

Gabriel Istrate

West University of Timișoara
Bd. V. Pârvan 4, Cam. 047,
Timișoara, RO-300223, Romania.

Web: <http://tcs.ieat.ro/members/gistrate>
Email: gabrielistrate@acm.org
Office Phone/Fax: +40 256 244834

Research
Interests

ALTHOUGH MY INTERESTS (AND WORK) ARE HIGHLY INTERDISCIPLINARY, MY CORE RESEARCH SPANS VARIOUS AREAS OF **Theoretical Computer Science**, AND INCLUDES WORK IN ALGORITHMIC GAME THEORY, ALGORITHMS, DISCRETE MODELS OF COMPLEX SYSTEMS, SOCIAL NETWORKS, MODELS OF SOCIAL DYNAMICS, MULTIAGENT SYTEMS AND AGENT BASED MODELING, COMPUTATIONAL COMPLEXITY (ESPECIALLY PROOF COMPLEXITY), PROBABILISTIC AND RANDOMIZED METHODS IN COMBINATORICS.

Education &
Certifications

Habilitation to direct Research, **Computer Science**, **West University of Timișoara**
(Defense: June 5, 2015)
Thesis Title: “Complex Systems ideas in Theoretical Computer Science: from Computational Complexity to Social Dynamics”

Ph.D. in Computer Science **University of Rochester, Rochester, NY**
(Defense: May 28 1999)
Thesis Title: “Phase transitions in combinatorial optimization problems: towards rigorous results”
Advisor: Prof. Mitsunori Ogihara

M.S., Computer Science **University of Rochester, Rochester, NY**
May 1996

License in Mathematics **University of Bucharest, Bucharest, Romania**
(June 1994. A 5 year program roughly equivalent in breadth to a U.S. M.Sc. It involved Comprehensive Examinations and a Thesis.)
Thesis Title: “Darboux-type properties in Real Analysis”
Advisor: Prof. Solomon Marcus

Employment

History

- **Professor (September '18 – present)**
West University of Timișoara Timișoara, Romania
- **Associate Professor (September '12 – August '18)**
West University of Timișoara Timișoara, Romania
- **Associate Researcher (March '07 – present)**
eAustria Research Institute Timișoara, Romania
- **Researcher (a.k.a. technical staff member, Sept. '01 – February '07)**

- **Postdoctoral fellow (September '99 – August '01)**
Center for Nonlinear Science, Los Alamos National Laboratory
- **Summer Instructor, Research & Teaching Assistant Computer Science Department**
University of Rochester

Awards, [More significant achievements are highlighted by coloring them.](#)

Grants &

- Achievements
- [Have written papers in collaboration with leading scientists such as Moshe Vardi \(Rice, Gödel prize 2000\), Mark Jerrum \(Queen Mary, Gödel prize 1996, Fulkerson prize 2006\), Cris Moore \(Sante Fe Institute, APS, AAAS, AMS Fellow\), Samuel Buss \(UC San Diego\)](#)
 - [Mihai Ghermănescu prize for the research activity, West University of Timișoara, 2016.](#)
 - [Result in paper \[R12\] in the paper list below is **included \(as a problem\) in D. Knuth, “The Art of Computer Programming”, vol. 4, prefascicle 0B.**](#)
 - [Cited in top venues such as ACM Symposium on the Theory of Computing \(STOC\), IEEE Symposium on Foundations of Computer Science \(FOCS\), ACM-SIAM Symposium on Discrete Algorithms \(SODA\), National Conference on Artificial Intelligence \(AAAI\), Physical Review Letters, Journal of Artificial Intelligence Research, Machine Learning, Handbook of Satisfiability, Handbook of Constraint Programming.](#)
 - [Los Alamos National Laboratory Achievement Award \(for being part of the team that completed the Los Angeles Case Study\), August 31 2005.](#)
 - [PI, CNCS-IDEI Grant ATCO, Advanced techniques in optimization and computational complexity, Contract PN-III-P4-ID-PCE-2016-0842, July 2016 December 2019.](#)
 - [PI, CNCS-IDEI Grant STRUCTCOMB, Structure and computational difficulty in combinatorial optimization: an interdisciplinary approach. Contract IDEI PN-II-ID-PCE-2011-3-0981. May 2012 December 2015.](#)
 - [PI, Marie Curie International reintegration grant IRG-046573, ”Phase transitions in Computational Complexity and Formal Verification: Towards Generic and Realistic Approaches”, Granted by the E.U. under FP6, March 2007-March 2010.](#)
 - [PI, “New Approaches to Fault Tolerance”, WSR, Los Alamos National Laboratory, July 2005. Gave up the PI position as a consequence of returning to Romania.](#)
 - [Co-PI, LDRD-ER “Advanced Techniques in Discrete Simulation”, Los Alamos National Laboratory, June 2001.](#)
 - [Director funded Postdoctoral Fellowship, Los Alamos National Laboratory, 1999.](#)
 - [Member of the research team in various projects, too many to list.](#)
 - [EPSRC Fellowship, EPSRC/LMS Workshop on Phase transitions in computer science, Liverpool, England, Jan. 1999.](#)

- First prize, Romanian National Mathematical Olympiad, 1988.
- Third prize, Romanian National Mathematical Olympiad, 1982.
- Honorable mentions, Romanian National Mathematical Olympiad, 1984, 1985, 1986, 1987.

- Professional Activities
- Editorial Board Member, *Computer Science Review* (Elsevier).
 - Recent invited talks: SWORDS 2017 (Szeged), DCFS 2016, DACS 2014 (Bucharest).
 - PC member for conferences such as SOFSEM 2019, FOIKS 2018, ALGOSENSORS 2017, MCU 2018, 2015, 2011, ICALP 2002, MATCOS 2010,2013,2016,2019, SYNASC 2008-2020.
 - Organizer, computer science workshop, Diaspora Științifică, 2016.
 - Lead organizer of the Workshop on Modeling and Simulation for Large Scale Sociotechnical Systems, part of the LACSI 2005 Conference, Santa Fe NM, October 11-13 2005.
 - Coorganizer (with Allon Percus) of the *Phase Transitions in Computer Science* track, American Association for Advancement of Science (AAAS) Meeting, Seattle, WA, 12-16 Feb 2004.
 - Coorganizer, CNLS (Center for Nonlinear Science) 23rd Annual Conference, Santa Fe, 12-16 May 2003.
 - Coorganizer of the *Workshop on Statistical Physics and Algorithmic Complexity*, September 4–6 2001, Santa Fe, NM.
 - Reviewer for various journals and conferences, including *Random Structures and Algorithms*, *Algorithmica*, *RAIRO - Informatique Theorique*, *Wireless and Mobile Computing*, *Theoretical Computer Science*, *Information Processing Letters*, *Journal Of Universal Computer Science*, *International Journal of Foundations of Computer Science*, *Discrete Applied Mathematics*, *Discrete Mathematics*, *Chaos*, *Real Analysis Exchange*.
 - Reviewer for conferences such as *ICALP 2019*, *WAOA 2019*, *CIE 2019*, *FAW 2017*, *CIE 2015*, *MFCS 2011*, *CSR 2009*, *LFCS 2009*, *JACIL-UNIF 2009*, *INFOCOM 2007*, *SAT 2006*, *MOBIHOC 2006*, *ICDCS 2005*, *CCC 1999*, *MFCS 1999*, *STACS 1998*, *CCC 1996*, *ISAAC 1996*, *ICCI 1996*.
 - Member of various professional societies, including Association for Computing Machinery (ACM), the ACM Special Interest Group on Automata and Computability Theory (SIGACT) and the Computability in Europe (CIE) association.

Publications [Most significant publications are highlighted by coloring them.](#)

- **Books/Ph.D. Thesis**
 - G. Istrate “Phase transitions in combinatorial search problems: towards rigorous results”, UMI Proquest Information and Learning, 1999, ISBN:0-599-49869-2.
- **Edited books**
 - A. Percus, G. Istrate and C. Moore *Computational Complexity and Statistical Physics*, Oxford University Press, ISBN 0-19-517738-X, February 2006. Part of *The Santa Fe Institute Lecture Series on the Sciences of Complexity*.

• **Publications in refereed journals**

1. [R30] János Balogh, Cosmin Bonchiş, Diana Diniş, Gabriel Istrate, Ioan Todinca. *On the heapability of finite partial orders.*, Discrete Mathematics and Theoretical Computer Science, vol. 22, no 1, (2020), paper # 17.
2. [R29] James Aisenberg, Maria Luisa Bonet, Sam Buss, Adrian Craciun and Gabriel Istrate, *Short Proofs of the Kneser-Lovász Coloring Principle*, Information and Computation (special issue dedicated to invited papers from ICALP 2015), vol 261(2), pp. 296-310, 2018. Final version of conference paper [H] below.
3. [R28] Zoltan Neda, Larissa Davidova, Szerena Ujvari, Gabriel Istrate, *Gambler's ruin problem on Erdos-Renyi graphs*, Physica A: Statistical Mechanics and its Applications, 468, 2017.
4. [R27] G. Istrate, *Two notes on generalized Darboux properties and related features of additive functions*. Annals of the University of Bucharest Informatics Series (special issue dedicated to professor Solomon Marcus' 90th birthday) Anul LXII, no. 2, 61-77, (2015).
5. [R26] Gabriel Istrate, *Reachability and Recurrence in a Modular Generalization of Annihilating Random Walks (and lights-out games) to hypergraphs*, Theoretical Computer Science, 580, 2015.
6. [R25] Gabriel Istrate, *Identifying almost-sorted permutations from TCP buffer dynamics*, Scientific Annals of Computer Science (special issue dedicated to professor Sergiu Rudeanu's 80th birthday), XXV (1), 2015.
7. [R24] M. Marin, G. Istrate *Learning Cover Context-Free Grammars from Structural Data*. Scientific Annals of Computer Science (special issue dedicated to ICTAC'14). Vol. 24 Issue 2, p253-286, 2014. Final version of conference paper [G] below.
8. [R23] C. Bonchis and G. Istrate, *Improved approximation algorithms for low-density instances of the Minimum Entropy Set Cover Problem*, Information Processing Letters, 114(7), 2014.
9. [R22] G. Istrate, M.V. Marathe and S.S. Ravi *Adversarial scheduling in discrete models of social dynamics*, Mathematical Structures in Computer Science, Volume 22, Issue 5, pp. 788-815, 2012. Varianta finală a lucrării [F] din lista de mai jos.
10. [R21] G. Istrate. *On the Dynamics of Social Balance on General Networks (with an application to XOR-SAT)* Fundamenta Informaticae, vol. 91, no. 2, pp. 341-356, 2009
11. [R20] Gabriel Istrate, *Geometric Properties of Satisfying Assignments of random ϵ -1-in- k SAT*, International Journal of Computer Mathematics, 86(12), 2009.
12. [R19] A. Percus, G. Istrate, B. Tavares Gonçalves, R. Sumi, S. Boettcher *The Peculiar Phase Structure of Random Graph Bisection*, Journal of Mathematical Physics vol. 49, no. 12 (2008).
13. [R18] A. Hansson, G. Istrate *Counting preimages of TCP reordering patterns*, Discrete Applied Mathematics, vol. 156, no. 17, (2008) pp. 3187-3193.
14. [R17] G. Istrate, *Satisfying Assignments of Boolean Random CSP: Clusters and Overlaps*, Journal of Universal Computer Science, vol 13, no.11, pp. 1655–1670 (2007).
15. [R16] C. Moore, G. Istrate, D. Demopoulos and M. Vardi *A continuous-discontinuous second order transition in the satisfiability of a class of random*

Horn formulas. *Random Structures and Algorithms* 31(2), pp. 173-185, 2007.
Final version of paper [E] below.

16. [R15] A. Hansson, G. Istrate, S. Kasiviswanathan, *Combinatorics of TCP packet reordering*, *Journal of Combinatorial Optimization*, vol. 12, no. 1-2, pp. 57-70, 2006.
17. [R14] G. Istrate, A. Percus and S. Boettcher *Spines of random constraint satisfaction Problems: Definition and Connection with Computational Complexity*, *Annals of Mathematics and Artificial Intelligence*, Volume 44, (2005), pp. 353 - 372. Varianta finală a lucrării [A] din lista de mai jos.
18. [R13] G. Istrate, *Threshold properties of of boolean random constraint satisfaction problems*. *Discrete Applied Mathematics* 2005, vol. 153 (2005), nr. 1-3, pp. 1-182.
19. [R12] G. Istrate, *The phase transition in random Horn satisfiability and its algorithmic implications*, *Random Structures and Algorithms*, 4 (2002), pp. 483–506. (final version, combining conference papers [B,C] below).
20. [R11] M. Dyer, L. Goldberg, C. Greenhill, G. Istrate and Mark Jerrum, *The convergence of the Prisoner's Dilemma Game*. *Combinatorics, Probability and Computing* 11(2002), no. 2, pp. 135-147.
21. [R10] R. Bent, M. Schear, L. Hemaspaandra and G. Istrate, *A note on bounded-width error-correcting codes*, *Journal of Universal Computer Science* vol. 5, no.12(1999), 817-827.
22. [R9] G. Istrate, The strong equivalence of ETOL grammars, *Information Processing Letters*, 62(1997), 171–177 (varianta finală a lucrării [D] din lista de mai jos).
23. [R8] G. Istrate, Sums of Continuous and Darboux Functions, *Real Analysis Exchange*, 20(2), 1994/95, 842–847.
24. [R7] G. Istrate, G. Păun Some combinatorial properties of self-reading sequences, *Discrete Applied Mathematics*, vol. 55, 1994, 83–87.
25. [R6] G. Istrate, Self-reading sequences, *Discrete Applied Mathematics*, vol. 50, 1994, 201–204.
26. [R5] C. Calude, G. Istrate and M. Zimand, Recursive Baire classification and speedable functions, *Zeitschrift fur Mathematische Logik und Grundlag. der Mathematik*, 38, 1992, 169-178.
27. [R4] G. Istrate, On two generalizations of the Darboux property, *Real Analysis Exchange*, 17, 1991/92, 535–544.
28. [R3] C. Calude and G. Istrate, Determining and stationary sets for some classes of partial recursive functions, *Theoretical Computer Science*, vol 82 (1991), 151–156.
29. [R2] G. Istrate, On the topological size of the class of boolean-valued partial recursive functions, *Annals of the University of Bucharest, Ser. mat-info.*, vol. 2(1989).
30. [R1] G. Istrate, On a problem about contextual languages, *Bulletin mathématique de la Société des sciences mathématiques de Roumanie*, 33(81), 1989.

• **Articles in Refereed Volumes**

31. [V3] A. Percus, G. Istrate, C. Moore “When Statistical Mechanics Meets Computation”, in *Computational Complexity and Statistical Physics*, pp. 3–30, Oxford University Press, Februarie 2006.

32. [V2] G. Istrate, Critical behavior in the satisfiability of random k -Horn formulae, in *"Graphs, Morphisms and Statistical Physics"*, P. Winkler and J. Nešetřil (editors), pp. 113-136, AMS-DIMACS Series in Discrete Mathematics and Theoretical Computer Science, 2004.
 33. [V1] G. Istrate, Some remarks on almost periodic strings and sequences, in G. Păun (editor), *Mathematical Linguistics and Related topics*, Ed. Academiei, Bucharest 1994.
- **Articles in Refereed Conference Proceedings (without journal versions)**
 34. [C18] Karthekeyan Chandrasekaran, Elena Grigorescu, Gabriel Istrate, Shubhang Kulkarni, Young-San Lin, Minshen Zhu. The Maximum Binary Tree Problem. In Proceedings of ESA'2020, the 28th European Symposium on Algorithms. LIPICS, Leibniz Proceedings in Informatics, vol. 173, paper #79, 2020.
 35. [C17] Gabriel Istrate, Cosmin Bonchiş, Claudiu Gatina. It's Not Whom You Know, It's What You (or Your Friends) Can Do: Coalitional Frameworks for Network Centralities. In Proceedings of AAMAS'2020.
 36. [C16] Gabriel Istrate, Cosmin Bonchiş, Alin Brînduşescu. Attacking Power Indices by Manipulating Player Reliabilities. In Proceedings of AAMAS'2019.
 37. [C15] Gabriel Istrate, *Stochastic Stability in Schelling's Segregation Model with Markovian Asynchronous Update*, in Proceedings of Fifth International Workshop on Asynchronous Cellular Automata and Asynchronous Discrete Models (ACA'2018, satellite workshop of ACRI'2018), Lecture Notes in Computer Science, 2018.
 38. [C14] Cosmin Bonchiş, Gabriel Istrate, Vlad Rochian *The language (and series) of Hammersley-type processes*, Proceedings of the 8th Conference on Machines, Computations and Universality (MCU'18), June 28-30, 2018, Fontainebleau, France, Lecture Notes in Computer Science vol 10881 Springer Verlag, p.69-87, 2018.
 39. [C13] Gabriel Istrate, Cosmin Bonchiş Heapability, interactive particle systems, partial orders: Results and open problems International Workshop on Descriptive Complexity of Formal Systems (DCFS'16), Lecture Notes in Computer Science volume 9777, 18-28, 2016.
 40. [C12] Gabriel Istrate, Cosmin Bonchis, Liviu P Dimu, *The Minimum Entropy Submodular Set Cover Problem*, Proceedings of the 10th International Conference on Language and Automata Theory (LATA'16), Lecture Notes in Computer Science, Vol. 9618, pp. 295-306, 2016.
 41. [C11] G. Istrate, C. Bonchis. *Partition into Heapable Sequences, Heap Tableaux and a Multiset Extension of Hammersley's Process*, 26th Annual Symposium on Combinatorial Pattern Matching (CPM'15), Ischia Island, Italy, June 29-July 1, Lecture Notes in Computer Science, Vol. 8133, p 261-271, 2015.
 42. [C10] G Istrate, A Craciun. *Proof complexity and the Kneser-Lovász Theorem*. Proceedings of the 17th International Conference on Theory and Applications of Satisfiability Testing (SAT'14), Held as Part of the Vienna Summer of Logic, VSL 2014, Vienna, Austria, July 14-17, 2014. Lecture Notes in Computer Science, vol 8561, pp,138-153, Springer, 2014.
 43. [C9] G. Istrate *Dissecting the Artificial: The adversarial scheduling approach to validating game-theoretic models and Social Simulations*. in Proceedings of the Fifth Conference of the European Social Simulation Association (ESSA'08), Brescia, Italia 1-5 Septembrie 2008.

44. [C8] G. Istrate, M.V. Marathe, S. S. Ravi. *Adversarial Scheduling Analysis of Game-Theoretic Models of Norm Diffusion*. Proceedings of the Fourth Computability in Europe Conference (CIE'2008), Lecture Notes in Computer Science vol 5028, 273–282, Springer Verlag, 2008.
45. [C7] G. Istrate, A. Hansson, C.D. Tallman, L. Cuellar-Hengartner, N. Hengartner *Towards Generative Activity-Based Models for Large-Scale Socio-technical Simulations (extended abstract)*, Proceedings of the Agent 2006 Conference on: Social Agents: Results and Prospects, organized by Argonne National Laboratory and The University of Chicago, Chicago IL, September 21-23, 2006.
46. [C6] G. Istrate, A. Hansson and G. Yan *Packet Reordering Metrics: Some Methodological Considerations*, in Proceedings of the Second International Conference on Networking and Services (ICNS'06), San Jose CA, ISBN 0-7695-2622-5. IEEE Computer Society Press, 2006.
47. [C5] G. Istrate, A. Hansson, M. Nassr, C. Barrett, M.V. Marathe, *Semantic compression of TCP traces*, in Proceedings of the Fifth IFIP Conference on Networking (NETWORKING 2006), F. Boavida et al. (editors), Lecture Notes in Computer Science vol 3976, pp. 123-135, Springer Verlag.
48. [C4] C. Barrett, G. Istrate, M. Marathe, S. Thite, V.S. Anil Kumar, *Strong Edge Coloring for Channel Assignment in Wireless Radio Networks*, in Proceedings of the First IEEE Workshop on Foundations and Algorithms for Radio Networks (FAWN 2006). I.E.E.E. Computer Press.
49. [C3] D. Achlioptas, A. Chtcherba, G. Istrate and C. Moore, *The phase transition in NAE 3-SAT and 1-in-k SAT*. In *Proceedings of the 13th ACM-SIAM Symposium on Discrete Algorithms (SODA'01)*.
50. [C2] G. Istrate, *Computational Complexity and Phase Transitions*, *the 15th I.E.E.E. Conference on Computational Complexity, (CCC'00)*, Florence, Italy, July 2000.
51. [C1] G. Istrate, *Counting, structure identification and maximum consistency in binary constraint satisfaction problems*, *The Third International Symposium on Constraint Programming (CP'97)*, Linz, Austria, 1997, Lecture Notes in Computer Science #1330, pp. 136–149, Springer Verlag.

• **Unpublished Technical reports**

52. A. Hansson, G. Istrate, L. Cuellar, C.D. Tallman, N. Hengartner, H. Djidjev, M. Onus, R. Raman *Generic Cities: Activity Modeling, Part I*, Technical Report LA-UR 06-7484, Los Alamos National Laboratory, Los Alamos, NM, 2006.
53. G. Istrate, S. Kasiviswanathan, A.G.Percus *The Cluster Structure of Bisections of Sparse Random Graphs*, Technical Report LA-UR 06-6566, Los Alamos National Laboratory, Los Alamos, NM, 2006.
54. B.T. Goncalves, G. Istrate, A. Percus, S. Boettcher *The core peeling algorithm: an experimental evaluation*, Technical Report LA-UR 06-6863, Los Alamos National Laboratory.
55. A. Percus, G. Istrate, S. Kasiviswanathan, S. Boettcher, B.T. Goncalves, N. Hengartner *Belief Propagation for graph bisection*, Technical Report LA-UR 06-6868, Los Alamos National Laboratory.
56. S. Eidenbenz, F. Pan, S. Thulasidasan, K. Brislawn, A. Hansson, G. Istrate, C. Reydis, J.P. Smith, W. Wang, V. Ramaswamy, S. Granen *“MIITS-System*

Design”, Technical Report LA-UR 06-1473, Los Alamos National Laboratory, Los Alamos, NM, 2006.

57. K. A. Atkins, C. L. Barrett, R. J. Beckman, S. G. Eubank, N. W. Hengarter, G. Istrate, V. S. Anil Kumar, M. V. Marathe, H. S. Mortveit, C. M. Reidys, P. R. Romero, R. A. Pistone, J. P. Smith, P. E. Stretz, C. D. Engelhart, M. Drozda, M. M. Morin, S. S. Pathak, S. Züst, and S. S. Ravi, “ADHOPNET: Integrated tools for end-to-end analysis of extremely large next generation telecommunication networks”, Technical Report LA-UR 03-2076, Los Alamos National Laboratory, Los Alamos, NM, 2003.
58. G. Istrate and C. Homan *Small worlds, locality and flooding on landscapes*, URCS TR-796, 2003.
59. G. Istrate *Computational Complexity and Phase Transitions*, Research Highlights, Center for Nonlinear Sciences, LANL, June/July 2000.
60. G. Istrate *Resource bounded measure and autoreducibility*, URCS TR-644, November 1996.
61. G. Istrate *Looking for a version of Schaefer’s dichotomy theorem when each variable appears at most twice*, URCS TR-652, March 1997.

- **Refereed conference publications superseded by journal versions**

- [A]. G. Istrate, The strong equivalence of ETOL grammars, in G. Rozenberg and A. Salomaa (editors), *Proceedings of the first conference “Developments in Language Theory” (DLT’93)*, Turku, Finland, July 12-16, 1993, World Scientific.
- [B]. G. Istrate and M. Ogihara, The Phase Transition in Random Horn Satisfiability, *the Fifth International Conference on Artificial Intelligence and Mathematics, (AIM’98)*, Fort Lauderdale, FL, January 1998.
- [C]. G. Istrate, The Phase Transition in Random Horn Satisfiability and its algorithmic implications, *Proceedings of the Tenth ACM-SIAM Symposium on Discrete Algorithms (SODA’99)*, Baltimore MD, January 1999.
- [D]. G. Istrate, A. Percus and S. Boettcher “Spines of random constraint satisfaction Problems: Definition and Impact on Computational Complexity”, *Proceedings of the 8th International Symposium on Artificial Intelligence and Mathematics (AIMATH ’04) AI&M 2-2004*.
- [E]. C. Moore, G. Istrate, D. Demopoulos and M. Vardi *A continuous-discontinuous second order transition in the satisfiability of a class of random Horn formulas*, in *Proceedings of the Eighth International Workshop on Randomization and Computation RANDOM’05*, Lecture Notes in Computer Science 3624, pp. 414-425, Springer Verlag, 2005.
- [F]. G. Istrate, M. V. Marathe and S. S. Ravi, Adversarial Models in Evolutionary Game Dynamics. In *Proceedings of the 13th ACM-SIAM Symposium on Discrete Algorithms (SODA’01)*.
- [G] Mircea Marin, Gabriel Istrate Learning Cover Context-Free Grammars from Structural Data. *Proceedings of ICTAC 2014*: 241-258
- [H] James Aisenberg, Maria Luisa Bonet, Sam Buss, Adrian Craciun, Gabriel Istrate: Short Proofs of the Kneser-Lovsz Coloring Principle. *Proceedings of ICALP 2015*: 44-55

- **Other publications**

1. Abstract of Presentation, in *Proceedings of the AGENTS 2005 Conference “Generative Social Processes, Models, and Mechanisms”*, ANL/DIS-05-6, ISBN

0-9679168-5-2, C.M. Macal, D. Sallach and M. North (editors), co-sponsored by the Argonne National Laboratory and the University of Chicago, October 12-15, 2005.

2. Review of “Parameterized Complexity” by R. Downey and M. Fellows, *SIGACT News*, November 2000.
3. Over 15 articles in undergraduate and recreational mathematical journals in Romania.
4. Author of Problem 3, the 35-th International Mathematical Olympiad, Hong Kong, 1994.

Service

West University of Timișoara

- Director, Ph.D. School in Computer Science, 2016 - present.
- Member, Computer Science commission, CNCS (Romanian equivalent of NSF), 2012-2014 and 2020-present.

Los Alamos National Laboratory

- LDRD ER Committee Member, Computer Science and Engineering, 2006-2007.
- LDRD ER Committee Member, Computer Science and Engineering, 2002 - 2004.
- L.A.N.L.- University of California Panel on research policy, 2001- 2003.
- CNLS Forum Presentation, September 2000.
- CNLS Research Highlights, June/July 2000.

University of Rochester

- student member of the Admissions Committee, 1995-1999,
- student member of the Comprehensive Examinations Committee, 1995-1999.
- assisted Prof. Lane Hemaspaandra in managing the “Computational Complexity” section of the ACM Computer Research Repository (CORR).

Computing Experience

- **Software experience:** C/C++, Python, R, Mathematica, Java, Lisp, Go, various PC and UNIX/Solaris/Linux software.
- **Software engineering knowledge/experience:** UML and UML tools (Metamill, Enterprise Architect), unit-testing (test-driven design), design patterns. Practical experience in a software project involving UML design, CVS, unit testing (Cp-punit), design patterns.

Languages

Romanian (native), English (excellent), French (very good), Spanish (fair).