

# Manuel Hermenegildo

## Areas of Interest

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Advanced Program Development Technology, Global Program Analysis / Optimization / Verification, Abstract Interpretation, Abstract Machines, Parallelizing Compilers, Resource-Aware Distributed Execution and Logical Agents, Automatic Documentation Tools, Constraint/Logic/Functional Programming Theory and Implementation, Execution Visualization, Sequential and Parallel Computer Architecture.

## Education

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- Aug 1986      **PhD.**, Electrical and Computer Eng., University of Texas at Austin.  
Aug 1984      **M. S.**, Electrical and Computer Eng., University of Texas at Austin.  
Jun 1981      **M. S.**, Electrical Eng., Technical U. of Madrid.

## Positions

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- Jan 2007-...      **Scientific Director**, *Madrid Institute for Advanced Research in Software Development Technology (IMDEA-Software, [www.software.imdea.org](http://www.software.imdea.org)); Madrid, Spain, and*
- Jan 1990-...      **Full Professor** (January 1990-May 1994 **Associate Professor**), *Technical U. of Madrid, Department of Computer Science; Spain.*  
General scientific coordination of the Institute. Research. Graduate and undergraduate teaching. PhD. student supervision. Leader of the CLIP (Computational Logic, Implementation and Parallelism) Lab. Principal investigator in several EU, international, and national projects on automatic parallelization, verification, abstraction carrying code, global analysis of programs, constraint logic programming, implementation of concurrent constraint languages, program debugging, automatic Web-site generation, next generation program development environments, and others.
- Feb 03-Dec 08      **Prince of Asturias Endowed Chair** in Information Science and Technology, *U. of New Mexico, Departments of Computer Science and Electrical and Computer Engineering; Albuquerque, NM, USA*  
Research. Graduate and undergraduate teaching. PhD. student supervision. International student supervision under exchange programs.
- May 00-Sep 02      **Director** of the *Spanish National Research Directorate* (Spanish central agency financing research in all areas of science and technology).  
Creation of the directorate from a number of previously existing units. Design and management of all programs funding projects, human resources, and infrastructures, including starting the "Ramon y Cajal" fellowship program. Coordination with regional, European, and international programs. Benchmarking of the national S&T system. Member, board of directors of the Spanish Foundation for Science and Technology, the Spanish Scientific Research Council (CSIC), and the Spanish Center for Industrial and Technological Development (CDTI). Spanish representative in the European Union Advisory Committee for Research (CREST).
- Oct 86-Dec 89      **Member, Technical Staff**, *MCC, Parallel Processing Program and ACA/Systems Technology Lab.; Austin, Texas.*  
Principal Investigator, PAL project: parallel and sequential high performance implementation of next generation languages and systems. Development of theoretical bases, execution models, and actual implementations of high-performance parallel logic programming systems. Design and simulation of coherent-cache, cluster-based multiprocessors. Performance studies of execution models on several parallel architectures and organizations.

- Mar 87-Jan 90 **Assistant/Associate Professor** (adjunct), *University of Texas at Austin*, Computer Science Department.  
Teaching (Computer Architecture, Logic Programming). Supervision of PhD. students working in the areas of parallel computer architecture, parallel execution model theory and design, abstract interpretation, and automatic parallelization.
- Jun 85-Aug 85 **Intern**, *MCC*; Austin, Texas.
- Jul 84-Aug 84 **Intern**, *IBM Corp.*; Austin, Texas.
- Nov 82-Aug 83 **Analyst**, *Philips S.A.*; Madrid, Spain.  
Technical management.
- Jun 81-Aug 81 **Design Engineer** (praktikum), *Siemens GmbH.*; Munich, Germany.  
Electronic circuit design and embedded systems development for audio and automotive applications.
- Jan 80-Oct 82 **President**, *HC Electronics*; Madrid, Spain.  
Co-owned venture, involved in the development and licensing of electronic circuit designs and prototypes. Products included a Speech Scrambler marketed by Eurotronica S.A., and a Spectrum Scanning System installed at the National Optics Institute.

#### Other Selected Activities, Honors, and Awards

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- “Julio Rey Pastor” **Prize for Research in Mathematics and Information and Communication Technologies**, 2006 (highest Spanish national scientific award in the areas of mathematics and information technology). “Aritmel” **Prize for Scientific Merit in Computer Science**, 2005. Elected member of the **Academia Europaea**.
- **Invited talks and/or tutorials** at RuleML’11, WLPE’11, TAPAS’10 (at SAS 2010), Datalog2.0 (2010), ProTest 09 workshop, 30 Years of Abstract Interpretation POPL’08 meeting, European Computer Science Summit’08, DAMP’07, EEAI’06, DAMP’06, ACM SAC’06, PDP’05, EUROPAR’04, EU-IST GRIDS’04, SAS’03, ICALP’02, ERCIM/CoLogNet’02, LPAR’01, CL’00, CM-PP’00, AgentLink’99 WS, ICLP’99, AFLP’98, EUROPAR’97, ILPS’97, ICLP’97, PAAM / PAP’97, CCL’96, LPAR’94, JICSLP’92, SAS’92, IEEE CompEuro 92, ICLP’89 and at several Workshops and Summer Schools.
- **Associate Editor** of the “*Journal of New Generation Computing*” (Springer-Verlag), **Editorial Adviser** and former **Area Editor** (architecture and implementation) of “*Theory and Practice of Logic Programming*” (Cambridge U. Press) (formerly, the “*Journal of Logic Programming*”, Elsevier North-Holland), **Area Editor** of “*Journal of Applied Logic*” (Elsevier North-Holland), former **Associate Editor** of “*ACM Transactions on Programming Languages and Systems*” (ACM).
- **Program Committee Chairman or Co-Chairman**: “2010 International Conference on Logic Programming”, 2010, Edinburgh, UK, “Verification, Abstract Interpretation and Model Checking” VMCAI 2010, Madrid, Spain, “2008 Declarative Aspects of Multicore Programming” (San Francisco, CA, USA), “2008 International Symposium on Functional and Logic Programming (FLOPS’08)” (Ise, Japan), “2005 Practical Aspects of Declarative Programming Symposium” PADL’05 (Long Beach, CA, USA), “2002 Static Analysis Symposium”, SAS’02 (Madrid, Spain), “Parallel Symbolic Computing” track of EUROPAR’97, 1997 (Passau, Germany); “Programming Languages: Implementations, Logics, and Programs”, 1994 (Madrid, Spain) and 1995 (Utrecht, The Netherlands); “North American Conference on Logic Programming”, 1990, Austin, TX.
- **Conference Chair or Co-Chair**, “ACM Principles of Programming Languages” POPL 2010, Madrid, Spain, “International Conference on Logic Programming” ICLP 2006, Seattle, WA, USA, “2005 Symposium on Practical Aspects of Declarative Languages” PADL’05, Long Beach, CA, USA, “2002 Static Analysis Symposium” SAS’02, Madrid, Spain, Joint “Algebraic and Logic

*Programming*” and *Programming Languages: Implementations, Logics, and Programs*” conferences, 1994, Madrid, Spain, *First Spanish Conference on Declarative Programming*, PROLE’92, as well as a number of workshops since 1987.

- **Program Committee Member** for several conferences including PLDI’11, DAMP’11, ICLP’10, VMCAI’10, ICLP’08, SAS’08, ServiceWave’08, DAMP’08, FLOPS’08, TGC’07, SAS’07, TGC’06, FLOPS’06, PADL’06, ESOP’05, ICALP’05, PPSWR’05, AEPIA’05, PROLE’05, PADL’05, ICLP’04, EUMAS’04, PDCS’04, PROLE’04, PPDP’03, CP’03, PADL’03, EUMAS’03, PPDP’02, SAS’02, ICLP’01, SAS01, LOPSTR’01, POPL’00, LOPSTR’00, CMPP’00, ESOP’00, ECAI’00 CLPWS, PPDP’99, FLOPS’99, PADL’99, Irregular’99, POPL’97, ICLP’97, DPLE’97, CP’95, Europar’95, PLILP’94-95, PARLE’93, GULP-PRODE’92-94, PLILP’93-95, JICSLP’92, PAP’91, NACLP’90, ICLP’90, ICLP’89. **Session chairman** and **panelist** at several conferences and workshops.
- **Member** of ISTAG, the High-level Advisory Group of the Information Society Technologies Research Program (IST) of the European Union for Framework Program VI (2002-2006). President of several working groups. Co-authored several “white books” and policy reports (not included in publications list).
- **Panel Member** ACM 50th Anniversary Workshop on Future Directions in Computer Science, the ALP Strategic Directions Meeting, and at several EU Vth, VIth, and VIIth Framework Program strategic planning meetings (“New Directions for ICTs in FP7 meeting: Grand challenges for basic research,” “Next Generation GRIDs,” “Global Computing,” “Future Software Systems,” “Advanced Embedded Systems,” etc.).
- **Invited speaker** at the Danish EU presidency high-level meeting on the need for a European Research Council.
- **Acted as scientific expert**, at Spanish Senate hearings, on software patents and open source software. Expert and National Representative for the OECD on Dissemination of Scientific Data and Results.
- **Elected President** of the *Association for Logic Programming* (ALP) and the *Spanish Research Consortium in Informatics and Mathematics* (SpaRCIM, Spain’s member in ERCIM).
- **Elected member of the steering boards** of the *European Association for Programming Languages and Systems* (EAPLS), and (twice) of the ALP. Member of the Steering Committee of *ACM Principles of Programming Languages Conference* (POPL) (and POPL’2011 Most Influential Paper Award committee), *Verification, Abstract Interpretation and Model Checking Conference* (VMCAI), *Static Analysis Symposium* (SAS), *Functional and Logic Programming Symposium* (FLOPS), *ACM Principles and Practice of Declarative Programming Symposium* (PPDP), *Federated Logic Conference* (FLoC), and *Declarative Aspects of Multicore Programming Workshop* series.
- **Member of the Scientific Advisory Board** of the Spanish *National Research Council*, *ACM SIGLOG*, *IFCoLog*, and the *Initiative de Recherche et Innovation sur le Logiciel Libre* Center.
- **Best paper award**, at ICLP 2005 (with José Morales, Manuel Carro, and Germán Puebla).
- **Member of the winning team** at the 18th Prolog Programming contest, at ICLP 2011 in Lexington KY (with Michael Leuschel and Antonio Porto).
- Served on **tenure and promotion committees** or as a **department evaluator** for the K.U.Leuven (Belgium), University of Copenhagen (DIKU), T.U. Denmark (TUD), Cambridge U. (U.K.), Cyprus U., INRIA (France), Ecole Normale Supérieure (France), U. of Porto (Portugal), U. of Melbourne (Australia), New Mexico State U. (USA), Ecole Polytechnique (France), Negev U. (Israel), etc. and several Spanish universities. **President** of the Spanish national **research performance evaluation commission** for the areas of Computer Science and Electronics (CNEAI). Member of Department Evaluation Advisory Board at *Informatics Europe*.
- **Area Coordinator** (parallelism and implementation technologies) of the EU Networks of Excellence in Computational Logic COMPULOG and CoLogNet.

- **Invited Lecturer**, October 1996, in the distinguished visitor lecture series of New Mexico State University. Former **lecturer** on the “*IEEE Computer Society Distinguished Visitor Program*”.
- **Invited Scientist**, August-September 1988, at the Japanese Institute for fifth generation computing (ICOT) in Tokyo.
- **Developed a number of practical systems**, which are in the public domain, some of them with thousands of users, including the Ciao programming system, CiaoPP, LPdoc, the PiLLoW library, CP analyzers, PLAI, automatic parallelizers, &-Prolog, VisAndOr, etc.
- Participated in more than 50 **research projects**, in most of them as principal investigator, funded by the European Union and the Spanish Ministries, as well as NSF, MITI, etc. Also in several projects funded by industry.
- **Referee** for several journals (TOPLAS, Computing Reviews, TCS, TPLP/JLP, JSC, JPDC, FGCS, TODS, LOPLAS, IJPP, IEEE-TSE, JFGC, COMPLANG, JFLP, etc.), and conferences (POPL, SAS, IJCAI, ICLP, SLP, ILPS, PPDP, NAACP, JICSLP, ICPP, DCS, CONPAR, CP, ESOP, EUMAS, PAP, PARLE, PLILP, ALP, POPL, WSA, EUROPAR, GULP, ICALP, ICPA, PODS, ASIAN, CAEPIA, PACT, PASCO, PPSWR, etc.).
- **Evaluator** and panel member for several institutions: EU (ESPRIT, IST FP IV, V, VI), NSF, DARPA, DoD, ICOT, ISF, FULBRIGHT, the Australian, Belgian, Danish, Swedish, Spanish, and UK funding agencies, etc.
- **Faculty Adviser** for the ACM student chapter of the T.U. of Madrid.
- **Fulbright-Hays Scholarship** for Graduate Study in the U.S. (1983-84). **U. of Texas Graduate Research Grant** (1984-85). **MCC Graduate Research Grant** (1985-86).
- **Professional Societies**: ACM, IEEE (Computer Society), ALP (Assoc. for Logic Programming), EAPLS, ATI (Professional Computer Engineers' Assoc. of Spain), ERCIM/SpaRCIM, Informatics Europe, among others.
- **Member** of the Tau Beta Pi Engineering Honor Society.

### Students and Recent Collaborators

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#### *Graduated Ph.D. Students (+ graduating university/current location):*

Kalyan Muthukumar (U.T. Austin/IBM San Jose / Apple research), Yow-Yan Lin (UT Austin/Bellcore), María García de la Banda (T.U. Madrid/Melbourne University), Francisco Bueno (T.U. Madrid), Germán Puebla (T.U. Madrid), Pedro López García (T.U. Madrid), Manuel Carro (T.U. Madrid), Daniel Cabeza Gras (T.U. Madrid), Jorge Navas (U. of New Mexico/U. of Singapore), Amadeo Casas (U. of New Mexico/Microsoft), Mario Méndez (U. of New Mexico/U.T. Austin), José Francisco Morales (T.U. Madrid/Complutense U.).

#### *Most recent collaborators (outside the IMDEA SW Institute and UPM):*

P. Stuckey (Melbourne U., Australia), K. Marriott (Monash U., Australia), E. Pontelli (New Mexico S.U., USA), G. Gupta (New Mexico S.U., USA), S. Debray (U. of Arizona, USA), U. Montanari (U. Pisa, Italy), F. Rossi (U. Pisa, Italy), K. Shen (Imperial College, UK), M. Codish (Ben Gurion U., Israel), M. Bruynooghe (K.U. Leuven, Belgium), P. Deransart (INRIA, France), J. Maluszynski (Linköping U., Sweden), V. Santos-Costa (U. of Porto, Portugal), J. Gallagher (U. of Roskilde, Denmark), D. Kapur (U. of New Mexico, USA), D. Stefanovic (U. of New Mexico, USA).

**Personal data / contact**

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**Publications (in reverse chronological order)**

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**Articles in Refereed Journals:**

1. M. V. Hermenegildo, F. Bueno, M. Carro, P. López, E. Mera, J.F. Morales, G. Puebla. *An Overview of Ciao and its Design Philosophy*. Theory and Practice of Logic Programming, To Appear, Cambridge University Press, 2012. <http://arxiv.org/abs/1102.5497>.
2. P. Chico de Guzmán, A. Casas, M. Carro, M. Hermenegildo. *Parallel Backtracking with Answer Memoing for Independent And-Parallelism*. Theory and Practice of Logic Programming, 27th Int'l. Conference on Logic Programming (ICLP'11) Special Issue, Vol. 11, Num. 4–5, pages 555–574, Cambridge U. Press, July 2011. <http://arxiv.org/abs/1107.4724>.
3. G. Puebla, E. Albert, M. Hermenegildo. *Efficient Local Unfolding with Ancestor Stacks*. Theory and Practice of Logic Programming, Vol. 11, Num. 1, pages 1–32, Cambridge U. Press, January 2011.
4. E. Albert, P. Arenas, G. Puebla, M. Hermenegildo. *Reduced Certificates in Abstraction-Carrying Code*. Theory and Practice of Logic Programming, To Appear, 2011.
5. A. Stivala, P. J. Stuckey, M. García de la Banda, M. Hermenegildo, A. Wirth. *Lock-free Parallel Dynamic Programming*. Journal of Parallel and Distributed Computing, Vol. 70, pages 839–848, Elsevier, 2010.
6. P. López-García, F. Bueno, M. Hermenegildo. *Automatic Inference of Determinacy and Mutual Exclusion for Logic Programs Using Mode and Type Information*. New Generation Computing, Vol. 28, Num. 2, pages 117–206, Ohmsha, Ltd. and Springer, 2010.
7. D. Cabeza, M. Hermenegildo. *Non-Strict Independence-Based Program Parallelization Using Sharing and Freeness Information*. Theoretical Computer Science, Vol. 46, Num. 410, pages 4704–4723, Elsevier Science, October 2009.
8. E. Albert, G. Puebla, M. Hermenegildo. *Abstraction-Carrying Code: A Model for Mobile Code Safety*. New Generation Computing, Vol. 26, Num. 2, pages 171–204, March 2008.
9. M. Hermenegildo, G. Puebla, F. Bueno, P. López-García. *Integrated Program Debugging, Verification, and Optimization Using Abstract Interpretation (and The Ciao System Preprocessor)*. Science of Computer Programming, Vol. 58, Num. 1–2, pages 115–140, Elsevier Science, 2005.
10. G. Gupta, E. Pontelli, K. Ali, M. Carlsson, M. Hermenegildo. *Parallel Execution of Prolog Programs: a Survey*. ACM Transactions on Programming Languages and Systems, Vol. 23, Num. 4, pages 472–602, ACM Press, July 2001.

11. D. Cabeza, M. Hermenegildo. *Distributed WWW Programming using (Ciao) Prolog and the PiLLOW Library*. Theory and Practice of Logic Programming, Vol. 1, Num. 3, pages 251–282, Cambridge U. Press, May 2001.
12. M. Hermenegildo. *Parallelizing Irregular and Pointer-Based Computations Automatically: Perspectives from Logic and Constraint Programming*. Parallel Computing, Vol. 26, Num. 13–14, pages 1685–1708, Elsevier Science, December 2000.
13. M. García de la Banda, M. Hermenegildo, K. Marriott. *Independence in CLP Languages*. ACM Transactions on Programming Languages and Systems, Vol. 22, Num. 2, pages 269–339, ACM Press, March 2000.
14. M. Hermenegildo, G. Puebla, K. Marriott, P. Stuckey. *Incremental Analysis of Constraint Logic Programs*. ACM Transactions on Programming Languages and Systems, Vol. 22, Num. 2, pages 187–223, ACM Press, March 2000.
15. G. Puebla, M. Hermenegildo. *Abstract Multiple Specialization and its Application to Program Parallelization*. J. of Logic Programming. Special Issue on Synthesis, Transformation and Analysis of Logic Programs, Vol. 41, Num. 2&3, pages 279–316, Elsevier - North Holland, November 1999.
16. F. Bueno, M. García de la Banda, M. Hermenegildo. *Effectiveness of Abstract Interpretation in Automatic Parallelization: A Case Study in Logic Programming*. ACM Transactions on Programming Languages and Systems, Vol. 21, Num. 2, pages 189–238, ACM Press, March 1999.
17. K. Muthukumar, F. Bueno, M. García de la Banda, M. Hermenegildo. *Automatic Compile-time Parallelization of Logic Programs for Restricted, Goal-level, Independent And-parallelism*. Journal of Logic Programming, Vol. 38, Num. 2, pages 165–218, Elsevier - North-Holland, February 1999.
18. F. Bueno, M. Hermenegildo, U. Montanari, F. Rossi. *Partial Order and Contextual Net Semantics for Atomic and Locally Atomic CC Programs*. Science of Computer Programming, Vol. 30, pages 51–82, North-Holland, January 1998. Special CCP95 Workshop issue.
19. M. Codish, M. Bruynooghe, M. García de la Banda, M. Hermenegildo. *Exploiting Goal Independence in the Analysis of Logic Programs*. Journal of Logic Programming, Vol. 32, Num. 3, pages 247–261, Elsevier - North Holland, September 1997.
20. M. Hermenegildo. *Some Challenges for Constraint Programming*. The Constraints Journal, Vol. 2, Num. 1, pages 63–69, Kluwer Academic Publishers, 1997. Special issue on strategic directions in constraint programming.
21. P. Van Hentenryck, V. Saraswat, A. Borning, A. Brodski, P. Codognet, R. Dechter, M. Dincbas, E. Freuder, M. Hermenegildo, J. Jaffar, S. Kasif, J.-L. Lassez, D. McAllester, Ken McAloon, A. Macworth, U. Montanari, W. Older, J.-F. Puget, R. Ramakrishnan, F. Rossi, G. Smolka, R. Wachter. *Strategic Directions in Constraint Programming*. ACM Computing Surveys, Vol. 28, Num. 4, pages 701–726, ACM, December 1996. 50th Anniversary Issue on Strategic Directions in Computer Research.
22. M. García de la Banda, M. Hermenegildo, M. Bruynooghe, V. Dumortier, G. Janssens, W. Simoens. *Global Analysis of Constraint Logic Programs*. ACM Transactions on Programming Languages and Systems, Vol. 18, Num. 5, pages 564–615, ACM, September 1996.
23. M. Hermenegildo, M. Carro. *Relating Data-Parallelism and (And-) Parallelism in Logic Programs*. The Computer Languages Journal, Vol. 22, Num. 2/3, pages 143–163, Elsevier Science, July 1996.
24. E. Pontelli, G. Gupta, D. Tang, M. Carro, M. Hermenegildo. *Improving the Efficiency of Non-deterministic And-parallel Systems*. The Computer Languages Journal, Vol. 22, Num. 2/3, pages 115–142, Pergamon/Elsevier, July 1996.

25. P. López-García, M. Hermenegildo, S. K. Debray. *A Methodology for Granularity Based Control of Parallelism in Logic Programs*. Journal of Symbolic Computation, Special Issue on Parallel Symbolic Computation, Vol. 21, Num. 4–6, pages 715–734, Academic Press, 1996.
26. K. Shen, M. Hermenegildo. *High-level Characteristics of Or- and Independent And-parallelism in Prolog*. Int'l. Journal of Parallel Programming, Vol. 24, Num. 5, pages 433–478, Plenum Press, 1996.
27. M. Codish, A. Mulkers, M. Bruynooghe, M. García de la Banda, M. Hermenegildo. *Improving Abstract Interpretations by Combining Domains*. ACM Transactions on Programming Languages and Systems, Vol. 17, Num. 1, pages 28–44, ACM, January 1995.
28. M. Hermenegildo, F. Rossi. *Strict and Non-Strict Independent And-Parallelism in Logic Programs: Correctness, Efficiency, and Compile-Time Conditions*. Journal of Logic Programming, Vol. 22, Num. 1, pages 1–45, Elsevier - North Holland, 1995.
29. G. Gupta, M. Hermenegildo, V. Santos-Costa. *And-Or Parallel Prolog: A Recomputation Based Approach*. New Generation Computing, Vol. 11, Num. 3–4, pages 297–323, Springer Verlag, 1993.
30. M. Hermenegildo, R. Warren, S. K. Debray. *Global Flow Analysis as a Practical Compilation Tool*. Journal of Logic Programming, Vol. 13, Num. 4, pages 349–367, Elsevier - North Holland, August 1992.
31. K. Muthukumar, M. Hermenegildo. *Compile-time Derivation of Variable Dependency Using Abstract Interpretation*. Journal of Logic Programming, Vol. 13, Num. 2/3, pages 315–347, Elsevier - North-Holland, July 1992.
32. M. Hermenegildo, K. Greene. *The &-Prolog System: Exploiting Independent And-Parallelism*. New Generation Computing, Vol. 9, Num. 3,4, pages 233–257, Springer Verlag, 1991.
33. M. Hermenegildo, E. Tick. *Memory Referencing Characteristics and Caching Performance of AND-Parallel Prolog on Shared-Memory Architectures*. New Generation Computing, Vol. 7, Num. 1, pages 37–58, Springer Verlag, October 1989.
34. M. Hermenegildo, R. Warren. *Designing a High-Performance Parallel Logic Programming System*. Computer Architecture News, Special Issue on Parallel Symbolic Programming, Vol. 15, Num. 1, pages 43–53, ACM, March 1987.

#### Articles in Refereed Conferences:

1. J. F. Morales, M. V. Hermenegildo, R. Haemmerlé. *Modular Extensions for Modular (Logic) Languages*. 21th International Symposium on Logic-Based Program Synthesis and Transformation (LOPSTR'11), July 2011. To appear.
2. D. Ivanović, M. Carro, M. Hermenegildo. *Automated Attribute Inference in Complex Service Workflows Based on Sharing Analysis*. Proceedings of the 8th IEEE Conference on Services Computing SCC 2011, 8 pages, July 2011. To Appear.
3. E. Mera, T. Trigo, P. López-García, M. Hermenegildo. *Profiling for Run-Time Checking of Computational Properties and Performance Debugging*. Practical Aspects of Declarative Languages (PADL'11), LNCS, Vol. 6539, pages 38–53, Springer-Verlag, January 2011.
4. R. Haemmerlé, P. López, M. Hermenegildo. *CLP Projection for Constraint Handling Rules*. Proceedings of the 13th International ACM SIGPLAN Conference on Principles and Practice of Declarative Programming, ACM Press, 2011.
5. D. Ivanović, M. Carro, M. Hermenegildo. *Automatic Fragment Identification in Workflows Based on Sharing Analysis*. Service-Oriented Computing – ICSOC 2010, LNCS, Num. 6470, 15 pages, Springer Verlag, 2010.

6. L. Scandolo, C. Kunz, G. Barthe, M.V. Hermenegildo. *Program Parallelization using Synchronized Pipelining*. Proceedings of the 19th International Symposium on Logic-based Program Synthesis and Transformation (LOPSTR'09), LNCS, Num. 6037, pages 173–187, Springer, 2010.
7. D. Ivanović, M. Carro, M. Hermenegildo. *Towards Data-Aware QoS-Driven Adaptation for Service Orchestrations*. Proceedings of the 2010 IEEE International Conference on Web Services (ICWS 2010), Miami, FL, USA, 5-10 July 2010, IEEE, 2010.
8. E. Mera, P. López-García, M. Hermenegildo. *Integrating Software Testing and Run-Time Checking in an Assertion Verification Framework*. 25th International Conference on Logic Programming (ICLP'09), LNCS, Num. 5649, pages 281–295, Springer-Verlag, July 2009.
9. P. Chico de Guzmán, M. Carro, M. V. Hermenegildo. *A Tabling Implementation Based on Variables with Multiple Bindings*. International Conference on Logic Programming (ICLP 2009), LNCS, Num. 5649, 15 pages, Springer-Verlag, July 2009.
10. M. Marron, D. Kapur, M. Hermenegildo. *Identification of Logically Related Heap Regions*. ISMM'09: Proceedings of the 8th international symposium on Memory management, ACM Press, June 2009.
11. P. Chico de Guzmán, M. Carro, M. Hermenegildo. *Towards a Complete Scheme for Tabled Execution Based on Program Transformation*. 11th International Symposium on Practical Aspects of Declarative Languages (PADL'09), LNCS, Num. 5418, pages 224–238, Springer-Verlag, January 2009.
12. E. Trias, J. Navas, E. S. Ackley, S. Forrest, M. Hermenegildo. *Negative Ternary Set-Sharing*. International Conference on Logic Programming, ICLP, LNCS, Num. 5366, pages 301–316, Springer-Verlag, December 2008.
13. P. Chico de Guzmán, M. Carro, M. V. Hermenegildo. *A Sketch of a Complete Scheme for Tabled Execution Based on Program Transformation*. Int'l. Conference on Logic Programming, LNCS, Vol. 5366, pages 795–800, Springer Verlag, December 2008. Short paper.
14. A. Casas, M. Carro, M. Hermenegildo. *A High-Level Implementation of Non-Deterministic, Unrestricted, Independent And-Parallelism*. 24th International Conference on Logic Programming (ICLP'08), LNCS, Vol. 5366, pages 651–666, Springer-Verlag, December 2008.
15. M. Marron, M. Méndez-Lojo, M. Hermenegildo, D. Stefanovic, D. Kapur. *Sharing Analysis of Arrays, Collections, and Recursive Structures*. ACM WS on Program Analysis for Software Tools and Engineering (PASTE'08), ACM, November 2008.
16. M. Marron, D. Kapur, D. Stefanovic, M. Hermenegildo. *Identification of Heap-Carried Data Dependence Via Explicit Store Heap Models*. 21st Int'l. WS on Languages and Compilers for Parallel Computing (LCPC'08), LNCS, Springer-Verlag, August 2008.
17. J. Morales, M. Carro, M. Hermenegildo. *Comparing Tag Scheme Variations Using an Abstract Machine Generator*. 10th Int'l. ACM SIGPLAN Symposium on Principles and Practice of Declarative Programming (PPDP'08), pages 32–43, ACM Press, July 2008.
18. E. Mera, P. López-García, M. Carro, M. Hermenegildo. *Towards Execution Time Estimation in Abstract Machine-Based Languages*. 10th Int'l. ACM SIGPLAN Symposium on Principles and Practice of Declarative Programming (PPDP'08), pages 174–184, ACM Press, July 2008.
19. M. Marron, M. Hermenegildo, D. Kapur, D. Stefanovic. *Efficient Context-Sensitive Shape Analysis with Graph-Based Heap Models*. International Conference on Compiler Construction (CC 2008), Lecture Notes in Computer Science, 15 pages, Springer, April 2008.
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#### Invited Papers and Tutorials:

1. M. V. Hermenegildo, F. Bueno, M. Carro, P. López-García, R. Haemmerlé, E. Mera, J. F. Morales, G. Puebla. *An Overview of the Ciao System*. Proc. of RuleML-Europe 2011, LNCS, Num. 6826, pages 2–3, Springer-Verlag, July 2011. (abstract of invited talk).
2. M. Hermenegildo, T. Schaub. *Introduction to the 26th Int'l. Conference on Logic Programming (ICLP'10) Special Issue*. Vol. 10, Num. 4–6, pages 361–364, Cambridge University Press, July 2010.
3. M. Hermenegildo, T. Schaub. *Introduction to Technical Communications of the 26th Int'l. Conference on Logic Programming (ICLP'10)*. Technical Communications of the 26th Int'l. Conference on Logic Programming (ICLP'10), Leibniz International Proceedings in Informatics (LIPIcs), Vol. 7, pages 8–11, Schloss Dagstuhl–Leibniz-Zentrum fuer Informatik, July 2010.
4. M. Hermenegildo, F. Bueno, A. Casas, J. Navas, E. Mera, M. Carro, P. López-García. *Automatic Granularity-Aware Parallelization of Programs with Predicates, Functions, and Constraints*. DAMP'07, ACM SIGPLAN Workshop on Declarative Aspects of Multicore Programming, pages 1–1, ACM, January 2007. (abstract of invited talk).
5. G. Puebla, E. Albert, P. Arenas, M. Hermenegildo. *On Abstraction-Carrying Code and Certificate-Size Reduction*. 1st International Workshop on Emerging Applications of Abstract Interpretation (EAAI 2006), 15 pages, March 2006.
6. G. Puebla, E. Albert, M. Hermenegildo. *Abstract Interpretation-based Verification/Certification in the CiaoPP System*. Mobile Code Safety and Program Verification Using Computational Logic Tools (MoveLog'05), 9 pages, October 2005.
7. M. Hermenegildo, E. Albert, P. López-García, G. Puebla. *Abstraction Carrying Code and Resource-Awareness*. 7th ACM-SIGPLAN International Symposium on Principles and Practice of Declarative Programming (PPDP'05), pages 1–11, ACM Press, 2005.

8. M. Hermenegildo, E. Albert, P. López-García, G. Puebla. *Some Techniques for Automated, Resource-Aware Distributed and Mobile Computing in a Multi-Paradigm Programming System*. Proc. of EURO-PAR 2004, LNCS, Num. 3149, pages 21–37, Springer-Verlag, August 2004.
9. G. Puebla, M. Hermenegildo. *Abstract Specialization and its Applications*. ACM Partial Evaluation and Semantics based Program Manipulation (PEPM'03), pages 29–43, ACM Press, June 2003. Invited talk.
10. M. Hermenegildo, G. Puebla, F. Bueno, P. López-García. *Program Development Using Abstract Interpretation (and The Ciao System Preprocessor)*. 10th International Static Analysis Symposium (SAS'03), LNCS, Num. 2694, pages 127–152, Springer-Verlag, June 2003.
11. M. Hermenegildo, G. Puebla, F. Bueno, P. López-García. *Abstract Verification and Debugging of Constraint Logic Programs*. Recent Advances in Constraints, LNCS, Num. 2627, pages 1–14, Springer-Verlag, January 2003.
12. M. Hermenegildo, F. Bueno, G. Puebla, P. López-García. *Program Debugging and Validation Using Semantic Approximations and Partial Specifications*. 29 th. International Colloquium on Automata, Languages, and Programming (ICALP), LNCS, Num. 2380, pages 69–72, Springer-Verlag, July 2002.
13. M. Hermenegildo. *Parallelizing Irregular and Pointer-Based Computations Automatically: Results in Logic and Constraint Programming*. Constructive Methods for Parallel Programming, Advances in Computation: Theory and Practice, 1 pages, Nova Science, 2002. (abstract of invited talk).
14. F. Bueno, D. Cabeza, M. Carro, J. Correias, J. Gómez, M. Hermenegildo, P. López, G. Puebla, C. Vaucheret. *Agent Programming in Ciao Prolog*. 10 th. Portuguese Conference on Artificial Intelligence (EPIA), LNAI, Num. 2258, 2 pages, Springer-Verlag, December 2001.
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