cellular Automata*. European Conference on Artificial Intelligence (ECAI). p. 223-228. ISBN 978-1-60750-605-8. Lisbon, Portugal. August 16-20, 2010.
- B. Bonet, H. Palacios and H. Geffner. *Automatic Derivation of Finite-State Machines for Behavior Control (Nectar Track)*. 24th AAAI conference on Artificial Intelligence (AAAI), p. 1656-1659. ISBN 978-1-57735-463-5. Atlanta, Georgia, USA, July 11-15, 2010
- B. Bonet, H. Palacios and H. Geffner. *Automatic Derivation of Memoryless Policies and Finite-State Controllers Using Classical Planners*. 19th International Conference on Automated Planning and Scheduling (ICAPS), p. 34-41. ISBN 978-1-57735-406-2. Thessaloniki, Greece, September 19-23, 2009.
- A. Albore, H. Palacios and H. Geffner. *A Translation-based Approach to Contingent Planning*. Int. Joint Conf. on Artificial Intelligence (IJCAI), p. 1623-1628. ISBN 978-1-57735-426-0. Pasadena, California, USA, July 11-17, 2009.
- A. Albore, H. Palacios and H. Geffner. *Fast and Informed Action Selection for Planning with Sensing*. In Current Topics in Artificial Intelligence, vol 4788/2007. Selected papers of the 12th Conference of the Spanish Association for Artificial Intelligence (CAEPIA), p. 1-10. ISBN: 978-3-540-75270-7. Salamanca, España. November 12-13, 2007.
- H. Palacios and H. Geffner. *From Conformant into Classical Planning: Efficient Translations That May be Complete Too*. In Proceedings of the 17th International Conference on Automated Planning and Scheduling (ICAPS), p. 264-271. ISBN 978-1-57735-344-7. Providence, Rhode Island, USA, September 22-26, 2007.
 - Best Student Paper Award at ICAPS 2007.
- H. Palacios and H. Geffner. *Compiling Uncertainty Away: Solving Conformant Planning Problems Using a Classical Planner (Sometimes)*. In Proceedings of the 21st National Conference on Artificial Intelligence (AAAI), p. 900-905. ISBN 978-1-57735-281-5. , Boston, Massachusetts, USA, July 16-20, 2006.
- H. Palacios and H. Geffner. *Mapping Conformant Planning into SAT through Compilation and Projection*. In Lecture Notes in Computer Sciences, vol 4177/2006. Selected papers of the 11th Conference of the Spanish Association for Artificial Intelligence (CAEPIA), 2005. p. 311-320. ISBN 3-540-45914-6. Santiago de Compostela, España, November 16-18, 2005.

– Best Paper Finalist at CAEPIA 2005.

- H. Palacios, B. Bonet, A. Darwiche, H. Geffner. *Pruning Conformant Plans by Counting Models on Compiled d-DNNF Representations*. In Proceedings of the 15th International Conference on Automated Planning and Scheduling (ICAPS), 2005. p 141-150. ISBN 978-1-57735-220-4. Monterey, California, USA. June 5-10 2005.
- H. Palacios and H. Geffner. *Planning as Branch and Bound: A Constraint Programming Implementation*. In Proceedings of the 28th Latin-American Conference on Informatics (infoUYclei), 2002. p. 239-251. ISBN 9974-7704-1-6. Montevideo, Uruguay, November 25-29 2002.

REFEREED WORKSHOPS ARTICLES

- D. Furelos-Blanco, A. Jonsson, H. Palacios, S. Jimenez. *Forward-Search Temporal Planning with Simultaneous Events*. ICAPS Workshop on Constraint Satisfaction Techniques for Planning and Scheduling, 2018.
- H. Palacios, A. Albore, H. Geffner. *Compiling Contingent Planning into Classical Planning: New Translations and Results*. In Proceedings of the Workshop “Models and Paradigms for Planning under Uncertainty: a Broad Perspective”, ICAPS 2014.
- C. Boutilier, J. Lang, J. Oren, H. Palacios. *Robust Winners and Winner Determination Policies under Candidate Uncertainty*. Fourth International Workshop on Computational Social Choice, 2012.
- H. Palacios and H. Geffner. *Compiling Uncertainty Away: Solving Conformant Planning Problems Using a Classical Planner (Sometimes)*. In Proceedings of the Workshop on Planning Under Uncertainty and Execution Control for Autonomous Systems, ICAPS 2006.
- H. Palacios and H. Geffner. *Mapping Conformant Planning into SAT through Compilation and Projection*. In Proceedings of the 1st International Workshop on Quantification in Constraint Programming held during the International Conference on Principles and Practice of Constraint Programming (CP), 2005.