

Paul Tarau

Contact information:

Paul Tarau, Ph.D., Associate Professor

Dept. of Computer Science and Engineering, University of North Texas

P.O. Box 311366, Denton, Texas 76203, USA

Phone: +1 (940) 565-2806 and +1 (940) 565-2767 (office), +1 (940) 300-7171 (home)

Fax: +1 (940) 565-2799

E-mail: tarau@cs.unt.edu

WWW: <http://www.cs.unt.edu/~tarau>

Education:

- Ph.D. - Computer Science 1990 - Université de Montreal
- M.Sc. - Computer Science 1986 - Université Laval (Quebec)
- B.Sc. - Mathematics 1975 - University of Bucharest

Citizenship

USA+Canada

Positions held:

- Tenured Associate Professor at Univ. of North Texas, from Sept 1998
- Tenure Track Associate Professor at Louisiana Tech University, from Dec 1997- to Aug 1998
- Tenured Associate Professor since 1994 at Univ. of Moncton
- Tenured Assistant Professor since 1989 at Univ. of Moncton
- tenure track teaching position at University of Moncton since 1986

Research

Research Philosophy

I am a somewhat atypical researcher who migrates relatively freely between research fields. The following are some of the fields where my work has resulted in high impact publications (with citation counts of most influential papers in parenthesis):

- natural language processing (240, 74, 34)
- program transformations and implementation of logic programming languages (70, 23)
- agent infrastructures, mobile code, distributed programming models, NLP-enabled knowledge-based chat agents (69, 46, 27)
- compiler writing, runtime systems, memory management (47, 23)
- logic programming and logic grammars (48, 47, 31)

It is a spiral approach - synergies are found and exploited in solving problems in a new field or when revisiting a familiar one. While aware of the status of being a “visitor”, a large majority of my research papers are attempts to “paradigm shifting” rather than “paradigm consolidation” - i.e. they are typically high-risk/high reward exploratory research work.

For instance, my newest research interest is a sharp departure from everything I have worked previously. 12 out of my 13 papers published in 2009 and 2010 are focussed on modeling foundational aspects of finite mathematics driven by an effort to provide a unified theory of fundamental data types through shared axiomatizations and bijective data transformations. Literate programming - an executable specification of the concepts discussed - is a distinctive feature of these 12 papers allowing reviewers to easily test their technical correctness.

A recent NSF grant and the acceptance of the 12 papers at competitive international conferences seem to validate this entirely new research direction.

Research Publication Impact

Here are, as shown in Sept 2011 with Hertzling’s “Publish or Perish” software (that uses 1908 total citations from the Google Scholar database) the impact indicators of my past research papers.

- **h-index** 21
- **g-index** 37
- **hc-index** 12
- **hI-index** 10.50
- **hI,norm** 15
- **e-index** 25.79

For comparison purposes, my **h-index** (the most widely used one), counting **21** papers with at least **21** citations each, is second highest in our department (after Dr. Rada Mihalcea’s). The highest ranked paper that I have co-authored is [1], currently at **324** citations.

Currently Active Research Threads

- Declarative Modeling of Finite Mathematics (Shared Axiomatizations, Computations with Types, Hereditarily Finite Sets and Functions, Bijective Data Type Transformations, Efficient Gödel numberings, Ranking/Unranking functions, Self-delimiting codes)
- Design and Implementation of Declarative Programming Languages
- Natural Language Processing, Logic Programming and Logic Grammars
- Java and Prolog based Agent Infrastructures
- Compilers, Run-time Systems and Automatic Memory Management
- Exact Circuit Synthesis Algorithms

Publications

- Refereed Journal papers: [2, 3] [4] [5, 6, 7] [8, 9] [10, 11, 12, 13]
- Refereed International Conferences and Workshops: **2012:** [14, 15] **2011:** [16, 17, 18, 19, 20, 21, 22, 23] **2010:** [24, 25, 26, 27, 28, 29] **2009:** [30, 30, 31, 32, 33, 34], **2008:** [35, 36, 37, 38, 39, 40] **2007 and before:** [41, 42], [43, 44, 45, 46, 47] [48, 49, 50, 51, 52, 53, 1, 54, 55, 56] [57, 58, 59, 60, 61] [62] [63], [64, 65, 66, 67, 68, 69] [70, 71, 72, 73, 74] [75, 76, 77, 78, 79] [80, 81, 82, 83, 84, 85, 86, 87, 88] [89, 90, 91, 92, 93] [94, 95, 96, 97, 98, 99, 100, 101, 102, 103] [104, 105, 106, 107, 108, 109, 110] [111] [112, 113, 114, 115, 116, 117] [118] [119, 120, 121] [122] [123]
- Refereed National Conferences and Workshops: [124, 125, 126]
- Other refereed publications: [77, 127, 128, 129, 130, 131, 132]
- PhD Thesis: [133]
- Invited talks: INAP'96 Keynote Speech: [134] ILPS'97 Advanced Tutorial: [135], WWW6 LP'97 [136], JICSLP'98 Implementation of (C)LP Languages Workshop T[137] JELIA'98 Invited Talk [138] AGP'99 Invited Talk
- Other publications: [139, 140, 141, 142, 143, 144, 145, 146] [147, 148, 149, 150, 151, 152, 153] [154, 136, 155, 156, 157, 158, 159, 160, 161, 162, 163, 164, 165, 166, 167, 168, 169, 170]
- Proceedings Edited [171, 172, 173, 174, 175, 176]

- [1] Rada Mihalcea and Paul Tarau. TextRank: Bringing Order into Texts. In *Proceedings of the Conference on Empirical Methods in Natural Language Processing (EMNLP 2004)*, Barcelona, Spain, July 2004.
- [2] Paul Tarau. The BinProlog Experience: Architecture and Implementation Choices for Continuation Passing Prolog and First-Class Logic Engines. *Theory and Practice of Logic Programming*, (accepted Feb 2, 2011), 2011.
- [3] Paul Tarau. “Everything Is Everything” Revisited: Shapeshifting Data Types with Isomorphisms and Hylomorphisms. *Complex Systems*, (18), 2010.
- [4] Paul Tarau and Veronica Dahl. High-Level Networking with Mobile Code and First Order AND-Continuations. *Theory and Practice of Logic Programming*, 1(3):359–380, May 2001. Cambridge University Press.
- [5] Paul Tarau, Koen De Bosschere, Veronica Dahl, and Stephen Rochefort. LogiMOO: an Extensible Multi-User Virtual World with Natural Language Control. *Journal of Logic Programming*, 38(3):331–353, March 1999.
- [6] Paul Tarau. Multi-Engine Horn Clause Prolog. *Electronic Notes in Theoretical Computer Science*, 30(3), 1999.
- [7] V. Dahl, P. Tarau, S. Rochefort, and M. Scurtescu. A Spanish Interface to LogiMoo- towards multi-lingual virtual worlds. *Informatica*, (2), June 1999.
- [8] V. Dahl, P. Tarau, P. Accuosto, S. Rochefort, and M. Scurtescu. Assumption Grammars for Knowledge Based Systems. *Informatica*, (4), 1998. Special Issue on NLP and Agent Communication.
- [9] Veronica Dahl and Paul Tarau. From Assumptions to Meaning. *Canadian Artificial Intelligence*, (42), April 1998.

- [10] P. Tarau, K. De Bosschere, and Bart Demoen. On Delphi Lemmas And other Memoing Techniques For Deterministic Logic Programs. *Journal of Logic Programming*, 30(2):145–163, February 1997.
- [11] Paul Tarau, Koen De Bosschere, and Bart Demoen. Partial Translation: Towards a Portable and Efficient Prolog Implementation Technology. *Journal of Logic Programming*, 29(1–3):65–83, November 1996.
- [12] K. De Bosschere and P. Tarau. Blackboard-based Extensions in Prolog. *Software — Practice and Experience*, 26(1):49–69, January 1996.
- [13] Paul Tarau. Une machine abstraite optimisée à passage de continuations: l’expérience BinProlog. *Technique et Science Informatique*, 14(6):713–731, 1995.
- [14] Paul Tarau. Declarative Specification of Tree-based Symbolic Arithmetic Computations. In *Proceedings of PADL’2012, Practical Aspects of Declarative Languages*, Philadelphia, PA, January 2012. to appear.
- [15] Paul Tarau and David Haraburda. On Computing with Types. In *Proceedings of SAC’12, ACM Symposium on Applied Computing, PL track*, Riva del Garda (Trento), Italy, March 2012. to appear.
- [16] Paul Tarau. Concurrent Programming Constructs in Multi-engine Prolog: Parallelism just for the cores (and not more!). In Manuel Carro and John H. Reppy, editors, *DAMP*, pages 55–64. ACM, 2011.
- [17] Paul Tarau. Coordination and Concurrency in Multi-engine Prolog. In Wolfgang De Meuter and Gruiá-Catalin Roman, editors, *COORDINATION*, volume 6721 of *Lecture Notes in Computer Science*, pages 157–171, Berlin Heidelberg, June 2011. Springer.
- [18] Paul Tarau. Integrated Symbol Table, Engine and Heap Memory Management in Multi-engine Prolog. In Hans-Juergen Boehm and David F. Bacon, editors, *ISMM*, pages 129–138. ACM, 2011.
- [19] Paul Tarau and Brenda Luderman. Emulating Boolean Computations with Pairing and Unpairing Functions. In *Computability in Europe, Models of Computation in Context, CiE 2011*, Sofia, Bulgaria, July 2011. <http://cie2011.fmi.uni-sofia.bg/?q=node/32>.
- [20] Paul Tarau. Emulating Primality with Multiset representations of Natural Numbers. In Antonio Cerone and Pekka Pihlajasaari, editors, *Proceedings of 8th International Colloquium on Theoretical Aspects of Computing, ICTAC 2011*, pages 218–238, Johannesburg, South Africa, September 2011. Springer, LNCS 6916.
- [21] Paul Tarau. Computing with Hereditarily Finite Sequences. In *CICLOPS’2011*, Lexington, KY, July 2011.
- [22] Paul Tarau. Bijective Term Encodings. In *CICLOPS’2011*, Lexington, KY, July 2011.
- [23] Paul Tarau and Arun Majumdar. Agent Mobility with Weak Local Inheritance and Transactional Remote Logic Invocation. In *LPMAS’2011*, Lexington, KY, July 2011. <http://www.cs.nmsu.edu/epon-tell/LPMAS11/agenda.html>.
- [24] Paul Tarau. Declarative modeling of finite mathematics. In *PPDP ’10: Proceedings of the 12th international ACM SIGPLAN symposium on Principles and practice of declarative programming*, pages 131–142, New York, NY, USA, 2010. ACM.
- [25] Paul Tarau. A Unified Formal Description of Arithmetic and Set Theoretical Data Types. In S. Auxtier et al., editor, *Intelligent Computer Mathematics, 17th Symposium, Calculemus 2010, 9th International Conference AISC/Calculemus/MKM 2010*, pages 247–261, Paris, July 2010. Springer, LNAI 6167.

- [26] Paul Tarau. On Arithmetic Computations with Hereditarily Finite Sets, Functions and Types. In A. Cavalcanti, D. Deharbe, M. C. Gaudel, and J. Woodcock, editors, *Proceedings of 7th International Colloquium on Theoretical Aspects of Computing, ICTAC 2010*, pages 367–381, Natal, Brazil, September 2010. Springer, LNCS 6255.
- [27] Paul Tarau. Hereditarily finite representations of natural numbers and self-delimiting codes. In *Proceedings of MSFP'10: ACM SIGPLAN Workshop on Mathematically Structured Functional Programming*, pages 11–18, New York, NY, USA, 2010. ACM.
- [28] Paul Tarau and Brenda Luderman. Experimental Mathematics in Haskell: on Pairing/Unpairing Functions and Boolean Evaluation. In Rex Page et al., editor, *Proceeding of the Symposium on Trends in Functional Programming*, pages 77–90, Norman, Oklahoma, May 2010.
- [29] Paul Tarau. Efficient Bijective Gödel Numberings for Term Algebras. In Rex Page et al., editor, *Proceeding of the Symposium on Trends in Functional Programming*, pages 284–293, Norman, Oklahoma, May 2010.
- [30] Paul Tarau. An Embedded Declarative Data Transformation Language. In *Proceedings of 11th International ACM SIGPLAN Symposium PPDP 2009*, pages 171–182, Coimbra, Portugal, September 2009. ACM.
- [31] Paul Tarau. A Groupoid of Isomorphic Data Transformations. In J. Carette, L. Dixon, C. S. Coen, and S. M. Watt, editors, *Intelligent Computer Mathematics, 16th Symposium, Calculemus 2009, 8th International Conference MKM 2009*, pages 170–185, Grand Bend, Canada, July 2009. Springer, LNAI 5625.
- [32] Paul Tarau and Arun Majumdar. Interoperating Logic Engines. In *Practical Aspects of Declarative Languages, 11th International Symposium, PADL 2009*, pages 137–151, Savannah, Georgia, January 2009. Springer, LNCS 5418.
- [33] Paul Tarau. Isomorphisms, Hylomorphisms and Hereditarily Finite Data Types in Haskell. In *Proceedings of ACM SAC'09*, pages 1898–1903, Honolulu, Hawaii, March 2009. ACM.
- [34] Paul Tarau and Brenda Luderman. Computing Ranking and Unranking Functions for BDDs. In *Proceedings of 16th Symposium on the Integration of Symbolic Computation and Mechanised Reasoning, Calculemus 2009 - Emerging trends*, pages 31–42, Grand Bend, Canada, July 2009. <http://www.calculemus.net/meetings/ontario09/trends-09.pdf>.
- [35] Paul Tarau. Logic Engines as Interactors. In Maria Garcia de la Banda and Enrico Pontelli, editors, *Logic Programming, 24-th International Conference, ICLP*, pages 703–707, Udine, Italy, December 2008. Springer, LNCS.
- [36] Paul Tarau and Brenda Luderman. Exact combinational logic synthesis and non-standard circuit design. In *CF '08: Proceedings of the 2008 conference on Computing frontiers*, pages 179–188, New York, NY, USA, 2008. ACM.
- [37] Paul Tarau and Brenda Luderman. Revisiting Exact Combinational Circuit Synthesis. In *Proceedings of the 2008 ACM symposium on Applied computing*, pages 1758–1759, Fortaleza, Brazil, March 2008.
- [38] Paul Tarau. Interactors: Logic Engine Interoperation with Pure Prolog Semantics. In Manuel Carro and Bart Demoen, editors, *Proceedings of CICLOPS 2008, 8th International Colloquium on Implementation of Constraint and LOGic Programming Systems*, pages 17–32, December 2008.
- [39] Paul Tarau. Declarative Combinatorics in Prolog: ShapeShifting Data Objects with Isomorphisms and Hylomorphisms. In Manuel Carro and Bart Demoen, editors, *Proceedings of CICLOPS 2008, 8th International Colloquium on Implementation of Constraint and LOGic Programming Systems*, pages 107–123, December 2008.

- [40] Paul Tarau. Pairing Functions, Boolean Evaluation and Binary Decision Diagrams. In Manuel Carro and Bart Demoen, editors, *Proceedings of CICLOPS 2008, 8th International Colloquium on Implementation of Constraint and LOGic Programming Systems*, pages 139–153, December 2008.
- [41] Paul Tarau and Brenda Luderman. A Logic Programming Framework for Combinational Circuit Synthesis. In *23rd International Conference on Logic Programming (ICLP), LNCS 4670*, pages 180–194, Porto, Portugal, September 2007. Springer.
- [42] Arun Majumdar, Mary Keeler, Paul Tarau, and John Sowa. Semantic Distances As Knowledge Capture Constraints. In *First Workshop on Knowledge Capture and Constraint Programming (KCCP-2007)*, Whistler, BC, September 2007.
- [43] Paul Tarau, Rada Mihalcea, and Elizabeth Figa. Semantic document engineering with WordNet and PageRank. In *Proceedings of the ACM Conference on Applied Computing (ACM-SAC 2005)*, pages 782–786, Santa Fe, NM, March 2005.
- [44] Rada Mihalcea and Paul Tarau. An Algorithm for Language Independent Single and Multiple Document Summarization. In *Proceedings of the International Joint Conference on Natural Language Processing (IJCNLP)*, Korea, October 2005.
- [45] Andy Borman, Rada Mihalcea, and Paul Tarau. PicNet: Pictorial Representations for Illustrated Semantic Networks. In *Proceedings of the AAAI Spring Symposium on Knowledge Collection from Volunteer Contributors*, Stanford, CA, March 2005.
- [46] Rada Mihalcea and Paul Tarau. Multi-Document Summarization with Iterative Graph-based Algorithms. In *Proceedings of the First International Conference on Intelligent Analysis Methods and Tools (IA 2005)*, McLean, VA, May 2005.
- [47] David Hurt and Paul Tarau. An empirical evaluation of communication effectiveness in autonomous reactive multiagent systems. In *Proceedings of the ACM Conference on Applied Computing (ACM-SAC 2005)*, pages 74–78, Santa Fe, NM, March 2005.
- [48] Paul Tarau. Orthogonal Language Constructs for Agent Oriented Logic Programming. In Manuel Carro and Jose F. Morales, editors, *Proceedings of CICLOPS 2004, Fourth Colloquium on Implementation of Constraint and Logic Programming Systems*, Saint-Malo, France, September 2004.
- [49] Paul Tarau, Rada Mihalcea, and Elizabeth Figa. A Logic Programming Framework for Semantic Interpretation with WordNet and PageRank. In Manuel Carro and Jose F. Morales, editors, *Proceedings of CICLOPS 2004, Fourth Colloquium on Implementation of Constraint and Logic Programming Systems*, Saint-Malo, France, September 2004.
- [50] Paul Tarau. Agent Oriented Logic Programming Constructs in Jinni 2004. In Bart Demoen and Vladimir Lifschitz, editors, *Logic Programming, 20-th International Conference, ICLP 2004*, pages 477–478, Saint-Malo, France, September 2004. Springer, LNCS 3132.
- [51] Veronica Dahl and Paul Tarau. Assumptive Logic Programming. In *Proceedings of ASAI 2004 VI Argentine Symposium on Artificial Intelligence*, Cordoba, Argentina, September 2004.
- [52] Paul Tarau and Elizabeth Figa. Knowledge Based Conversational Agents and Virtual Storytelling. In *Proceedings of the 2004 ACM Symposium on Applied Computing*, Nicosia, Cyprus, March 2004. ACM Press.
- [53] Rada Mihalcea, Paul Tarau, and Elizabeth Figa. PageRank on Semantic Networks, with application to Word Sense Disambiguation. In *Proceedings of The 20th International Conference on Computational Linguistics (COLING 2004)*, Geneva, Switzerland, August 2004.

- [54] Elizabeth Figa and Paul Tarau. Knowledge Assimilation and Web Deployment Techniques for Conversational Agents. In Zsofia Ruttkay C. Pelachaud and Kris Thorisson, editors, *Proceedings of the AAMAS 2004 Workshop On Embodied Conversational Agents: Balanced Perception and Action*, pages 108–114, New York, USA, July 2004.
- [55] Elizabeth Figa and Paul Tarau. Conversational Agents as Web Services. In H.R. Arabnia and S. Chatterjee, editors, *Proceedings of The International Symposium On Web Services and Applications ISWS'04*, pages 773–782, Las Vegas, Nevada, USA, June 2004.
- [56] E. Figa, P. Tarau, and J. Ephraim. Enhancing the virtual storytelling experience with metadata driven voice enabled conversational agents. *Proceedings of the American Society for Information Science and Technology*, 41(1), 2004.
- [57] Elizabeth Figa and Paul Tarau. Lexical Inference Mechanisms for Text Understanding and Classification. In Ross J. Todd, editor, *Proceedings of the 66th Annual Meeting of American Society for Information Science and Technology*, pages 165–173, Long Beach, California, October 2003.
- [58] Paul Tarau and Azzedine Bouckerche. Agents and Ambient Intelligence in the Jinni Infrastructure. In A. Kameas P. Spirakis and S. Nikolettseas, editors, *International Workshop on Ambient Intelligence Computing*, pages 83–99, Santorini, Greece, June 2003. CTI Press. ISBN 940-406-462-2.
- [59] Qinan Zhou and Paul Tarau. Garbage Collection Algorithms for Java-Based Prolog Engines. In V. Dahl and P. Wadler, editors, *Practical Aspects of Declarative Languages, 5th International Symposium, PADL 2003*, pages 304–320, New Orleans, USA, January 2003. Springer, LNCS 2562.
- [60] Elizabeth Figa and Paul Tarau. The VISTA Project: An Agent Architecture for Virtual Interactive Storytelling. In N. Braun and U. Spierling, editors, *TIDSE'2003*, Darmstadt, Germany, March 2003.
- [61] Elizabeth Figa and Paul Tarau. Story Traces and Projections: Exploring the Patterns of Storytelling. In N. Braun and U. Spierling, editors, *TIDSE'2003*, Darmstadt, Germany, March 2003.
- [62] Elizabeth Figa and Paul Tarau. The VISTA Project: An Agent Architecture for Virtual Interactive Storytelling. In *CSCW 2002 Workshop on Storytelling and Collaborative Activities*, New Orleans, November 2002.
- [63] Satyam Tyagi, Paul Tarau, and Armin Mikler. Multicast Protocols for Jinni Agents. In T. Boehme and H. Unger, editors, *Innovative Internet Computing Systems, IICS 2001*, pages 1–18, Ilmenau, Germany, June 2001. Springer, LNAI 2060.
- [64] Paul Tarau. Fluents: A Refactoring of Prolog for Uniform Reflection and Interoperation with External Objects. In John Lloyd, editor, *Computational Logic–CL 2000: First International Conference*, London, UK, July 2000. LNCS 1861, Springer-Verlag.
- [65] A. Garcia and D. Gollapally and P. Tarau and G. Simari. Deliberative stock market agents using Jinni and defeasible logic programming. In *Proc. of the ECAI Workshop on Engineering Societies in the Agents' World*, Berlin, Germany, August 2000. Springer.
- [66] Anima Gupta and Paul Tarau. Assumption Grammars for Generating Dynamic VRML Pages. In Ins de Castro Dutra, editor, *Proceedings of CL2000 Workshop on Parallelism and Implementation Technology for (Constraint) Logic Programming*, London, UK, June 2000.
- [67] Satyam Tyagi and Paul Tarau. Multicast Protocols for Jinni Agents. In Ins de Castro Dutra, editor, *Proceedings of CL2000 Workshop on Parallelism and Implementation Technology for (Constraint) Logic Programming*, London, UK, June 2000.

- [68] Anima Gupta and Paul Tarau. Logic Programming Techniques for Dynamic VRML Web Content Generation. In I.V. Ramakrishnan and Gopal Gupta, editors, *Proceedings of PADL'2001*, Las Vegas, March 2001. Springer-Verlag.
- [69] Satyam Tyagi and Paul Tarau. A Most Specific Method Finding Algorithm for Reflection Based Dynamic Prolog-to-Java Interfaces. In I.V. Ramakrishnan and Gopal Gupta, editors, *Proceedings of PADL'2001*, Las Vegas, March 2001. Springer-Verlag.
- [70] Paul Tarau. A Logic Programming Based Software Architecture for Reactive Intelligent Mobile Agents. In P. Van Roy and P. Tarau, editors, *Proceedings of DIPLCL'99*, Las Cruces, NM, November 1999.
- [71] Paul Tarau. Multi-Engine Horn Clause Prolog. In Gopal Gupta and Enrico Pontelli, editors, *Proceedings of Workshop on Parallelism and Implementation Technology for (Constraint) Logic Programming Languages*, Las Cruces, NM, November 1999.
- [72] Paul Tarau. Intelligent Mobile Agent Programming at the Intersection of Java and Prolog. In *Proceedings of The Fourth International Conference on The Practical Application of Intelligent Agents and Multi-Agents*, pages 109–123, London, U.K., 1999.
- [73] Stephen Rochefort, Veronica Dahl, and Paul Tarau. A Framework for Virtual Learning Environments. In *Proceedings of EMEDIA'99 World Conference on Educational Multimedia, Hypermedia and Telecommunications*, Seattle, Washington, June 1999.
- [74] A.R. Mikler, H. Unger, P. Tarau, A. S. Hopper, and F. Chen. A Mobile Agent-Based File System for Distributed Networks. In *High Performance Computing'99, Special Session on Adaptive and Intelligent Computing Systems*, 1999.
- [75] Stephen Rochefort, Veronica Dahl, and Paul Tarau. An Agent Communication Protocol for the Feature Interaction Problem. In *Proceedings of the 11th International Conference on Applications of Prolog*, Tokyo, Japan, 1998.
- [76] Stephen Rochefort, Veronica Dahl, and Paul Tarau. A Virtual Environment for Collaborative Learning. In *World Multiconference on Systemics, Cybernetics, and Informatics*, Orlando, Florida, July 1998.
- [77] Paul Tarau. Inference and Computation Mobility with Jinni. In K.R. Apt, V.W. Marek, and M. Truszczyński, editors, *The Logic Programming Paradigm: a 25 Year Perspective*, pages 33–48, Berlin Heidelberg, 1999. Springer. ISBN 3-540-65463-1.
- [78] Paul Tarau. Towards Logic Programming Based Coordination in Virtual Worlds. In *Proceedings of HICSS'98, Software Technology: Coordination Languages, Models, Systems*, Big Island of Hawaii, January 1998.
- [79] Paul Tarau and Veronica Dahl. Mobile Threads through First Order Continuations. In *Proceedings of APPAI-GULP-PRODE'98*, Coruna, Spain, July 1998.
- [80] Veronica Dahl, Paul Tarau, Pablo Accuosto, Stephen Rochefort, and Marius Scortescu. Assumption grammars for knowledge based systems. In *Natural Language Databases*, June 1997.
- [81] Osmar Zaiane, Andrew Fall, Stephen Rochefort, Veronica Dahl, and Paul Tarau. Concept-Based Retrieval using Controlled Natural Language. In *Proceedings of NLDB'97*, pages 11–26, Vancouver, 1997.
- [82] Veronica Dahl, Paul Tarau, and Renwei Li. Assumption Grammars for Processing Natural Language. In Lee Naish, editor, *Proceedings of the Fourteenth International Conference on Logic Programming*, pages 256–270, MIT press, 1997.

- [83] Paul Tarau, Veronica Dahl, and Koen De Bosschere. A Logic Programming Infrastructure for Remote Execution, Mobile Code and Agents. In *Proceedings of WETICE'97*, pages 106–112, IEEE Computer Society Press, June 1997.
- [84] Paul Tarau, Veronica Dahl, Stephen Rochefort, and Koen De Bosschere. LogiMOO: a Multi-User Virtual World with Agents and Natural Language Programming. In S. Pemberton, editor, *Proceedings of CHI'97*, pages 323–324, March 1997.
- [85] Stephen Rochefort, Veronica Dahl, and Paul Tarau. Controlling Virtual Worlds through Extensible Natural Language. In *AAAI Symposium on NLP for the WWW*, Stanford University, CA, 1997.
- [86] Yan-Nuong Huang and Paul Tarau. Efficient Point Data Clustering by Database Operations. In *Proceedings of the 8th International Database Workshop*, Hong Kong, July 1997.
- [87] Osmar Zaiane, Andrew Fall, Rochefort Stephen, Dahl Veronica, and Paul Tarau. On-line Resource Discovery Using Natural Language. In *Proceedings of RIAO'97*, pages 336–355, McGill University, Montreal, June 1997.
- [88] Paul Tarau and Veronica Dahl. A Coordination Logic for Agent Programming in Virtual Worlds. In Wolfram Conen and Gustaf Neumann, editors, *Proceedings of Asian'96 Post-Conference Workshop on Coordination Technology for Collaborative Applications*, Singapore, December 1996.
- [89] Paul Tarau, Veronica Dahl, and Andrew Fall. Backtrackable State with Linear Affine Implication and Assumption Grammars. In Joxan Jaffar and Roland H.C. Yap, editors, *Concurrency and Parallelism, Programming, Networking, and Security*, Lecture Notes in Computer Science 1179, pages 53–64, Singapore, December 1996. Springer.
- [90] Koen De Bosschere, Daniel Perron, and Paul Tarau. LogiMOO: Prolog Technology for Virtual Worlds. In *Proceedings of PAP'96*, pages 51–64, London, April 1996.
- [91] Bart Demoen, Gert Engels, and Paul Tarau. Segment Preserving Copying Garbage Collection for WAM based Prolog. In *Proceedings of the 1996 ACM Symposium on Applied Computing*, pages 380–386, Philadelphia, February 1996. ACM Press.
- [92] Veronica Dahl, Andrew Fall, Stephen Rochefort, and Paul Tarau. A Hypothetical Reasoning Framework for NL Processing. In *Proc. 8th IEEE International Conference on Tools with Artificial Intelligence*, Toulouse, France, November 1996.
- [93] Paul Tarau and Koen De Bosschere. Virtual World Brokerage with BinProlog and Netscape. In Tarau et al. [174].
- [94] Yves Bekkers and Paul Tarau. Monadic Constructs for Logic Programming. In John Lloyd, editor, *Proceedings of ILPS'95*, pages 51–65, Portland, Oregon, December 1995. MIT Press.
- [95] Paul Tarau, Bart Demoen, and Koen De Bosschere. The Power of Partial Translation: an Experiment with the C-ification of Binary Prolog. In K.M. George, J.H. Carrol, E. Deaton, D. Oppenheim, and J. Hightower, editors, *Proceedings of the 1995 ACM Symposium on Applied Computing*, pages 152–176, Nashville, February 1995. ACM Press.
- [96] Yves Bekkers and Paul Tarau. Logic Programming with Monads and Comprehensions. In *Proceedings of JFPL'95*, Dijon, May 1995.
- [97] V. Dahl, P. Tarau, and J. Andrews. Extending Datalog Grammars. In *Proc. of NLDB'95, Paris*, May 1995.
- [98] V. Dahl, P. Tarau, L. Moreno, and M. Palomar. Treating Coordination with Datalog Grammars. In *Proceedings of the Joint COMPULOGNET/ELSNET/EAGLES Workshop on Computational Logic For Natural Language Processing*, Edinburgh, April 1995.

- [99] Paul Tarau and Bart Demoen. Higher-Order Programming in an OR-intensive Style. In Manuel Hermenegildo and Pedro Lopez, editors, *Proceedings of the 1995 COMPULOG-NET Workshop and Area Meeting on Parallelism and Implementation Technology*, 1995.
- [100] Andrew Fall, Veronica Dahl, and Paul Tarau. Resolving Co-specification in Contexts. In *Proc. of IJCAI'95 Context in Natural Language Workshop*, Montreal, August 1995.
- [101] Bart Demoen, Geert Engels, and Paul Tarau. Rejuvenating Future Garbage in WAM. In Koen De Bosschere, editor, *Proceedings of BENELOG'1995*, September 1995.
- [102] J. Andrews, V. Dahl, and P. Tarau. Continuation Logic Programming: Theory and Practice. In *ILPS'95 Workshop on Operational and Denotational Semantics of Logic Programs*, Portland, Oregon, November 1995.
- [103] P. Tarau, V. Dahl, and A. Fall. Backtrackable State with Linear Assumptions, Continuations and Hidden Accumulator Grammars. In *ILPS'95 Workshop on Visions for the Future of Logic Programming*, Portland, Oregon, November 1995.
- [104] Paul Tarau and Ulrich Neumerkel. A Novel Term Compression Scheme and Data Representation in the BinWAM. In M. Hermenegildo and J. Penjam, editors, *Proceedings of Programming Language Implementation and Logic Programming*, number 844 in Lecture Notes in Computer Science, pages 73–87, Berlin Heidelberg, September 1994. Springer.
- [105] Veronica Dahl, Paul Tarau, and Yan Nong Huang. Datalog Grammars. In *Proc. 1994 Joint Conference on Declarative Programming*, pages 268–282, Peniscola, Spain, September 1994.
- [106] P. Tarau, B. Demoen, and K. De Bosschere. The Power of Partial Translation: an Experiment with the C-ification of Binary Prolog. In M. García de la Banda, J. and Hermenegildo M., editors, *Proceedings of the First COMPULOG-NOE Area Meeting on Parallelism and Implementation Technology*, pages 3–17, Madrid/Spain, September 1994.
- [107] Paul Tarau and Veronica Dahl. Logic Programming and Logic Grammars with First-order Continuations. In *Proceedings of LOPSTR'94, LNCS, Springer, Pisa*, June 1994.
- [108] Paul Tarau. Low level Issues in Implementing a High-Performance Continuation Passing Binary Prolog Engine. In M.-M. Corsini, editor, *Proceedings of JFPL'94*, June 1994.
- [109] Paul Tarau and Bart Demoen. Language Embedding by Dual Compilation and State Mirroring. In M. Fromherz, A. Kusalik, and O. Nytro, editors, *Proceedings of 6-th Workshop on Logic Programming Environments, Santa Margherita Ligure, 1994*, pages 15–20, June 1994. also available as TR N-7034 Norges Tek. Hogscole, TRONDHEIM.
- [110] K. De Bosschere and P. Tarau. High Performance Continuation Passing Style Prolog-to-C Mapping. In E. Deaton, D. Oppenheim, J. Urban, and H. Berghel, editors, *Proceedings of the 1994 ACM Symposium on Applied Computing*, pages 383–387, Phoenix/AZ, March 1994. ACM Press.
- [111] P. Tarau and K. De Bosschere. Blackboard Based Logic Programming in BinProlog. In L. Goldfarb, editor, *Proceedings of the fifth University of New Brunswick Artificial Intelligence Symposium*, pages 137–147, Fredericton, N.B., August 1993.
- [112] P. Tarau and K. De Bosschere. Memoing with Abstract Answers and Delphi Lemmas. In Yves Deville, editor, *Logic Program Synthesis and Transformation*, Springer-Verlag, pages 196–209, Louvain-la-Neuve, July 1993.
- [113] K. De Bosschere and P. Tarau. Blackboard-based Extensions for Parallel Programming in BinProlog. In *Proceedings of the 1993 ILPS Conference*, page 664, Vancouver, Canada, 1993.

- [114] K. De Bosschere and P. Tarau. Blackboard Communication in Logic Programming. In *Proceedings of the PARCO'93 Conference*, pages 257–264, Grenoble, France, September 1993.
- [115] K. De Bosschere and P. Tarau. Some Issues in the Implementation of a Unix-based Blackboard. In De Bosschere et al. [176], pages 91–104.
- [116] P. Tarau and K. De Bosschere. Non-Associative Blackboard Programming. In De Bosschere et al. [176], pages 77–89.
- [117] Paul Tarau. Language Issues and Programming Techniques in BinProlog. In Domenico Sacca, editor, *Proceeding of the GULP'93 Conference*, Gizzeria Lido, Italy, June 1993.
- [118] Paul Tarau. Ecological Memory Management in a Continuation Passing Prolog Engine. In Y. Bekkers and J. Cohen, editors, *Memory Management International Workshop IWMM 92 Proceedings*, number 637 in Lecture Notes in Computer Science, pages 344–356, Berlin Heidelberg, September 1992. Springer.
- [119] Paul Tarau. A Simplified Abstract Machine for the Execution of Binary Metaprograms. In *Proceedings of the Logic Programming Conference'91*, pages 119–128. ICOT, Tokyo, 7 1991.
- [120] Paul Tarau. Program Transformations and WAM-support for the Compilation of Definite Metaprograms. In Andrei Voronkov, editor, *Logic Programming, RCLP Proceedings*, number 592 in Lecture Notes in Artificial Intelligence, pages 462–473, Berlin, Heidelberg, 1992. Springer-Verlag.
- [121] Paul Tarau. Nonstandard Answers of Elementary Logic Programs. In J.M. Jacquet, editor, *Proceedings of the ICLP'91 Workshop on Constructing Logic Programs*. Paris, 1991.
- [122] Paul Tarau and Michel Boyer. Elementary Logic Programs. In P. Deransart and J. Maluszyński, editors, *Proceedings of Programming Language Implementation and Logic Programming*, number 456 in Lecture Notes in Computer Science, pages 159–173, Berlin Heidelberg, August 1990. Springer.
- [123] Paul Tarau and Michel Boyer. Prolog Meta-Programming with Soft Databases. In Harvey Abramson and M.H. Rogers, editors, *Meta-Programming in Logic Programming*, pages 365–382. MIT Press, 1989.
- [124] Paul Tarau. Conditional and Abstract Solutions of Elementary Logic Programs. In *Proceedings of The Third UNB Artificial Intelligence Workshop*. Fredericton, N.B, August 1990.
- [125] Paul Tarau. Adding Theories to Prolog. In J.A. Bates and D. Kemp, editors, *Proceedings of CIPS Congress'87*, pages 293–298, 1987.
- [126] B. Moulin and Paul Tarau. Un environnement de conception de systemes experts pour des applications grand-public. In D. Kemp J.A. Bates, editor, *Proceedings of CIPS Congress'87*, pages 305–316, 1987.
- [127] Paul Tarau and Veronica Dahl. A Logic Programming Infrastructure for Internet Programming. In M. J. Wooldridge and M. Veloso, editors, *Artificial Intelligence Today – Recent Trends and Developments*, pages 431–456. Springer, LNAI 1600, 1999. ISBN 3-540-66428-9.
- [128] Paul Tarau, Veronica Dahl, and Koen De Bosschere. Logic Programming Based Coordination in Virtual Worlds. In Wolfram Conen and Gustaf Neumann, editors, *Coordination Technology for Collaborative Applications - Organizations, Processes, and Agents*. Springer, LNCS 1364, March 1998. ISBN 3-540-64170-X.
- [129] P. Tarau, V. Dahl, and A. Fall. Backtrackable State with Linear Assumptions, Continuations and Hidden Accumulator Grammars. In John Lloyd, editor, *Proceedings of ILPS'95*, page 642, Portland, Oregon, November 1995. poster abstract.
- [130] P Tarau. An Efficient Specialization of the WAM for Continuation Passing Binary programs. In *Proceedings of the 1993 ILPS Conference*, Vancouver, Canada, 1993. MIT Press. poster.

- [131] Paul Tarau and M. Boyer. Nonstandard Answers of Elementary Logic Programs. In J.M. Jacquet, editor, *Constructing Logic Programs*, pages 279–300. J.Wiley, Hoboken, NJ, 1993.
- [132] Paul Tarau. BinProlog: a Continuation Passing Style Prolog Engine. In M. Bruynooghe and M. Wirsing, editors, *Proceedings of Programming Language Implementation and Logic Programming*, number 631 in Lecture Notes in Computer Science, pages 479–480, Berlin Heidelberg, August 1992. Springer. poster.
- [133] Paul Tarau. *Transformation de programmes logiques. Bases sémantiques et applications*. Phd thesis, Université de Montréal, november 1990.
- [134] Paul Tarau. Logic Programming and Virtual Worlds. In *Proceedings of INAP96*, Tokyo, November 1996. keynote address.
- [135] Paul Tarau. Logic Programming Tools for Advanced Internet Programming. In Jan Maluszynski, editor, *Logic Programming, Proceedings of the 1997 International Symposium*, pages 33–34, MIT press, 1997.
- [136] Paul Tarau, Veronica Dahl, and Koen De Bosschere. Remote Execution, Mobile Code and Agents in BinProlog. In *Electronic Proceedings of WWW6 Logic Programming Workshop*, <http://www.cs.vu.nl/eliens/WWW6/papers.html>, Santa Clara, California, March 1997.
- [137] Paul Tarau. Jinni: a Lightweight Java-based Logic Engine for Internet Programming. In Kostis Sagonas, editor, *Proceedings of JICSLP'98 Implementation of LP languages Workshop*, Manchester, U.K., June 1998. invited talk.
- [138] Paul Tarau. Towards Inference and Computation Mobility: The Jinni Experiment. In J. Dix and U. Furbach, editors, *Proceedings of JELIA '98, LNAI 1489*, pages 385–390, Dagstuhl, Germany, October 1998. Springer. invited talk.
- [139] Paul Tarau. Declarative Combinatorics: Isomorphisms, Hylomorphisms and Hereditarily Finite Data Types in Haskell, January 2009. Unpublished draft, <http://arXiv.org/abs/0808.2953>, updated version at <http://logic.cse.unt.edu/tarau/research/2010/ISO.pdf>, 150 pages.
- [140] Paul Tarau. Logic Engines as Interactors, 2008. <http://arXiv.org/abs/0808.0556>.
- [141] Paul Tarau. Declarative Combinatorics: Boolean Functions, Circuit Synthesis and BDDs in Haskell, 2008. <http://arXiv.org/abs/0808.0760>.
- [142] Paul Tarau. A Functional Hitchhiker's Guide to Hereditarily Finite Sets, Ackermann Encodings and Pairing Functions, 2008. <http://arXiv.org/abs/0808.0754>.
- [143] Paul Tarau. Ranking Catamorphisms and Unranking Anamorphisms on Hereditarily Finite Datatypes, 2008. <http://arXiv.org/abs/0808.0753>.
- [144] Paul Tarau. Pairing Functions, Boolean Evaluation and Binary Decision Diagrams, 2008. <http://arXiv.org/abs/0808.0555>.
- [145] Paul Tarau. Ranking and Unranking of Hereditarily Finite Functions and Permutations, 2008. <http://arXiv.org/abs/0808.0554>.
- [146] Paul Tarau. Executable Set Theory and Arithmetic Encodings in Prolog, 2008. <http://arXiv.org/abs/0808.0540>.
- [147] Elizabeth Figa and Paul Tarau. The vista architecture: experiencing stories through virtual storytelling agents. *SIGGROUP Bull.*, 23(2):27–28, 2002.

- [148] Paul Tarau. The Jinni Prolog Compiler: a fast and flexible Prolog-in-Java, 2008. <http://www.binnetcorp.com/download/jinnidemo/JinniUserGuide.html>.
- [149] Paul Tarau. Object Oriented Logic Programming as an Agent Building Infrastructure. In Joao Bosco Manguiera Sobral, editor, *First International Workshop on Distributed Computing with Agent Technologies*, Fort Worth, October 2002. URL: http://www.inf.ufsc.br/simbosco/workshop_program.htm.
- [150] Paul Tarau. BinProlog 11.x Professional Edition: User Guide. Technical report, BinNet Corp., 2006.
- [151] Paul Tarau. BinProlog 11.x Professional Edition: Internet Programming Guide. Technical report, BinNet Corp., 2006.
- [152] Paul Tarau. BinProlog 11.x Professional Edition: Advanced BinProlog Programming and Extensions Guide. Technical report, BinNet Corp., 2006.
- [153] Paul Tarau. BinProlog 11.x Professional Edition: BinProlog Interfaces Guide. Technical report, BinNet Corp., 2006.
- [154] Andrea Schiel, Veronica Dahl, and Paul Tarau. Generating Internet Based VRML Animations through Natural Language Controlled Partial Order Planners. Technical report, Simon Fraser University, 1998.
- [155] Paul Tarau, Veronica Dahl, and Koen De Bosschere. Logic Programming Tools for Remote Execution, Mobile Code and Agents. In *Proceedings of ICLP'97 Workshop on Logic Programming and Multi Agent Systems*, Leuven, Belgium, July 1997.
- [156] Veronica Dahl, Paul Tarau, Stephen Rochefort, and Marius Scortescu. A Spanish Interface to LogiMoo-towards multilingual virtual worlds. In *International Workshop on Spanish Natural Language Processing and Spanish Language Technologies*, New Mexico, July 1997. invited talk.
- [157] Paul Tarau. BinProlog 5.75 User Guide. Technical Report 97-1, Département d'Informatique, Université de Moncton, April 1997.
- [158] Paul Tarau. BinProlog 5.25 User Guide. Technical Report 96-1, Département d'Informatique, Université de Moncton, April 1996.
- [159] Bart Demoen, Geert Engels, and Paul Tarau. Issues in (copying) garbage collection for (Bin)WAM. Technical Report CW-202, KU Leuven, 1994.
- [160] Paul Tarau and Bart Demoen. Higher-Order Programming in an OR-intensive Style. Technical Report CW-192, KU Leuven, 1994.
- [161] Paul Tarau. BinProlog 4.00 User Guide. Technical Report 95-1, Département d'Informatique, Université de Moncton, February 1995. Available by ftp from [clement.info.umoncton.ca](ftp://clement.info.umoncton.ca).
- [162] Paul Tarau. BinProlog 2.20 User Guide. Technical Report 94-1, Dept. d'Informatique, Université de Moncton, February 1994. <ftp://clement.info.umoncton.ca/BinProlog>.
- [163] Paul Tarau, Veronica Dahl, and Andrew Fall. Backtrackable State with Linear Assumptions, Continuations and Hidden Accumulator Grammars. Technical Report 95-2, Département d'Informatique, Université de Moncton, April 1995. Available by ftp from [clement.info.umoncton.ca](ftp://clement.info.umoncton.ca).
- [164] Paul Tarau and Ulrich Neumerkel. Compact Representation of Terms and Instructions in the BinWAM. Technical Report 93-3, Dept. d'Informatique, Université de Moncton, November 1993. available by ftp from [clement.info.umoncton.ca](ftp://clement.info.umoncton.ca).
- [165] Paul Tarau. BinProlog 1.71 User Guide. Technical Report 93-1, Dept. d'Informatique, Université de Moncton, February 1993. <ftp://clement.info.umoncton.ca/BinProlog>.

- [166] K. De Bosschere and P. Tarau. Continuation Passing Style Prolog-to-C Mapping at Native WAM-speed. ELIS Technical Report DG 93-15, Vakgroep Elektronica en Informatiesystemen, Universiteit Gent, November 1993.
- [167] Paul Tarau. Ecological Memory Management in a Continuation Passing Prolog engine. Technical Report 92-1, Dept. d'Informatique, Université de Moncton, February 1992.
- [168] Paul Tarau. WAM-optimizations in BinProlog: Towards a Realistic Continuation Passing Prolog Engine. Technical Report 92-3, Dept. d'Informatique, Université de Moncton, July 1992. available by ftp from clement.info.umoncton.ca.
- [169] Paul Tarau. A family of logic program transformations and their applications. In *APICS 1990 Computer Science Conference*. Universite de Moncton, August 1990.
- [170] J. DeFinney, C. Moghrabi, and P. Tarau. A Parser and Text Generation System for Argumentative Discourse. In D. Kemp J.A. Bates, editor, *proceedings of ICCAI, Calgary 1987*, pages 305–316, 1987.
- [171] K. Sagonas and P. Tarau, editors. *Proceedings of IDL'99*, Paris, France, September 1999.
- [172] P. Van Roy and P. Tarau, editors. *Proceedings of DIPLCL'99*, Las Cruces, NM, November 1999.
- [173] Paul Tarau, Koen De Bosschere, and Manuel Hermenegildo, editors. *Proceedings of the 2nd International Workshop on Logic Programming Tools for INTERNET Applications, ICLP'97*, Leuven, July 1997.
- [174] Paul Tarau, Andrew Davison, Koen De Bosschere, and Manuel Hermenegildo, editors. *Proceedings of the 1st Workshop on Logic Programming Tools for INTERNET Applications, JICSLP'96*, Bonn, September 1996.
- [175] K. De Bosschere, B. Demoen, and P. Tarau, editors. *Proceedings of the ILPS'94 Post-Conference workshop on Implementation Techniques for Logic Programming Languages*, Ithaca, NY, November 1994.
- [176] K. De Bosschere, J.M. Jacquet, and P. Tarau, editors. *Proceedings of the ICLP'93 Post-Conference Workshop on Blackboard-Based Logic Programming*, Budapest, Hungary, June 1993.

Patents

- Patent *Graph-based Ranking Algorithm for Text Processing* granted as US-2005-0278325-A1 (with Dr. Rada Mihalcea and University of North Texas)

Research Grants

- **A Framework for Bijective Data Transformations, NSF Research Grant 1018172 2010-2011** (<http://www.nsf.gov/awardsearch/showAward.do?AwardNumber=1018172>) \$97,500
- **Graph Algorithms for Text Disambiguation, Summarization and Entailment, with Dr. Rada Mihalcea, 2006-2007 Texas ARP Grant, \$99,000**
- Prolog based Internet Data-mining: NovuWeb Inc. Research Grant, 2000, \$7,500/1 year
- UNT Research Grant (with Dr. A. Mikler) 2000 - \$3,500/1 year
- Radiance Group Research Grant 1998 (at Louisiana Tech, US), \$7000/1 year
- NSERC RESEARCH GRANT 1998-2002 (Canada) CA\$72,000/4 years - discontinued due to move to US -

- NSERC RESEARCH GRANT 1994-1998 (Canada) CA\$50,000/4 years
- NSERC EQUIPMENT GRANT 1992-1993 (Canada)
- NSERC OPERATING GRANT 1991-1994 (Canada)
- BC Innovative Funds Proposal "Computing Science Teaching and Training Using WWW" with Dr. Veronica Dahl and Dr. Jiawei Han from SFU: 1995-1996
- CLTI Moncton: 1996-1997 - CA\$30,000 with Dr. Veronica Dahl from Simon Fraser University, CLTI + APECA with industrial partner E-COM
- Univ. Moncton FESR GRANT GRANT 1991-1994,1994-1997,1998-2000 (Canada) - discontinued due to move to US -
- KU Leuven visiting researcher grant: 1994 (Canada)
- IRISA+Univ. de Rennes visiting researcher grant: 1994

Invited talks:

- Invited Talk at IICS'2001, Germany (Innovative Internet Computing Systems)
- Invited Talk at 2000 International Summer School in Computational Logic Acquafredda di Maratea (Basilicata, Italy) September 3-8, 2000
- Invited Talk at AGP'99, Italy (international conference in the field of Logic Programming)
- Invited Tutorial at Logic Programming Summer School'99, Univ. of New Mexico
- Keynote Speech at INAP'96, Japan
- Invited Tutorial at ILPS'97, USA
- Invited Talk at JICLSP'98, Implementation of LP Workshop, UK
- Invited Talk at JELIA'98, Germany
- Invited conferences at MITRE Corporation (1999), Oregon Graduate Institute (1999), Simon Fraser University (1998)

Recent Conference Presentations

In the last 5 years I was *the presenter* of the following **26 papers**:

- **2012:** [14]
- **2011:** [20, 18, 17, 16, 21, 22, 23]
- **2010:** [24],[25],[26],[27],[28],[29]
- **in 2009:** [30], [31], [33], [32], [34]
- **in 2008:** [36] [35], [37], [38, 39, 40]
- **in 2007:** [41]

Teaching

Teaching philosophy

I value independent, creative thinking, and the ability to apply learnings to new situations. My teaching emphasizes *operational knowledge*: the ability to *do* things, to solve problems, by combining rigorous logic with induction and experiment. I tend to evaluate students in a way that strongly discourages recitation of passively memorized or superficially understood concepts.

While making sure that all students understand fundamental concepts and learn the most important practical skills, I put special emphasis on letting exceptional students fly as high as they can.

One of the main dangers in rapidly evolving domains, like computer science, is fast depreciation of knowledge. I tend to fight this by adapting my courses to cover key technological changes.

Finally, I think about teaching and research as activities which interoperate and stimulate each other.

Courses taught recently

Codes higher than 5000 indicated graduate courses.

- Fall 2010 CSCE 6933: Topics in Computational Mathematics CSCE CSCE 5450: Programming Languages
- Spring 2010 CSCE 3600: Principles of System Programming CSCE 5430: Topics in Software Engineering
- Fall 2009 CSCE 4430/5450: Programming Languages CSCE 5420: Software Development
- Spring 2009 CSCE 4430/5450: Programming Languages CSCE 5430: Topics in Software Engineering
- Fall 2008 CSCE 4430/5450: Programming Languages CSCE 5420: Software Development
- Spring 2008 CSCE 4430/5450: Programming Languages CSCE 5430: Topics in Software Engineering
- Fall 2007: CSCE 4430/5450: Programming Languages CSCE 5420: Software Development
- Spring 2006: CSCE 5210: Artificial Intelligence CSCE 5450: Programming Languages
- Fall 2005: CSCE 5450: Programming Languages CSCE 4430: Programming Languages
- Spring 2005: CSCI 5410: Artificial Intelligence CSCI 4300: Survey of Computer Languages
- Fall 2004: CSCI 4410: Introduction to Artificial Intelligence CSCI 4250: Survey of Computer Languages
- Spring 2004: CSCI 5410: - Artificial Intelligence CSCI 3400: - Data Structures
- Fall 2003: CSCI 6330: Advanced Topics in Software Agents CSCI 4250: Survey of Computer Languages
- Spring 2003: CSCI 5250: - Programming Languages CSCI 5540: - Operating Systems
- Fall 2002: CSCI 4250 Survey of Computer Languages, CSCI 5250 Programming Languages,
- Spring 2002: CSCI 5530 Topics in Software Engineering CSCI 5550 Compiler Design
- Fall 2001: CSCI 4250 Survey of Computer Languages, CSCI 5250 Programming Languages,
- Spring 2001: CSCI 5530 Topics in Software Engineering CSCI 5550 Compiler Design
- Fall 2000: CSCI 4250 Survey of Computer Languages, CSCI 5250 Programming Languages,

- Spring 2000: CSCI 5530 Topics in Software Engineering CSCI 6330 Advanced Internet Programming
- Fall 1999: CSCI 4250 Survey of Computer Languages, CSCI 5250 Programming Languages
- Spring 1999: CSCI 5530 Topics in Software Engineering, CSCI 6330 Intelligent Mobile Agents
- Fall 1998: CSCI 4250 Survey of Computer Languages, CSCI 5250 Programming Languages.

Partly due to my divers research interests accumulated over the years, I am able to cover the topics of about 80-90 percent of undergraduate and graduate courses and ready to teach any of them on a few days notice.

Graduate Supervision:

Graduate Student Supervision in the last 3 years

- supervising currently 1 MSc thesis student: Bharat Dandala
- 1 MSc student graduated with thesis: Chris Gaconnet, 2009
- member of 5 PhD thesis committees (Andras Csomai graduated 2008, Kino Coursey graduated 2009, Samer Hassan, Cameron Palmer and Dhanyu Amarasinghe - in progress) and 4 Masters thesis committees (Michael Mohler 2007, Ravi Sinha 2008, Brett Thompson 2009 and Christian Loza 2009)
- worked with 8+ MSc. students (directed study, projects)

Other Graduate Supervision Since Joining UNT:

I have supervised the following students graduating with MSc. thesis with whom I co-authored papers in peer-reviewed conferences and workshops:

- Devender Gollapally
- Anima Gupta
- David Hurt
- Satyam Tyagi
- Qinan Zhou

as well as the following MSc. thesis students: V.G. Balamuru, P. Gupta, S. Kandaswamy, K. Valveti, G. Sun.

A post-doctoral visitor of mine at UNT, A. J. Garcia, is now professor at Universidad Nacional del Sur, Argentina.

Service

Recent Program Committees and Grant Panels:

- GPCE12 , TextGraphs-7, FLOPS2012, ACM SAC12/CM, PPDP11, DSL11, CICLOPS11
- CICLOPS'09, SAC'08, ICLP'07, CICLOPS'07, SAC'06, ICLP'04, PADL'04, CICLOPS'04, INAP'04, SONA'04, PADL'03, ICLP'07
- PADL'02, PPDP'2000, CL2000, PADL'2000, JFPLC'2000, ESAW'2000
- COCL'99, MAS'99, IDL'99, DIPLCLP'99, PADL'2000, JFPLC'2000

- JICSLP'98, JFPL'98, ICLP'1997, IWLPTIA'1997
- JICSLP'1996, ICLP'1995, LOPSTR'1995, JFPL'96
- 2003 NSF Panelist
- 1998-2001: serving a 3-year term on the Canadian NSERC Computer Science grant committee

Journal Refereeing

- Theory and Practice of Logic Programming,
- Journal of Logic Programming,
- Journal of LISP and Symbolic Computation,
- Journal of Computer Languages,
- TOPLAS
- Journal of Computer Mathematics
- Journal of Experimental and Theoretical Artificial Intelligence

Workshops (co)-organized

- CICLOPS'09 (Pasadena, CA)
- IDL'99 (Paris)
- DIPLCPL'99 (Las Cruces, NM)
- ICLP'97 Leuven: Second International Workshop on Logic Programming Tools for Internet Applications,
- CP'97 Workshop on Constraint Reasoning on the Internet
- JICSLP'96 Bonn: First Workshop on Logic Programming Tools for Internet Applications
- ILPS'95 Ithaca: Implementation of Logic Programming Languages Workshop
- ICLP'94 Budapest: Blackboard Based Logic Programming Workshop

University of North Texas Committee Service

- CENG Faculty Council chair 2009-2010
- CSE Personnel Affairs Committee - co-chair in 2008-2009
- CS Undergraduate Committee
- CS Graduate Committee
- CS Library Contact
- CS Chair Search Committee
- CS Search Committee

Professional Organizations

ACM, Association of Logic Programming

Other experience and skills

Software development

Please follow links from <http://www.cs.unt.edu/~tarau> for current versions.

- Jinni high performance Java based Prolog compiler 1997-2004
- BinProlog Multi-Threaded Prolog Compiler 1990-2006
(about 50 000 lines of Prolog and C-code)
- WordNet Prolog based Voice-Enabled Conversational Agent
- PocketJinni Prolog system for Java-enabled PDAs and Wireless Phones
- Kernel Prolog: Lightweight Prolog Interpreter and Compiler developed in an Object Oriented Style
- The jProlog experimental Prolog-to-Java translator (joint work with Bart Demoen from K.U. of Leuven, Belgium)

Programming Languages

- Procedural and Object Oriented: Java, Scala, C, C#, C++, Ruby, Python, Objective-C
- Logic and Relational: Prolog, Mercury, OWL, RDF, SQL
- Functional: Haskell, Coq, ML, Scheme, Lisp, Miranda
- Scripting: OS X, Linux and Windows shell programming, Tcl/Tk
- Legacy: Pascal, Fortran, Cobol, Basic
- Low Level: x86 and Sparc Assembler
- Internet: XML, HTML, VRML, JavaScript

Operating environments:

- Expert knowledge of UNIX (OS X and Linux) and Windows administration, networking, LANs, WANs
- Extensive knowledge of Unix and Windows software and hardware, communications, networking, socket programming etc.
- Practical knowledge of Android development with Eclipse and iPhone/iPad apps with Xcode
- Various Java and .NET Projects for Pocket PC and Windows Mobile PDAs and cell phones

Natural Languages:

- fluently speaking: English, French, Hungarian, Romanian
- reading ability in: German, Italian, Spanish