Curriculum vitae

Ioana Leuştean
Professor
Department of Computer Science,
Faculty of Mathematics and Computer Science,
University of Bucharest, Romania.
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Education

[2017] Habilitation in Computer Science, University of Bucharest, Romania
Habilitation Thesis: *"Topics in many-valued logics"*

[2004] Ph.D. in Mathematics, University of Bucharest, Romania
Ph.D. Thesis: *"Contributions to the theory of MV-algebras. MV-modules"*
Scientific Supervisor: *Prof. Sergiu Rudeanu*

[1996] M.Sc. in Fundamentals of Computing, University of Bucharest, Romania

[1995] B.A. in Mathematics, University of Bucharest, Romania

Positions held

[October 2017 - present] Professor, University of Bucharest, Romania

[October 2012 - September 2017] Associate Professor, University of Bucharest, Romania

[1999 - September 2012] Assistant Professor, University of Bucharest, Romania

[1996 - 1999] Teaching Assistant, University of Bucharest, Romania

Administrative positions

[February 2020 - February 2024] Dean, Faculty of Mathematics and Computer Science, University of Bucharest, Romania.

Research interests

Current research interests are in the area of logic for specification and verification, with a particular focus in many-sorted modal logic. Former research belongs to the area of *many-valued logic*, which I approached from various perspectives: logical, algebraic, probabilistic.
Current PhD students: Bogan Macovei, Andrei Ciobanu
Former PhD students: Natalia Moanga (Ozunu)

Awards

The 2008 *"Grigore Moisil"* Prize of the Romanian Academy, awarded in 2010.

Grants

[October 2015 - September 2017] Grant CNCS PN-II-RU-TE-2014-4-0730
University of Bucharest, Romania
Project: *"Modelling uncertainty in non-classical logics"*
Grant position: Project Director

Postdoctoral fellowships

[October 2010 - March 2013] POSDRU/89/1.5/S/58852
University of Bucharest, Romania
Project: *Many-Valued Logics: theoretical aspects and applications*

[September 2007 - August 2009] "Alexander von Humboldt" Research Fellowship

Technische Universität Darmstadt, Germany
Project: *Rings, Modules and Riesz Spaces in the theory of MV-algebras*

Past editorial activities
[- February, 2023] Member of the editorial board of Soft Computing.

Referee for peer-reviewed journals
Fuzzy Sets and Systems, Journal of Multiple-Valued Logic and Soft Computing, Discrete Mathematics, Order, Huston Journal of Mathematics, Journal of Pure and Applied Algebra, Algebra Universalis, Indagationes Mathematicae.

Teaching experience
[2009 - present] Lecturer for the following courses:
- "Special Topics in Logic and Security" (master course, 2nd year, one module)
- "Implementation of Concurrent Systems in Programming Languages" (master course, 1st year)
- "Declarative Programming" (undergraduate course, 3rd year)
- "Web Techniques" (undergraduate course, 2nd year)
- "Logic Programming" (undergraduate course, 2nd year)
- "Mathematical and Computational Logic" (undergraduate course, 1st year)

Conferences

Invited talks

[T10] SYNASC 2020: 22nd International Symposium on Symbolic and Numeric Algorithms for Scientific Computing (online event),
Timisoara, Romania.
https://synasc.ro/2020/
[T9] DACS: Days of Computer Science 2016,
Bucharest, Romania, July 3-4, 2016.
http://fmi.unibuc.ro/dacs2016/
[T8] Soft Computing Days 2016,
Salerno, Italy, May 23-25, 2016.
http://logica.dmi.unisa.it/workshop-soft-computing-days/
[T7] Beyond True and False: Logic, Algebra and Topology,
Florence, Italy, December 3-5, 2014
http://local.disia.unifi.it/Beyond2014/
Title: *Applications of the semisimple tensor product of MV-algebras*
[T6] 35th Linz Seminar on Fuzzy Set Theory,
Linz, Austria, February 18-22, 2014.
http://www.flll.jku.at/div/research/linz2014/index.html
Title: *Probabilities in Łukasiewicz logic*
[T5] "Proof", An International Conference within the Frame of Humboldt Kollegs,
Bern, Switzerland, September 9-13, 2013.
http://www.humboldt-kolleg.iam.unibe.ch/hb_main.html
Title: *Linearity issues in Łukasiewicz logic*
[T4] Anniversary Conference: Faculty of Science 150 years,
Bucharest, Romania, August 29-September 1, 2013

http://fmi.unibuc.ro/FMI-150/
Title:*A propositional logic related to the Pierce-Birkhoff conjecture*

[T3] "ManyVal'12", Salerno, Italy, July 4-7, 2012.
http://logica.dmi.unisa.it/manyval12/
Title: *MV-modules*

[T2] "Logic, Algebra and Truth Degrees" (LATD 2010), Prague, September 7-11, 2010.
http://www.mathfuzzlog.org/latd2010/index.php
Title: *Linearity issues in MV-algebras*

[T1] "Probability, Uncertainty and Rationality", Pontignano, Siena, Italy, November 1-3, 2009.
http://homepage.sns.it/hosni/lori/events/pura09/
Title: *Algebra and probability in Lukasiewicz logic*

Organization

International workshops as main organizer
- *"ManyVal 2019"*, November 1-3, 2019, Bucharest, Romania
- *"Algebra and Probability in Many-Valued Logics"*, May 7-9, 2009, Darmstadt, Germany (financed by Alexander von Humboldt Foundation)

Special sessions at international conferences
- *"Automata, logic and infinite games"* at Computability in Europe CiE 2015, Bucharest, Romania, June 29 – July 3, 2015 (with Dietmar Berwanger)
- *"Formal Methods to Deal with Uncertainty of Many-Valued Events"* at 14th International Conference on Information Processing and Management of Uncertainty in Knowledge-based Systems IPMU 2012, Catania, Italy, July 9-13, 2012 (with Tommaso Flaminio and Enrico Marchioni)

Publications

Papers in peer-reviewed journals

[J31] N. Moangă, I. Leuştean, T.F. Şerbănuţă, Many-Sorted Hybrid Modal Languages, JLAMP 120, Journal of Logical and Algebraic Methods in Programming 120, 100644, 2021.

[J30] N. Moangă, I. Leuştean, T.F. Şerbănuţă, A many-sorted polyadic modal logic, Fundamanenta Informaticae, 173 (2-3), 191-215,2020.

[J29] S. Lapenta, I. Leuştean, On the semisimple tensor product of MV-algebras, Fuzzy Sets and Systems 197, 140-151, 2020.

[J28] A. Di Nola, S. Lapenta, I. Leuştean, Infinitary logic and basically disconnected compact Hausdorff spaces, Journal of Logic and Computation 28(6), 1275-1292, 2018.

[J27] A. Di Nola, S. Lapenta, I. Leuştean, An analysis of the logic of Riesz Spaces with strong unit, Annals of Pure and Applied Logic 169(3), 216-234, 2018

[J26] S. Lapenta, I. Leuştean, Notes on dvisible MV-algebras, Soft Computing, 21(21), 6213-6223, 2017.

[J25] S. Lapenta, I. Leuştean. Stochastic independence for probability MV-algebras. Fuzzy Sets and Systems 298, 94–206, 2016.

[J24] S. Lapenta, I. Leuştean. Scalar extensions for algebraic structures of Lukasiewicz logic. Journal of Pure and Applied Algebra, 220: 1538-1553, 2016, doi:10.1016/j.jpaa.2015.09.017.

[J23] S. Lapenta, I. Leuştean. Towards understanding the Pierce-Birkhoff conjecture via MV-algebras. Fuzzy Sets and Systems, 276: 114-130, 2015.

[J22] D. Diaconescu, I. Leuştean. The Riesz MV-algebra hull of an MV-algebra. Mathematica Slovaca, 65(4): 801–816, 2015. Special issue in honor of Antonio Di Nola.

[J21] D. Diaconescu, I. Leuştean. Mutually exclusive nuances of truth in Moisil logic. Scientific Annals of Computer Science "Alexandru Ioan Cuza" Univ. of Iasi, 25:69-88, 2015. Special issue dedicated to Professor Sergiu Rudeanu on his 80th birthday.

[J20] A. Di Nola, I. Leuştean. Łukasiewicz logic and Riesz spaces. Soft Computing, 18(12): 2349-2363, 2014.

[J19] D. Diaconescu, T. Flaminio, I. Leuştean. Lexicographic MV-algebras and lexicographic states. Fuzzy Sets and Systems, 244:63-85, 2014.

[J18] I. Leuştean. Hahn-Banach theorems for MV-algebras. Soft Computing, 16(11): 1845-1850, 2012

[J17] I. Leuştean. Metric completions of MV-algebras with states. An approach to stochastic independence. Journal of Logic and Computation, 21(3):493-508, 2011.

[J16] I. Leuştean. Tensor products of probability MV-algebras. Journal of Multiple-Valued Logic and Soft Computing, 16(3-5):405-419, 2010.

[J15] I. Leuştean. A determination principle for algebras of n-valued Łukasiewicz logic. Journal of Algebra, 320: 3694-3719, 2008.

[J14] I. Leuştean. α-convergence and complete distributivity in MV-algebras. Journal of Multiple-Valued Logic and Soft Computing, 12(3-4):309-315, 2006.

[J13] G. Georgescu, I. Leuştean, A. Popescu. Order convergence and distance on Łukasiewicz-Moisil algebras. Journal of Multiple-Valued Logic and Soft Computing, 12(1-2):33-69, 2006.

[J12] B. Gerla, I. Leuştean. Similarity MV-algebras. Fundamenta Informaticae, 69(3):287-300, 2006.

[J11] I. Leuştean. Non-commutative Łukasiewicz propositional logic. Archive for Mathematical Logic, 45(2):191-213, 2006.

[J10] P. Flondor, I. Leuştean. MV-algebras with operators: the commutative and the non-commutative case. Discrete Mathematics, 274(1-3):41-76, 2004.

[J9] A. Di Nola, P. Flondor, I. Leuştean. MV-modules. Journal of Algebra, 267(1):21-40, 2003.

[J8] P. Flondor, I. Leuştean. Tensor Products of MV-algebras. Soft Computing, 7:446-457, 2003.

[J7] R. Ball, G. Georgescu, I. Leuştean. Cauchy completions of MV-algebras. Algebra Universalis, 47: 367-407, 2002.

[J6] I. Leuştean. Local pseudo-MV algebras. Soft Computing, 5(5):386-395, 2001.

[J5] G. Georgescu, I. Leuştean. Towards a probability theory based on Moisil logic. Soft Computing, 4(1):19-26, 2000.

[J4] G. Georgescu, I. Leuştean. A representation theorem for monadic Pavelka algebras. Journal of Universal Computer Science, 6(1):105-111, 2000.

[J3] G. Georgescu, I. Leuştean. Probabilities on Lukasiewicz-Moisil algebras. International Journal of Approximate Reasoning, 18(3-4):201-215, 1998.

[J2] G. Georgescu, A. Iorgulescu, I. Leuştean. Monadic and closure MV-algebras. International Journal of Multiple-Valued Logic, 3(3):235-257, 1998.

[J1] G. Georgescu, I. Leuştean. Convergence in perfect MV-algebras. Journal of Mathematical Analysis and Application, 228(1):96-111, 1998.

Journal issues as editor
[JI1] Algebra and Probability in Many-Valued Reasoning. Special issue. Studia Logica. 94(2), 2010. Edited by Ioana Leuştean and Vincenzo Marra.

Papers in proceedings

[P10] B. Macovei, I. Leuştean, DELP: Dynamic Epistemic Logic for Security Protocols, FROM 2021, 23rd International Symposium on Symbolic and Numeric Algorithms for Scientific Computing (SYNASC), 275-282, 2021.

[P9] N. Moangă, I. Leuştean, T.F. Şerbănuţă, From Hybrid Modal Logic to Matching Logic and back, FROM 2019, EPTCS 303, 2019, 16-31. arXiv:1907.05029

[P8] N. Moangă, I. Leuştean, T.F. Şerbănuţă, Operational semantics and program verification using many-sorted hybrid modal logic, TABLEAUX 2019, 446-476.

[P7] D. Diaconescu, I. Leuştean, Towards game semantics for nuanced logics, FUZZ-IEEE 2017, doi: 10.1109/FUZZ-IEEE.2017.8015600.

[P6] A. Di Nola, B. Gerla, I. Leuştean. Adding Real Coefficients to Lukasiewicz Logic: An Application to Neural Networks. In: F. Masulli, G. Pasi, and R. Yager (Eds.), WILF 2013, LNAI 8256, pp. 77–85, 2013.

[P5] I. Leuştean. State-complete Riesz MV-algebras and L-measure spaces. Proceedings of IPMU 2012, part II, CCIS, 298:226-234, 2012.

[P4] D. Diaconescu, I. Leuştean, L. Petre, K. Sere, G. Stefanescu. Refinement-Preserving Translation from Event-B to Register-Voice Interactive Systems. Proceedings of IFM 2012, 221-236, 2012.

[P3] A. Di Nola, I. Leustean. Riesz MV-algebras and their logic. Proceedings of EUSFLAT-LFA 2011, 140-145, 2011.

[P2] I. Leuştean. The tensor PMV-algebra of an MV-algbebra. Proceedings of the 41st IEEE International Symposium for Multiple-Valued Logic, 274-276, 2011.

[P1] B. Gerla, I. Leuştean. Many-valued logics and similarities. Proceedings of IPMU 2004, 477-484, 2004.

Contributions in handbooks and collections

[C2] S. Lapenta, I. Leuştean. A general view on normal form theorems for Lukasiewicz logic with product. Dieter Probst and Peter Schuster (eds.), "Concepts of Proof in Mathematics, Philosophy and Computer Science". Ontos Mathematical Logic 6. Walter de Gruyter, Berlin, 2016.

[H1] A. Di Nola, I. Leustean. Łukasiewicz logic and MV-algebras, P. Cintula, P. Hajek, C. Noguera (eds.), Handbook of Mathematical Fuzzy Logic - volume 2, Studies in Logic 37, College Publications, London, 1-102, 2011.

[C1] A. Di Nola, G. Georgescu, I. Leuştean. States on Perfect MV-algebras, in V. Novák, I. Perfilieva (eds.), Discovering the World With Fuzzy Logic, Stud. Fuzziness Soft Comput. 57, Physica, Heidelberg, 105-125, 2000.