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Juan Antonio Navarro Pérez

- interests** Separation logic, automated reasoning, and theorem proving. Program analysis and verification, artificial intelligence, formalization of mathematics, logic.
- academic experience** Queen Mary, University of London
2012–present. Lecturer in Computer Science
- research experience** Technische Universität München
2010–2011. Visiting researcher at the Faculty of Computer Science
National System of Researchers in Mexico (SNI)
2010–present. Member Level I
Max Planck Institute for Software Systems (MPI-SWS)
2008–2009. Postdoctoral research at the Verification Systems Group
- education** The University of Manchester
2004–2007. Doctor of Philosophy in Computer Science
Universidad de las Américas, Puebla, Mexico
2003–2005. Master in Computer Science
Universidad de las Américas, Puebla, Mexico
1999–2003. Bachelor in Mathematics
- full list of publications** Journal papers
- [1] M. Cha, J. A. Navarro Pérez, and H. Haddadi. “The Spread of Media Content Through Blogs”. In: Social Network Analysis and Mining 1 (2011).
 - [2] N. P. Lopes, J. A. Navarro Pérez, A. Rybalchenko, and A. Singh. “Applying Prolog to Develop Distributed Systems”. In: Theory and Practice of Logic Programming, 26th Int’l. Conference on Logic Programming (ICLP’10) Special Issue 10.4–6 (July 2010). Ed. by M. Hermenegildo and T. Schaub, pp. 681–696.

- [3] J. A. Navarro Pérez and A. Voronkov. “Planning with Effectively Propositional Logic”. Collection of Papers Dedicated to Harald Ganzinger’s Memory. 2008.
- [4] M. Osorio, J. A. Navarro Pérez, and J. Arrazola. “Applications of Intuitionistic Logic in Answer Set Programming”. In: Theory and Practice of Logic Programming 4.3 (May 2004). Ed. by M. Bruynooghe, pp. 325–354.
- [5] M. Osorio, J. A. Navarro Pérez, and J. Arrazola. “Safe Beliefs for Propositional Theories”. In: Annals of Pure and Applied Logic 134.1 (June 2005). Ed. by R. de Queiroz, B. Poizat, and S. Artemov, pp. 63–82.
- [6] M. Osorio, J. A. Navarro Pérez, J. Arrazola, and V. Borja Macías. “Ground Nonmonotonic Modal Logic S5: New Results”. In: Journal of Logic and Computation 15.5 (Oct. 2005), pp. 787–813.
- [7] M. Osorio, J. A. Navarro Pérez, J. Arrazola, and V. Borja Macías. “Logics with Common Weak Completions”. In: Journal of Logic and Computation 16.6 (Dec. 2006), pp. 867–890.

Conference papers

- [8] J. A. Navarro Pérez and A. Rybalchenko. “Operational Semantics for Declarative Networking”. In: PADL’09: Proceedings of the Eleventh International Symposium on Practical Aspects of Declarative Languages. Lecture Notes in Computer Science 5418. Savannah, GA, USA: Springer, Jan. 2009, pp. 76–90.
- [9] J. A. Navarro Pérez, A. Rybalchenko, and A. Singh. “Cardinality Abstraction for Declarative Networking Applications”. In: CAV’09: Proceedings of the 21st International Conference on Computer Aided Verification. Vol. 5643. Lecture Notes In Computer Science. Grenoble, France: Springer, June 2009, pp. 584–598.
- [10] J. A. Navarro Pérez and A. Voronkov. “Encodings of Bounded LTL Model Checking in Effectively Propositional Logic”. In: CADE-21: Proceedings of the 21st International Conference on Automated Deduction. Lecture Notes in Artificial Intelligence 4603. Bremen, Germany: Springer, 2007, pp. 346–361.

- [11] J. A. Navarro Pérez and A. Voronkov. “Generation of Hard Non-Clausal Random Satisfiability Problems”. In: AAAI’05/IAAI’05: Proceedings of the Twentieth National Conference on Artificial Intelligence and the Seventeenth Conference on Innovative Applications of Artificial Intelligence. Pittsburgh, PA, USA: AAAI Press, July 2005.
- [12] J. A. Navarro Pérez and A. Voronkov. “Proof Systems for Effectively Propositional Logic”. In: IJCAR’08: Proceedings of the 4th International Joint Conference on Automated Reasoning. Lecture Notes in Computer Science 5195. Sydney, Australia: Springer, Aug. 2008, pp. 426–440.
- [13] M. Osorio and J. A. Navarro Pérez. “Answer Set Programming and S4”. In: IBERAMIA’04: Proceedings of the IX Ibero-American Conference on Artificial Intelligence. Lecture Notes in Computer Science 3315. Puebla, México: Springer, Nov. 2004.
- [14] M. Osorio and J. A. Navarro Pérez. “Decision Problem of Substrings in Context Free Languages”. In: CIC-X: Memorias del X Congreso Internacional de Computación. Ed. by J. H. Sossa Azuela, H. Freeman, and C. Vizcaíno. CIC-IPN, 2001, pp. 239–249.
- [15] M. Osorio, J. A. Navarro Pérez, and J. Arrazola. “A Logical Approach for A-Prolog”. In: WoLLIC’02: Proceedings of the 9th Workshop on Logic, Language, Information and Computation. Ed. by R. de Queiroz, L. C. Pereira, and E. H. Haeusler. Vol. 67. Electronic Notes in Theoretical Computer Science. Rio de Janeiro, Brazil: Elsevier, 2002, pp. 265–275.
- [16] M. Osorio, J. A. Navarro Pérez, and J. Arrazola. “Equivalence in Answer Set Programming”. In: LOPSTR’01: Proceedings of the 11th International Workshop on Logic Based Program Synthesis and Transformation. Ed. by A. Pettorossi. Lecture Notes in Computer Science 2372. Paphos, Cyprus: Springer, Nov. 2001, pp. 57–75.
- [17] A. Rybalchenko and J. A. Navarro Pérez. “Separation Logic + Superposition Calculus = Heap Theorem Prover”. In: PLDI’11: Proceedings of the 32nd ACM SIGPLAN conference on Programming language design and implementation. San Jose, CA, USA: ACM Press, 2011.

Workshop papers

- [18] M. Cha, J. A. Navarro Pérez, and H. Haddadi. “Flash Floods and Ripples: The Spread of Media Content through the Blogosphere”. In: Proceedings of the ICWSM 2009 Data Challenge Workshop. Best paper award. 2009.
- [19] L. A. Montiel and J. A. Navarro Pérez. “Computing Preferred Safe Beliefs”. In: LA-NMR’04: Proceedings of the First Latin America Workshop on Non-Monotonic Reasoning. Ed. by M. Osorio and A. Provetti. CEUR Workshop Proceedings 92. México, D.F., México, Apr. 2004.
- [20] J. A. Navarro Pérez. “Answer Set Programming through G_3 Logic”. In: ESSLLI’02: Student Session of the Seventh European Summer School in Logic, Language and Information. Ed. by M. Nissim. Trento, Italy, Aug. 2002.
- [21] J. A. Navarro Pérez. “Encodings of Bounded LTL Model Checking in Effectively Propositional Logic”. In: ARW’07: Proceedings of the Workshop on Automated Reasoning. London, U.K., Apr. 2007.
- [22] J. A. Navarro Pérez. “Generation of Hard Non-Clausal Random Satisfiability Problems”. In: ARW’05: Proceedings of the Workshop on Automated Reasoning. Edinburgh, Scotland, July 2005.
- [23] J. A. Navarro Pérez. “Properties of Translations for Logic Programs”. In: ESSLLI’03: Student Session of the Eighth European Summer School in Logic, Language and Information. Ed. by B. ten Cate. Vienna, Austria, Aug. 2003.
- [24] J. A. Navarro Pérez. “Translations to Propositional Satisfiability”. In: ARW’06: Proceedings of the Workshop on Automated Reasoning. Bristol, U.K., Apr. 2006.
- [25] M. Osorio, J. A. Navarro Pérez, and J. Arrazola. “Si-logics for Non-Monotonic Reasoning”. In: Proceedings of the Workshop on Logic and Computation, held at the Mexican International Conference on Artificial Intelligence (MICAI’02). Mérida, México, Apr. 2002.

Extended abstracts

- [26] J. A. Navarro Pérez and A. Voronkov. “[Encodings of Problems in Effectively Propositional Logic](#)”. In: SAT’07: Proceedings of the 10th International Conference on Theory and Applications of Satisfiability

Testing. Lecture Notes in Computer Science 4501. Invited talk given by second author. Lisbon, Portugal: Springer, 2007, p. 3.

- [27] M. Osorio and J. A. Navarro Pérez. “Modal Logic S5₂ and FOUR (abstract)”. In: ASL’03: Proceedings of the 2003 Annual Meeting of the Association for Symbolic Logic. Chicago, IL, USA, June 2003.
- [28] M. Osorio, J. A. Navarro Pérez, and J. Arrazola. “Consistent neg-extensions of Superintuitionistic Theories (abstract)”. In: LC’02: Proceedings of the 2002 Logic Colloquium. Münster, Germany, Aug. 2002.
- [29] M. Osorio, J. A. Navarro Pérez, and J. Arrazola. “Debugging in A-Prolog: A Logical Approach (abstract)”. In: ICLP’02: Proceedings of the 18th International Conference on Logic Programming. Ed. by P. J. Stuckey. Lecture Notes in Computer Science 2401. Copenhagen, Denmark: Springer, Aug. 2002, pp. 482–483.

Theses

- [30] J. A. Navarro Pérez. “Encoding and Solving Problems in Effectively Propositional Logic”. PhD thesis. The University of Manchester, 2007.
- [31] J. A. Navarro Pérez. “Lógica Aplicada a Answer Sets”. Bachelor’s Thesis. Universidad de las Américas, Puebla, 2003.
- [32] J. A. Navarro Pérez. “Semantics for Nonmonotonic Reasoning: A Logical Approach”. MA thesis. Universidad de las Américas, Puebla, 2006.

work
dissemination

Talks

- Separation logic + Superposition calculus = Heap theorem prover
2011. PLDI: Programming Language Design and Implementation
- Applying Prolog to develop distributed systems
2010. ICLP: International Conference on Logic Programming
- Operational Semantics for Declarative Networking
2009. PADL: Eleventh International Symposium on Practical Aspects of Declarative Languages
- Encodings of bounded LTL model checking
2007. CADE: 21st International Conference on Automated Deduction
- 2007. MPI-SWS: Max Planck Institute for Software Systems
- Computing preferred safe beliefs

2004. LA-NMR: First Latin American Workshop on Non-Monotonic Reasoning

Properties of translations for logic programs

2003. ESSLLI: Student Session of the Eight European Summer School in Logic, Language and Information

Answer set programming through G_3 logic

2002. ESSLLI: Student Session of the Seventh European Summer School in Logic, Language and Information

Equivalence in answer set programming

2001. LOPSTR: 11th International Workshop on Logic Based Program Synthesis and Transformation

Decision problem of substrings in context free languages

2001. CIC: X Congreso Internacional de Computación

Posters

Encodings of bounded LTL model checking in effectively propositional logic

2007. ARW: Workshop on Automated Reasoning

Translations to propositional satisfiability

2006. ARW: Workshop on Automated Reasoning

Generation of hard non-clausal random satisfiability problems

2005. AAAI: Twentieth National Conference on Artificial Intelligence

2005. ARW: Workshop on Automated Reasoning

prizes and
awards

Selected prizes and awards

2006. Best score at the Master in Computer Science, Universidad de las Américas, Puebla

2006. Magna Cum Laude distinction at the Master in Computer Science, Universidad de las Américas, Puebla

2005. Scholarship to study a graduate degree at The University of Manchester awarded by the Mexican Council of Science and Technology (CONACYT)

2004. Honorable Mention at the International Collegiate Programming Contest, ACM World Finals

2004. Third Place at the Java Challenge of the International Collegiate Programming Contest, ACM World Finals

2003. 1st Place at the México & Central América ACM Programming Contest

2003. Best score at the Bachelor in Mathematics, Universidad de las Américas, Puebla

2003. Magna Cum Laude distinction at the Bachelor in Mathematics,
Universidad de las Américas, Puebla
2003. Honorable Mention at the International Collegiate Programming
Contest, ACM World Finals
2002. 1st Place at the México & Central América ACM Programming
Contest
- 2000–2002. Member of the List of the Dean at the School of Science,
Universidad de las Américas
1999. 7th Place at the México & Central América ACM Programming
Contest
1998. First Place at the National Contest of the 12th Mexican
Mathematics Olympiad
1997. Second Place at the National Contest of the 11th Mexican
Mathematics Olympiad

professional
service

Thesis reviews

2009. Fundamentos Matemáticos de la Semántica P-estable en
Programación Lógica
By José Luis Carballido for the degree of Doctor in Mathematics
Benemérita Universidad Autónoma de Puebla, México
2009. Sobre Algunas Clases Polinomiales de Satisfacibilidad Proposicional
By José Inácio de Jesus Rodrigues for the degree of Doctor in
Mathematics
Universidad de Sevilla, España

Program committee member

- 2012, 2011. CONIELECOMP: International Conference on Electronics,
Communications and Computers
- 2008, 2011. ENC: Mexican International Conference on Computer Science
- 2009, 2010. MICA: Mexican International Conference on Artificial
Intelligence
- 2006–2011. LANMR: Latin American Workshop on Non-Monotonic
Reasoning
2006. WoLLIC: Workshop in Logic, Language and Computation

Journal article reviews

2010. TOPLAS: Transactions on Programming Languages and Systems
2010. TPLP: Theory and Practice of Logic Programming
- 2009, 2010. RIIA: Revista Iberoamericana de Inteligencia Artificial
2008. JAR: Journal of Automated Reasoning

External reviewer for conferences

2009, 2011. LPNMR: International Conference on Logic Programming and Non-monotonic Reasoning

2009. TASE: Theoretical Aspects of Software Engineering Conference

2009. VMCAI: Verification, Model Checking, and Abstract Interpretation

2008. LPAR: Logic Programming Artificial Intelligence and Reasoning

2007, 2008. MICAI: Mexican International Conference on Artificial Intelligence

2007. ASP: Answer Set Programming: Advances in Theory and Implementation

2007. CADE: Conference on Automated Deduction

Other review service

2011. Reviewer for applications of national postdoctoral internships funded by CONACYT in Mexico

Technical editor

2002. Proceedings of the 7th International Conference on Parametric Optimization and Related Topics

Volunteer work

2010–present. Author and main contributor of [Pedazos de Carbono](#), a science popularizing blog in Spanish

2010. Early supporter and moderator pro tempore of the [TeX Stack Exchange](#) site for questions and answers about \TeX , \LaTeX and related systems

2002. Organizer of the 6th Conference Cycle in Physics and Mathematics; and the 1st Conference Mini-cycle for lectures given by students

2001–2002. Member of the Physics and Mathematics Student Society and member of the Student Union of Universidad de las Américas (CEUDLA)

1999–2000. Trainer of the teams representing the state of Puebla at the National Contests of the Mexican Mathematics Olympiad

Occasional judge, problem submitter and reviewer for regional and national ACM Programming Contests in Mexico

As part of my social service, while studying as undergraduate at Universidad de las Américas, one of my activities was to give talks to students in Cholula and Puebla in order to promote the study of science

skills and
competences

Languages

English, Spanish. Basic knowledge of German.

Programming skills

Fluent in imperative programming languages (C/C++, Java, Pascal, Fortran), scripting and web languages (Perl, PHP, Python, Ruby), as well as domain specific languages (Mathematica, R, Matlab). Ample experience in logic and functional programming languages (Prolog, Haskell, OCaml). Expert in the \LaTeX typesetting system. Very good knowledge of standard UNIX tools, regular expressions, etc. Good experience with web technologies (HTML, CSS, XML, JavaScript), databases (SQLite, MySQL), and social media integration (Twitter, Facebook apps). Ability to easily learn new programming languages and other technologies.

General interests

Programming, mathematics, science and technology. Science popularizing.