Curriculum Vitae

Marin Mircea

Personal data

Full name:	Marin Mircea
Academic degree:	Dipl.-Ing.Dr.tech.
Date and place of birth:	October 9, 1967, Sînpetru German, Romania
Nationality:	Romanian
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Studies and diplomas

Studies

- 10/1987–06/1992: student at the Department of Computer Science, Faculty of Mathematics, University of Timişoara, Romania

- 10/1995–05/2000: Ph.D. student in Technical Sciences at Research Institute for Symbolic Computation (RISC-Linz), Johannes Kepler University, Linz, Austria

- 06/2000–05/2000: postdoc at University of Tsukuba, with a fellowship granted by JSPS (Japan Society for the Promotion of Science)

Diplomas

- 06/1992: M.Sc. in Computer Science

  Master Thesis: *Pyramidal Structures and Pattern Recognition*
  Coordinator: Radu Fantaziu
  University of Timişoara, Romania

- 05/2000: Ph.D. degree from Johannes Kepler University, Linz, Austria

  Ph.D. thesis: *Functional Logic Programming with Distributed Constraint Solving*
  Coordinator: Bruno Buchberger

Professional experience and relevant working places

- 07/1992–09/1993: programmer, Postal Computing Office, Arad, Romania

- 1993-1995: Instructor, Department of Computer Science, Faculty of Mathematics, University of Timişoara, Romania

  Teaching duties: seminars and labworks for the lectures Artificial Intelligence, Functional Programming, Logic Programming, and Data Structures

- 10/1995–05/2000: Ph.D. student in Technical Sciences, with programming and research attributions at RISC-Linz institute in the frame of the following research projects:

  - 10/1996–1996: STEREO-VIDEOMETRY AND SPATIAL OBJECT RECOGNITION coordinated by Sabine Stifter in the frame of the Austrian research project *Theory and Applications of Digital Image Processing and Pattern Recognition*

    Contribution: C++ implementation of a visualizer of surfaces represented by dexel models.

  - 1996-02/1998: HIGH PERFORMANCE GENERIC PROGRAMMING project coordinated by Wolfgang Schreiner.

    Objective: development of a programming environment for the construction of generic software based on the concept of higher-order functors.

  - 1996-2000: voluntary member of the THEOREMA project coordinated by Bruno Buchberger

    Objective: extend the Mathematica system of computational algebra with proving capabilities of mathematical theorems.

    Contribution: implementation of Knuth-Bendix completion procedure in theories represented by a terminating rewrite system, and of a simplifier in some extensions with sequence variables of the first-order equational theories. The simplifier was integrated in the Theorema system.

  - 08/1997–02/1999: main developer in the project DISTRIBUTED CONSTRAINT SOLVING FOR FUNCTIONAL LOGIC PROGRAMMING

    Bilateral research project between RISC-Linz institute and researchers from University of Tsukuba, supported by Research Institute for Advanced Information Technology (AITEC Japan)

    Objective: develop a distributed software system made of a functional logic language interpreter and various constraint solving engines..

    Contribution: an implementation in Mathematica of a collaborative scheme for constraint functional logic programming in a distributed environment.

- 06/2000–05/2002: JSPS postdoc University of Tsukuba, Japan

- 03/2003–09/2004: researcher in the symbolic computation research group from

Johann Radon Institute for Computational and Applied Mathematics, Linz
affiliated with the Austrian Academy of Sciences

- 10/2004–03/2011: Assistant professor at

  Department of Computer Science
  Graduate School of Systems and Information Engineering
  University of Tsukuba, Japan

  where I was involved in teaching the following lectures:

  - Mathematics for Computer Science
  - English in Technologies II
  - Information Processing
  - Models of Computation

  the advanced lectures

  - Advanced Topics in Term Rewriting (2005)
  - Advanced Topics in Symbolic Computation (2006–2010)

  and tutoring the labworks on

  - Equational Reasoning Programming (2005–2009)

- 04/2011–09/2012: programmer at GM Analytic Software SRL, Timişoara.

- 05/2011–09/2011: scientific researcher III at West Universitty of Timişoara.

- 10/2011-09/2015: assistant professor at the Departament of Computer Science, Faculty of Matehematics and Informatics, West University of Timişoara, with teaching duties for

  - Graph Theory and Combinatorics
  - Advanced Data Structures
  - Functional Programming
  - Programare Logică
  - Capitole Speciale de Informatică
  - Calcul Simbolic
  - Advanced Functional and Logic Programming
  - Teoria Grafurilor şi Combinatorică

- since 10/2015: associate professor at the same department, with teaching duties for the same lectures, except Symbolic Computation and Logic Programming.

- since 2018: member of the doctoral school in Computer Science of West University of Timişoara, after receiving my habilitation certificate for doctoral studies in Informatics from the National Ministry of Education (Order number 3783 from 04.06.2018)

Other professional activities

- In 2005: local organiser of Asian Symposium on Programming Languages and Systems (APLAS) at University of Tsukuba, Japan.

- In 2008: co-organiser of the international workshop UNIF, at RISC-Linz institute of Austria, and editor of its proceedings.

- In 2011: guest editor of a special issue on unification of the journal *Logic Journal of the IGPL*.

- In 2008–2013: steering committee member for the international workshop UNIF.

- In 2014, 2016, 2018: visiting professor at Johannes Kepler University of Linz in the frame of Erasmus/Erasmus+ mobility programs, where I taught advanced lectures on Functional and Logic Programming.

- Referee at: Intl. Symposium on Symbolic and Algebraic Computation (ISSAC), 2010; Intl. Conference on Rewriting Techniques and Applications (RTA), 2005, 2008; Intl. Workshop on Functional and (Constraint) Logic Programming (WFLP) 2002–2009; ACM-SIGPLAN Intl. Conference on Principles and Practice of Declarative Programming (PPDP), 2004; Intl. Symposium on Symbolic and Numeric Algorithms for Scientifc Computing (SYNASC), 1999–2010.

- Member of the following program committees: Intl. Symposium on Symbolic and Numeric Algorithms for Scientific Computing (SYNASC), 1999–2009; Intl. Workshop on Functional and (Constraint) Logic Programming (WFLP) 2006–2010; International Workshop on Unification (UNIF), 2008; International Workshop on Automated Specification and Verification of Web Systems (WWV), 2009.

- Since 2011: co-chair of the special track *Advances in the Theory of Computing* of SYNASC symposium.

- 2019: chair of the third Working Formal Methods symposium (FROM 2019) organized at West University of Timişoara.

- Invited speaker at AMINSE 2017 (Tbilisi, Georgia), FROM 2018 (Iaşi, Romania), AMINSE 2019 (Tbilisi, Georgia)

Research & development proiects and grants

1. 01/06/2000–30/05/2002: JSPS postdoc fellowship

   > Host institution: Institute of Information Sciences and Electronics
   > University of Tsukuba, Japonia
   > Guest researcher: Tetsuo Ida
   > Budget: 270 000 JPY/month

2. 04/2005–03/2007: main investigator in the project

3. 04/2008–03/2011: main investigator in the project

List of publications

PhD thesis

M. Marin. Functional Logic Programming with Distributed Constraint Solving, Johannes Kepler University, RISC-Linz Institute, Austria, 2000.
URL: `http://users.info.uvt.ro/~mmarin/papers/thesis.ps`

Articles in international journals

Category A

1. B. Dundua, M. Florido, T. Kutsia, and M. Marin. CLP(H): Constraint logic programming for hedges. *TPLP*, 16(2):141–162, 2016.

2. T. Kutsia and M. Marin. Regular expression order-sorted unification and matching. *JSC*, 67:42–67, 2015.

Category B

3. M. Marin and G. Istrate. Learning Cover Context-Free Grammars from Structural Data. Sci. Ann. Comp. Sci., 24(2):253–286, 2014.

Category C

4. N. Kobayashi, M. Marin, and T. Ida. Collaborative Constraint Functional Logic Programming System in an Open Environment. *IEICE Transactions on Information and Systems*, E86-D(1):63–70, 2003.

5. N. Kobayashi, M. Marin, Y. Tanaka, H. Urushihara. On the Development of an Analysis System for Upstream Sequences in Dictyostelium discoideum Genome. *Computer Software* 22(3):167–172. 2005.

Other categories

6. T. Ida, M. Marin, and N. Kobayashi. An Open Environment for Cooperative Equational Solving. Wuhan University Journal of Natural Sciences, 6(1):169–174, 2001.

7. M. Marin, T. Ida, and W. Schreiner. CFLP: a Mathematica Implementation of a Distributed Constraint Solving System. *Mathematica Journal*, 8(2):287–300, 2001.

8. <u>M. Marin</u> and T. Kutsia. Foundations of the rule-based system ρLog. *Journal of Applied Non-Classical Logics*, 16(1-2):151–168, 2006.

9. <u>M. Marin</u> and T. Kutsia. On the computation of quotients and factors of regular languages. *Frontiers of Computer Science in China*, 4(2):173–184, 2010.

Articles in proceedings of international conferences

Category A

10. B. Buchberger, T. Jebelean, F. Kriftner, <u>M. Marin</u>, E. Tomuţa, and D. Văsaru. *A Survey of the Theorema project*. In W. Kuechlin, editor, Procs. of ISSAC'97 (International Symposium on Symbolic and Algebraic Computation), pages 384–391, Maui, Hawaii, July 1997. ACM Press.

11. <u>M. Marin</u>, T. Ida, and T. Suzuki. On Reducing the Search Space of Higher-Order Lazy Narrowing. *Procs. of FLOPS 1999*. 1999.

12. T. Kutsia and <u>M. Marin</u>. Matching with regular constraints. In G. Sutcliffe and A. Voronkov, editors, *Procs. of LPAR 2005*, volume 3835 of LNAI, pages 215–229, Berlin, Heidelberg, 2005. Springer-Verlag.

13. T. Kutsia and <u>M. Marin</u>. Order-Sorted Unification with Regular Expression Sorts. In C. Lynch, editor, *Procs. of RTA 2010*, volume 6 of LIPIcs-Leibniz International Proceedings in Informatics, pages 193–208, Edinburgh, Scotland, U.K., 2010.

14. B. Dundua, M. Florido, T. Kutsia, and <u>M. Marin</u>. Constraint Logic Programming for Hedges: A Semantic Reconstruction. In M. Codish and E. Sumii, editors, *12th International Symposium in Functional Logic Programming (FLOPS 2014). Proceedings*, volume 8475 of LNCS, pages 285–301, Kanazawa, Japan, June 2014. Springer.

Category B

15. T. Ida, <u>M. Marin</u>. An Open Environment for Cooperative Equational Solving. *Procs. of APLAS 2000*, pages 163–166, Singapore, 2000.

16. N. Kobayashi, <u>M. Marin</u>, T. Ida. Collaborative Constraint Functional Logic Programming in an Open Environment. *Procs. of APLAS 2001*, pages 49–59, Daejeon, Korea, 2001.

17. T. Ida, <u>M. Marin</u>, H. Takahashi. Constraint Functional Logic Programming for Origami Construction. *Procs. of APLAS 2003*, pages 73–88, Beijing, China, 2003.

18. <u>M. Marin</u> and A. Middeldorp. New completeness results for lazy conditional narrowing. In E. Moggi and D. S. Warren, editors, *PPDP 2004*, pages 120–131, New York, NY, USA, 2004. ACM.

19. F. Ghourabi, T. Ida, H. Takahashi, <u>M. Marin</u>, A. Kasem. Logical and algebraic view of Huzita's origami axioms with applications to computational Origami. *Procs. of the 2007 ACM symposium on Applied computing (SAC)*, pages 767–772, 2007.

20. <u>M. Marin</u> and T. Kutsia. Linear Systems for Regular Hedge Languages. In J. Grund-spenkis, M. Kirikova, Y. Manolopoulos, and L. Novickis, editors, *Procs, of Advances in Databases and Information Systems. Associated Workshops and Doctoral Consortium of the 13th East-European Conference, ADBIS 2009*, volume 5968 of LNCS, pages 104–112, Riga, Latvia, 2009. Springer.

21. <u>M. Marin</u> and T. Kutsia. Regular hedge language factorization revisited. In S. Yu, editor, *Procs. of DLT 2010*, volume 6224 of LNCS, pages 328–339, London, ON, Canada, August 2010. Springer.

22. <u>M. Marin</u> and G. Istrate. Learning Cover Context-Free Grammars from Structural Data, volume 8687 of LNCS, pages 241–258. Springer, Bucharest, Romania, 2014.

Category C

23. W. Schreiner, W. Danielczyk-Landerl, <u>M. Marin</u>, and W. Stöcher. A generic program-ming environment for high-performance mathematical libraries. In *Selected Papers from the International Seminar on Generic Programming*, pages 256–268, London, UK, UK, 2000. Springer-Verlag.

24. <u>M. Marin</u> and T. Ida. Cooperative Constraint Functional Logic Programming. *Procs. of WFLP 2000*, pages 382–390, 2000.

25. <u>M. Marin</u>, T. Ida, and T. Suzuki. Higher-order Lazy Narrowing Calculi in Perspective. *Procs. of WFLP 2000*, pages 238–252, 2000.

26. T. Ida, <u>M. Marin</u>, and T. Suzuki. Higher-order lazy narrowing calculus: A solver for higher-order equations. In R. Moreno-Diaz, B. Buchberger, and J. L. Freire, editors, *Procs. of EUROCAST 2001*, volume 2178 of LNCS, pages 479–493, 2002.

27. <u>M. Marin</u> and T. Ida. Rule-based Programming with ρLog. In D. Zaharie, D. Petcu, V. Negru, T. Jebelean, G. Ciobanu, A. Cicortaş, A. Abraham, and M. Paprzycki, editors, *Procs. of SYNASC 2005*, pages 31–38, Timişoara, Romania, 2005. IEEE Computer Society Press.

28. <u>M.Marin</u> and T.Ida. A Rule-Based Framework for Automated Reasoning. In S. il Pae and H. Park, editors, *Procs. of ASCM 2005*, pages 28–31, KIAS, Seoul, Korea, 2005.

29. T. Ida, H. Takahashi, <u>M. Marin</u>, F. Ghourabi, and A. Kasem. Computational Con-struction of a Maximum Equilateral Triangle Inscribed in an Origami. *Procs. of Mathematical Software - ICMS*, volume 4151 of LNCS, pages 361–372, 2006.

30. T. Ida, <u>M. Marin</u>, H. Takahashi, and F. Ghourabi. Computational Origami Construc-tion as Constraint Solving and Rewriting. *Procs. of WFLP'08*, volume 216 of ENTCS, pages 31–44, 2008.

31. <u>M. Marin</u> and A. Crăciun. Factorizations of regular hedge languages. In S. M. Watt, V. Negru, T. Ida, T. Jebelean, D. Petcu, and D. Zaharie, editors, *Procs. of SYNASC 2009*, pages 397–314, Timişoara, Romania, 2009. IEEE.

32. <u>M. Marin</u> and A. Crăciun. Type Inference for Regular Expression Pattern Matching. In T. Ida, V. Negru, T. Jebelean, D. Petcu, S. Watt, and D. Zaharie, editors, *Procs. of SYNASC 2010*, pages 366–373, Timişoara, Romania, 2010. IEEE.

33. T. Kutsia and <u>M. Marin</u>. Solving, Reasoning, and Programming in Common Logic. *Procs. of SYNASC 2013*, pages 119–126, Timişoara, Romania, 2013. IEEE.

34. B. Dundua, T. Kutsia, and <u>M. Marin</u>. Variadic equational matching. In C. Kaliszyk, E. Brady, A. Kohlhase, and C. Sacerdoti Coen, editors, *Intelligent Computer Mathematics (CICM 2019)*, pages 77–92, Cham, 2019. Volume 11617 of LNAI. Springer International Publishing.

35. <u>M Marin</u>, T Kutsia, B Dundua. A Rule-based Approach to the Decidability of Safety of $ABAC_\alpha$. In F. Kerschbaum, A. Mashatan, J. Niu, and A. J. Lee, editors, *Procs. of the 24th ACM Symposium on Access Control Models and Technologies, SACMAT*, pages 173–178, Toronto, ON, Canada, June 2019. ACM.

Other conferences and workshops

36. <u>M. Marin</u>. Functional Programming with Sequence Variables: The Sequentica Package. In J. Levy, M. Kohlhase, J. Niehren, and M. Villaret, editors, *Procs. of the 17th Intl. Workshop on Unification (UNIF'03)*, pages 65–78, Valencia, Spain, 8-9 June 2003. Available as Technical Report DSIC-II/12/03 of Universidad Politecnica de Valencia.

37. <u>M. Marin</u> and D. Ţepeneu. Programming with sequence variables: the Sequentica package. In P. Mitic, P. Ramsden, and J. Carne, editors, *Challenging the Boundaries of Symbolic Computation: Procs. of the 5th International Mathematica Symposium*, pages 17–24. Imperial College Press, 2003.

38. <u>M. Marin</u> and M. Drăgan. A Jini service for collaborative constraint solving. In I. Dziţac, T. Maghiar, and C. Popescu, editors, *Procs. of International Conference on Computers and Communications (ICCC 2004)*, pages 235–240, Oradea, Romania, 2004.

39. <u>M. Marin</u> and F. Piroi. Deduction and Presentation in ρLog. *ENTCS*, 93:161–182, 2004.

40. <u>M. Marin</u> and F. Piroi. Rule-based programming with Mathematica. In *Procs. of Sixth International Mathematica Symposium (IMS 2004)*, pages 1–6, Banff, Alberta, Canada, 2004. Also available as RICAM-Report 2004-03.

41. T. Kutsia and <u>M. Marin</u>. Can context sequence matching be used for querying XML? In L. Vigneron, editor, *Proceedings of the 19th International Workshop on Unification (UNIF'05)*, pages 77–92, Nara, Japan, 22 Apr. 2005.

42. T. Kutsia and <u>M. Marin</u>. Solving regular constraints for hedges and contexts. In J. Levy, editor, *Procs. of the 20th Intl. Workshop on Unification (UNIF'06)*, pages 89–107, Seattle, USA, 11 Aug. 2006.

43. <u>M. Marin</u> and T. Kutsia. Matching with membership constraints for hedge and context variables. In M. Marin, editor, *Procs. of the 22th Intl. Workshop on Unification (UNIF'08)*, pages 55–68, Castle of Hagenberg, Austria, 18 July 2008.

44. <u>M Marin</u>, T Kutsia, B Dundua. A rewrite-based computational model for functional logic programming. *Procs. of SCSS 2016*, pages 95–106. 2016.

Books

45. <u>M. Marin</u>, V. Negru, I. Drămnesc. *Principles and Practice of Functional Programming*. Editura UVT, 2016. 317 pages. ISBN 978-973-125-451-7.

Other publications and contributions

Technical reports

46. B. Buchberger and <u>M. Marin</u>. Proving by Simplification. In B. Buchberger, T. Ida, and D. Văsaru, editors, First International Theorema Workshop, RISC, Hagenberg, Austria, June 9-10 1997. *RISC-Linz Report Series No. 97-20*.

47. B.Buchberger, K.Aigner, C.Dupre, T.Jebelean, F.Kriftner, <u>M.Marin</u>, K.Nakagawa, O. Podişor, E. Tomuţa, Y. Usenko, D. Văsaru, and W. Windsteiger. Theorema: An Integrated System for Computation and Deduction in Natural Style. *RISC Report Series 98–25*, RISC-Linz, Schloss Hagenberg, Austria, December 1998.

48. <u>M. Marin</u>, T. Suzuki, and T. Ida. Refinements of Lazy Narrowing for Left-Linear Fully-Extended Pattern Rewrite Systems. Technical Report ISE-TR-01-180, Institute of Information Sciences and Electronics, University of Tsukuba, 2001. 31 pages.

49. T. Kutsia and <u>M. Marin</u>. Matching with Regular Constraints. Technical Report 05-05, RISC-Linz Institute, Austria, 2005.

In UVT Annals

50. <u>M. Marin</u>, T. Kutsia. Programming with transformation rules. *Analele UVT* 16:163–177. 2003.