Curriculum vitae

Carles Noguera

ResearcherID: C-7069-2013 **Homepage:** sites.google.com/view/carlesnoguera/
Scopus ID: 8227727500 **Email:** carles.noguera@unisi.it

Research interests: logical foundations of artificial intelligence, many-valued logics algebraic logic, model theory, philosophy of logic

Education and qualification:

2020 **Habilitation as full professor**
2011 **Habilitation as associate professor**
2007 **Degree in Philosophy**, University of Barcelona
2006 **Ph.D. in Logic and Foundations of Mathematics**, University of Barcelona
2001 **Degree in Mathematics**, University of Barcelona

Employment history:

2022 – Professor of Mathematical Logic (MAT/01), Department of Information Engineering and Mathematics, University of Siena
2018 – 2021 Senior researcher (tenured), Czech Academy of Sciences, Prague
2013 – 2017 Researcher (tenure-track), Czech Academy of Sciences, Prague
2009 – 2012 Junior researcher, Artificial Intelligence Research Institute, Barcelona
2007 – 2009 Postdoctoral researcher, University of Siena
Supervisor: Prof. Franco Montagna
2006 – 2007 Lecturer, University of Lleida
2002 – 2006 Ph.D. student, Artificial Intelligence Research Institute, Barcelona
Advisors: Dr. Francesc Esteva and Dr. Joan Gispert

Basic scientometric data:

- 48 papers published in peer-reviewed journals (plus 2 submitted), 23 papers in peer-reviewed conference proceedings (plus 1 submitted), 3 monographs (plus 1 in preparation), and 5 chapters in books.
- Citations: 798 (Web of Science), 994 (Scopus), 2532 (Google Scholar).
- H-index: 19 (Web of Science), 20 (Scopus), 28 (Google Scholar).
- 19 invited talks at international conferences, 55 contributed talks (plus 80 presented by co-authors) at international conferences, 80 talks at workshops and research seminars by invitation.

Language skills:[1]

- C2 level: Catalan, English, Italian, Spanish.
- B1 level: French.
- A2 level: Czech.

[1] According to the Common European Framework of Reference for Languages CEFR.

FUNDING ID:

Projects as (co-)principal investigator:

1. Local coordinator of *Modalities in Substructural Logics: Theory, Methods and Applications MOSAIC*, European project H2020-MSCA-RISE-2020, 2021–2026. Budget for my team: 55.200 EUR.

2. Principal investigator of *Reasoning with graded properties*, Czech Science Foundation 18-00113S, 2018–2020. Total budget: 5.871.000 CZK (approx. 230.000 EUR).

3. Principal investigator of *Predicate graded logics and their applications to computer science*, Czech Science Foundation 17-04630S, 2017–2019. Total budget: 5.769.000 CZK (approx. 225.000 EUR).

4. Local coordinator of *Syntax Meets Semantics: Methods, Interactions, and Connections in Substructural logics SYSMICS*, European project H2020-MSCA-RISE-2015, 2016–2019. Budget for my team: 31.500 EUR.

5. Principal investigator of *First-order many-valued logics*, Czech Academy of Sciences - CONICET Argentina, Bilateral Mobility Research Project, 2017–2018.

6. Co-principal investigator of *Logical models of vague quantifiers*, Czech Science Foundation 15-03966S, 2015–2017. Budget for my team: 1.134.000 CZK (approx. 43.000 EUR).
Note: This project was awarded, but not executed because we also obtained the bigger joint project with the Austrian partner on the same topic.

7. Co-principal investigator of *Modeling vague quantifiers in mathematical fuzzy logic*, joint project of Austrian Science Fund I1897-N25 and Czech Science Foundation GF15-34650L, 2015–2017. Budget for my team: 1.461.000 CZK (approx. 55.000 EUR).

8. Principal investigator of *An order-based approach to non-classical propositional and predicate logics*, Czech Science Foundation 13-14654S, 2013–2016.
Total budget: 4.570.000 CZK (approx. 175.000 EUR).

9. Personal grant *Abstract algebraic logic with applications to substructural and fuzzy logics* "Beatriu de Pinós" grant of the Catalan government, 2013–2014.
Note: This project was awarded with funding for two years of full salary and travel budget, but not executed because I accepted a new job in Prague.

10. Personal grant *Mathematical fuzzy logic as a tool for reasoning with imperfect information* "Juan de la Cierva" grant of the Spanish government (JCI-2009-05453), 2009–2012. Total budget: 72.000 EUR.

11. Personal grant *Algebraic and proof-theoretic methods for the formalization of reasoning with vagueness* "Beatriu de Pinós" grant of the Catalan government (2006-BPA-10043), 2007–2009. Total budget: 58.000 EUR.

Other past projects:

- Member of two projects funded by the Czech Science Foundation:
  1. *Logical Structure of Information Channels* (2021). Code: 21-23610M. Principal investigator: Vít Punčochář.
  2. *Mathematical Fuzzy Logic in Computer Science* (2013–2014). Code: P202/10/1826. Principal investigator: Petr Cintula.
- Member of two European projects:
  3. MaToMUVI (2011–2015). *Mathematical Tools for the Management of Uncertain and Vague Information* (PIRSES-GA-2009-247584). Principal investigator: Luca Spada.
  4. LoMoReVI (2009–2011). *Logical Models of Reasoning with Vague Information* (EUROCORES Programme, FFI2008-03126-E/FILO). Principal investigador: Christian G. Fermüller.
- Member of four projects of funded by the Spanish government:
  5. TASSAT (2011–2013). *Theories, applications and synergy in SAT, Constraint Satisfaction Problem and Fuzzy Description Logics*. Code: TIN2010-20967-C04-01. Principal investigator: Jordi Levy.
  6. MULOG 2 (2008–2010). *Multivalued logic: foundations and applications to satisfiability, argumentation and ontologies*. Code: TIN2007-68005-C04-01. Principal investigator: Francesc Esteva.
  7. MULOG (2005–2007). *Multivalued logic: foundations and applications to the treatment of vagueness and imprecision*. Code: CICYT, TIN2004-07933-C03-01. Principal investigator: Francesc Esteva.
  8. LOGFAC (2002–2004). *Classical and multivalued logic: foundations and computational applications*. Code: CICYT TIC2001-1577-C03-01. Principal investigator: Francesc Esteva.

TEACHING EXPERIENCE:

- Five courses at the Master of Language and Mind and Master of Applied Mathematics of the University of Siena:
  1. *Logics for Artificial Intelligence* (2026)
  2. *Foundations of Mathematics* (2022, 2023, 2024, 2025)
- Three courses at the Bachelor of Mathematics of the University of Siena:
  Algebra 2 (2024, 2025, 2026)
- One course in the PhD program in Information engineering and Science of the University of Siena:
  Introduction to Mathematical Fuzzy Logic (2023)
- One course in the PhD program in Mathematics of the University of Ferrara:
  Introduction to many-valued logics (2024)
- One master course at the Department of Mathematics, National University of the South, Bahía Blanca, Argentina:
  Many-valued model theory (2022)
- Two master courses at the Czech Technical University in Prague:
  Logic for Computer Science (2018, 2020)

- Three master courses at the Faculty of Mathematics and Physics of the Charles University in Prague:
  1. *Introduction to Algebraic Logic* (2019)
  2. *General Theories of Logical Systems* (2020, 2021)
- Eight master/bachelor courses at the Department of Logic of the Charles University in Prague:
  1. *Introduction to Algebraic Logic* (2015, 2017, 2019)
  2. *General Theories of Logical Systems* (2014, 2016)
  3. *Mathematical Fuzzy Logic* (2013, 2016, 2021)
- One master course at the Faculty of Mathematics of the National University of Central Buenos Aires:
  Introduction to Algebraic Logic (2015)
- Two graduate courses at the Faculty of Mathematics of the University of Siena:
  Mathematical Fuzzy Logic (2008, 2009)
- Three undergraduate courses at the University of Lleida:
  1. *Computational logic* (2006)
  2. *Artificial intelligence* (2006)
  3. *Intelligent systems* (2007)
- One course at the International Tbilisi Summer School on Logic and Language (Tbilisi, Georgia): *Reasoning with graded predicates in Mathematical Fuzzy Logic* (2017).
- One tutorial at the Israeli Workshop on Non-Classical Logics and Their Applications: *Mathematical Fuzzy Logic* (2014).
- One tutorial at the School of Universal Logic: *Logic, Algebra and Implication* (2013).
- Part of a master course in the Autonomous University of Barcelona: *Advanced Artificial Intelligence* (2013).
- Two courses at European Summer School in Logic, Language and Information (ESSLLI): *Abstract Algebraic Logic: theory and applications* (2012), *A gentle introduction to Mathematical Fuzzy Logic* (2014).

ACADEMIC SUPERVISION:

- **Postdocs:**
  1. Berta Grimau (October 2018 – June 2021), postdoc at Czech Science Foundation project.
  2. Tomáš Lávička (October 2018 – December 2020), postdoc at Czech Science Foundation project and Mareš stipendium.
- **Ph.D. students:**
  1. Tomáš Lávička, *An abstract study of completeness in infinitary logics*, Charles University in Prague (thesis defended in October 2018).
  2. Filip Jankovec, *Non-integral generalizations of Łukasiewicz logic*, Charles University in Prague (thesi to be defended in September 2026). Co-advisor: Petr Cintula.

3. James Carr, University of Queensland (thesis to be submitted in 2026). Co-advisor: Guillermo Badia.
4. Alberto Paparella, University of Ferrara (thesis to be submitted in 2026). Co-advisors: Guido Sciavicco and Guillermo Badia.
5. Alice Portone, University of Siena (thesis to be submitted in 2028). Co-advisor: Guillermo Badia.
6. Jed Forman, Simpson College (thesis to be submitted in 2030). Co-advisor: Mark Van Atten.

- Member of the evaluation committee of 9 Ph.D. theses.
- Member of the evaluation committee of 1 habilitation theses.
- **Master students:**
  1. Tomáš Lávička, *Classification of (in)finitary logics*, Charles University in Prague, 2015.
  2. Alice Portone, *0-1 laws for semiring semantics*, University of Siena, 2025. Co-advisor: Guillermo Badia.
  3. Momodou Adama Sowe, University of Siena (thesis to be submitted in 2027). Co-advisor: Duccio Pianigiani.
  4. Gauri Pundir, University of Siena (thesis to be submitted in 2027).
  5. Cansu Aydogan, University of Siena (thesis to be submitted in 2027).
- **Bachelor students:**
  1. Davide Perinti, *A characterization of the proof by cases property in algebraizable logics*, University of Siena, 2024.
  2. Sara Marcatili, *(Un)axiomatizability of second order logic and its fragments*, University of Siena, 2025.
  3. Francesco Rossi, University of Siena (thesis to be submitted in 2027).

Invited lectures in international conferences:[2]

1. *Extending Codd's Theorem to Databases over Semirings* (plenary invited lecture at Beauty of Logic, Prague, Czech Republic, February 2026).
2. *Fagin's Theorem for Semiring Turing Machines* (plenary invited lecture at Logic, Algebra and Category Theory: Applications in Computer Science, Fukuoka, Japan, October 2025, online).
3. *0-1 laws for finite lattice-ordered algebras* (plenary invited lecture at 105th edition of AAA - Workshop on General Algebra, Prague, Czech Republic, June 2024).
4. *Asymptotic truth-value laws in many-valued logics* (plenary invited tutorial at conference of the Australian Association for Logic AAL 2023, Brisbane, Australia, November 2023).
5. *First-order fuzzy logics and their 0-1 laws* (plenary invited tutorial at Logic, Algebra and Truth Degrees 2023, Tbilisi, Georgia, September 2023).

[2]This list contains only international events that included a call for contributed talks; thus purely invitational events are not counted here.

6. *First-order fuzzy logics and their model theory* (plenary invited lecture at Logic, Algebra and Truth Degrees 2022, Paestum, Italy, September 2022).

7. *Axiomatizing inference from partially true formulas in real-valued first-order logics* (session invited lecture at the AMS Spring Western Sectional Meeting, University of Denver, USA, May 2022, online).

8. *Frame definability in finitely-valued modal logic* (plenary invited lecture at NCMPL 2021: Non-classical Modal and Predicate Logics, Bochum, Germany, November 2021).

9. *Lindström theorems in graded model theory* (session invited lecture at 6th Congress of Latin American Mathematicians, Montevideo, Uruguay, September 2021, online).

10. *Substructural logics as weakly implicative logics* (session invited lecture at Classical and constructive semigroups and applications ACaCS 2021, Niš, Serbia, September 2021, online).

11. *Logic and Implication: An introduction to the general algebraic study of non-classical logics* (plenary invited tutorial at 18th Latin American Symposium on Mathematical Logic, Concepción, Chile, December 2019).

12. *Graded Model Theory: a logical study of weighted structures* (plenary invited lecture at 11th Conference of the European Society for Fuzzy Logic and Technology, Prague, Czech Republic, September 2019).

13. *Logic, Algebra and Implication* (plenary invited tutorial at 56th Summer School on Algebra and Ordered Sets, Špindlerův Mlýn, Czech Republic, September 2018).

14. *Logics of graded predicates* (plenary invited tutorial at 32nd International Symposium Logica, Hejnice, Czech Republic, June 2018).

15. *A graded model theory* (plenary invited lecture at Beauty of Logic, Prague, Czech Republic, January 2018).

16. *Logic and implication* (plenary invited lecture at XIV Monteiro Congress, Bahía Blanca, Argentina, June 2017).

17. *Non-associative substructural logics: alternative axiomatization, algebraic and logical properties* (session invited lecture at 15th Latin American Symposium on Mathematical Logic, Bogotá, Colombia, June 2012).

18. *An abstract study of disjunction connectives in non-classical logics* (plenary invited lecture at Argentinian Mathematical Society meeting 2011, San Miguel de Tucumán, Argentina, September 2011).

19. *From fuzzy sets to mathematical fuzzy logic* (plenary invited lecture at Tenth International Conference on Fuzzy Set Theory and Applications FSTA 2010, Liptovský Jan, Slovakia, February 2010).

Research stays abroad:[3]

1. School of Historical and Philosophical Inquiry, The University of Queensland (Brisbane, Australia, 17 October – 16 November 2025).
2. School of Historical and Philosophical Inquiry, The University of Queensland (Brisbane, Australia, 9 October – 8 November 2024).
3. School of Historical and Philosophical Inquiry, The University of Queensland (Brisbane, Australia, 13 October – 13 November 2023).
4. Department of Philosophy, The University of Sydney (Sydney, Australia, 6 October – 12 November 2018).
5. Department of Mathematics and Statistics, University of La Trobe (Melbourne, Australia, 31 January – 31 March 2017).
6. School of Computer Science and Applied Mathematics, University of Witwatersrand (Johannesburg, South Africa, 11 July – 9 August 2016).
7. National University of Central Buenos Aires (Tandil, Argentina, 15 January – 14 March 2015).
8. Centre for Logic, Epistemology and the History of Science, University of Campinas (Campinas, Brazil, 10 May – 9 June 2012).
9. Department of Computer Science, University of Buenos Aires (Buenos Aires, Argentina, 26 July 2011 – 27 September 2011).
10. Department of Mathematics and Computer Science, University of Siena (Siena, Italy, 17 May – 15 July 2005).
11. Department of Computer Science and Mathematics, University of Salerno (Salerno, Italy, February – April 2004).

Academic service:

- Member of the managing committee of the master degree in Applied Mathematics of the University of Siena (since 2025).
- Faculty advisor for students of the Master degree in Applied Mathematics of the University of Siena (since 2025).
- Panel member of the Czech Science Foundation (2022 – 2026).
- Corner editor of *Journal and Logic and Computation* (since 2023).
- Member of the editorial board of *Logic Journal of the IGPL* (since 2023).
- Area editor for Logic in the journal *Fuzzy Sets and Systems* (2019 – 2025).
- Member of the editorial board of *Journal of Multiple-Valued Logic and Soft Computing* (2014 – 2020).
- Frequent referee for peer-reviewed journals and conferences (see verified record at `https://www.webofscience.com/wos/author/record/C-7069-2013`).

[3] We list only stays over one month.

- Member (and cofounder) of the steering committee of the series of conferences *Logic, Algebra and Truth Degrees* (since 2008).
- Member of the programme committee of 55 international conferences.
- Member of the organizing committee of 20 conferences and workshops.
- Coordinator of the ERCIM working group on Many-valued logic (ManyVal) (2014 – 2018).
- Coordinator of the EUSFLAT working group of Mathematical Fuzzy Logic (MathFuzzLog) (2007 – 2017).
- Member of the committee of 2 scientific awards in the Czech Republic and Italy.
- Evaluator of research project proposals for the state funding agencies of Argentina, Austria, Czech Republic, Hungary, Israel, Poland, and Switzerland.
- Member of the selection committee of 3 faculty positions.
- Member of the evaluation committee of 1 promotion to full professor position.
- Member of the evaluation committee of 1 habilitation thesis for full professor.
- President of the TSAWA Foundation (2023 – 2026).
- 19 outreach activities (media appearances, talks to high school students, talks to general audiences).

LIST OF PUBLICATIONS

Books:

1. *Many-valued logic*, Elements in Philosophy and Logic, Cambridge University Press, in preparation. (with G. Badia)

2. *Logic and Implication: An Introduction to the General Algebraic Study of Non-Classical Logics*, Trends in Logic, Springer vol. 57, 2021. (ISBN: 978-3-030-85674-8) (with P. Cintula)

3. *Slabě implikativní logiky: Úvod do abstraktního studia výrokových logik*, Univerzita Karlova v Praze, Filozofická fakulta, Prague, 2015. (ISBN: 978-80-7308-576-6) (with P. Cintula)

4. *Algebraic study of axiomatic extensions of triangular norm based fuzzy logics*, Monographs of the Artificial Intelligence Research Institute vol. 27, Barcelona, 2007. (ISBN: 978-84-00-08538-4)

Papers in peer-reviewed journals:

1. Ehrenfeucht–Fraïssé methods in the model theory of finitely valued topological spaces. Submitted. (with G. Badia, A. Figallo, and M. Figallo)

2. Reasoning in Many-Valued Multi-Modal Logic: A Uniform and General Approach. Submitted. (with G. Badia, R. Monego, A. Paparella, G. Sciavicco, and E.I. Stan)

3. Descriptive Complexity and Weighted Turing Machines. To appear in *Information and Computation*, 2026. (with G. Badia, M. Droste, and E. Paul)

4. Superabelian logics. *Review of Symbolic Logic* 19(2):218–244, 2026. (with P. Cintula and F. Jankovec)

5. Information types in intuitionistic predicate logic with constant domains. *Logic Journal of the IGPL* 31(1), 2026. (with V. Punčochář)

6. Codd's Theorem for Databases over Semirings. *Proceedings of the ACM on Management of Data* 3(5), Article No.: 277, Pages 1–26, 2025. (with G. Badia and P. Kolaitis)

7. New foundations of reasoning via real-valued first-order logics. *Bulletin of Symbolic Logic* 31(2):319-349, 2025. (with G. Badia and R. Fagin)

8. Asymptotic truth-value laws in many-valued logics. *Journal of Symbolic Logic* 90(4):1756–1778, 2025. (with G. Badia and X. Caicedo)

9. Maximality of logic without identity. *Journal of Symbolic Logic* 89(1):147–162, 2024. (with G. Badia and X. Caicedo)

10. Frame definability in finitely-valued modal logics. *Annals of Pure and Applied Logic* 174:103273, 2023. (with G. Badia and X. Caicedo)

11. These degrees go to eleven: fuzzy logics and gradable predicates. *Synthese* 200:445, 2022. (with P. Cintula, B. Grimau, and N.J.J. Smith)

12. A 0-1 Law in Mathematical Fuzzy Logic. *IEEE Transactions on Fuzzy Systems* 30:3833–3840, 2022. (with G. Badia)

13. Saturated models of first-order many-valued logics, *Logic Journal of the IGPL* 30:1–20, 2022. (with G. Badia)

14. A general omitting types theorem in mathematical fuzzy logic, *IEEE Transactions on Fuzzy Systems* 29:1386–1394, 2021. (with G. Badia)

15. Lindström theorems in graded model theory, *Annals of Pure and Applied Logic*, 172(3): 102916, 2021. (with G. Badia)

16. Classical and fuzzy two-layered modal logics for uncertainty: translations and proof-theory, *International Journal of Computational Intelligence Systems* 13:988–1001, 2020. (with P. Baldi and P. Cintula)

17. Syntactic characterizations of classes of first-order structures in mathematical fuzzy logic, *Soft Computing* 23:2177–2186, 2019. (with G. Badia, V. Costa, and P. Dellunde)

18. Towards a general possible-world semantics for modal many-valued logics, *Soft Computing* 23:2233–2241, 2019. (with P. Cintula and P. Menchón)

19. Extension properties and subdirect representation in abstract algebraic logic, *Studia Logica* 106:1065–1095, 2018. (with T. Lávička)

20. Fraïssé classes of graded relational structures, *Theoretical Computer Science* 737:81–90, 2018. (with G. Badia)

21. Back-and-forth systems for first-order fuzzy logics, *Fuzzy Sets and Systems* 345:83–98, 2018. (with P. Dellunde and À. García-Cerdaña)

22. Neighborhood semantics for modal many-valued logics, *Fuzzy Sets and Systems* 345:99–112, 2018. (with P. Cintula)

23. Implicational (semilinear) logics III: completeness properties, *Archive for Mathematical Logic* 57:391–420, 2018. (with P. Cintula)

24. A new hierarchy of infinitary logics in abstract algebraic logic, *Studia Logica* 105:521–551, 2017. (with T. Lávička)

25. Löwenheim–Skolem theorems for non-classical first-order algebraizable logics, *Logic Journal of the IGPL* 24:321–345, 2016. (with P. Dellunde and À. García-Cerdaña)

26. Implicational (semilinear) logics II: additional connectives and characterizations of semilinearity, *Archive for Mathematical Logic* 55:353–372, 2016. (with P. Cintula)

27. A note on natural extensions in abstract algebraic logic, *Studia Logica* 103:815–823, 2015. (with P. Cintula)

28. Paraconsistency properties in degree-preserving fuzzy logics, *Soft Computing* 19:531–546, 2015. (with R. Ertola, F. Esteva, T. Flaminio, and L. Godo)

29. A Henkin-style proof of completeness for first-order algebraizable logics, *Journal of Symbolic Logic* 80:341–358, 2015. (with P. Cintula)

30. Non-associative substructural logics and their semilinear extensions: axiomatization and completeness properties, *Review of Symbolic Logic* 6:794–423, 2013. (with P. Cintula and R. Horčík)

31. A logical approach to fuzzy truth hedges, *Information Sciences* 232:366–385, 2013. (with F. Esteva and L. Godo)

32. The proof by cases property and its variants in structural consequence relations, *Studia Logica* 101:713–747, 2013. (with P. Cintula)

33. Implicational (Semilinear) Logics I: A New Hierarchy, *Archive for Mathematical Logic* 49:417–446, 2010. (with P. Cintula)

34. Arithmetical complexity of first-order predicate fuzzy logics over distinguished semantics, *Journal of Logic and Computation* 20:399–424, 2010. (with F. Montagna)

35. Generalized continuous and left-continuous t-norms arising from algebraic semantics for fuzzy logics, *Information Sciences* 180:1354–1372, 2010. (with F. Esteva and L. Godo)

36. Expanding the propositional logic of a t-norm with truth-constants: completeness results for rational semantics, *Soft Computing* 14:273–284, 2010. (with F. Esteva and L. Godo)

37. On expansions of WNM t-norm based logics with truth-constants, *Fuzzy Sets and Systems* 161:347–368, 2010. (with F. Esteva and L. Godo)

38. First-order t-norm based fuzzy logics with truth-constants: distinguished semantics and completeness properties, *Annals of Pure and Applied Logic* 161:185–202, 2009. (with F. Esteva and L. Godo)

39. Distinguished algebraic semantics for t-norm based fuzzy logics: methods and algebraic equivalencies, *Annals of Pure and Applied Logic* 160:53–81, 2009. (with P. Cintula, F. Esteva, J. Gispert, L. Godo, and F. Montagna)

40. A mathematical approach to the vagueness problem, *Butlletí de la Societat Catalana de Matemàtiques* 23:233–273, 2008. (in Catalan)

41. On triangular norm based axiomatic extensions of the Weak Nilpotent Minimum logic, *Mathematical Logic Quarterly* 54:387–409, 2008. (with F. Esteva and J. Gispert)

42. On completeness results for predicate Lukasiewicz, Product, Gödel, and Nilpotent Minimum logics expanded with truth-constants, *Mathware & Soft Computing* 14:233–246, 2007. (with F. Esteva and L. Godo)

43. On n-contractive fuzzy logics, *Mathematical Logic Quarterly* 53:268–288, 2007. (with R. Horčík and M. Petrík)

44. Adding truth-constants to logics of continuous t-norms: axiomatization and completeness results, *Fuzzy Sets and Systems* 158:597–618, 2007. (with F. Esteva, J. Gispert, and L. Godo)

45. On weakly cancellative fuzzy logics, *Journal of Logic and Computation* 16:423–450, 2006. (with F. Montagna and R. Horčík)

46. On product logic with truth constants, *Journal of Logic and Computation* 16:205–225, 2006. (with P. Savický, R. Cignoli, F. Esteva, and L. Godo)

47. On Rational Weak Nilpotent Minimum Logics, *Journal of Multiple-valued Logic & Soft Computing* 12:9–32, 2006. (with F. Esteva and L. Godo)

48. On some varieties of MTL-algebras, *Logic Journal of the IGPL* 13:443–466, 2005. (with F. Esteva and J. Gispert)

49. Perfect and bipartite IMTL-algebras and disconnected rotations of prelinear semihoops, *Archive for Mathematical Logic* 44:869–886, 2005. (with F. Esteva and J. Gispert)

50. On the scope of some formulas defining additive connectives in fuzzy logics, *Fuzzy Sets and Systems* 154:56–75, 2005. (with À. García-Cerdaña and F. Esteva)

Papers in peer-reviewed conference proceedings:

1. Fagin's theorem for semiring Turing machines. Submitted. (with G. Badia, M. Droste, T. Eiter, R. Kiesel, and E. Paul)

2. A tableau for Many-Valued Multi-Modal Logic. The 41st Italian Conference on Computational Logic CILC 2026, Ferrara, Italy, 2026. (with G. Badia, R. Monego, A. Paparella, G. Sciavicco, I.E. Stan)

3. Generating and counting finite Flew-chains, *2025 IEEE International Conference on Fuzzy Systems (FUZZ), Reims, France, 2025*, pp. 1–7. (with G. Badia, R. Monego, A. Paparella, and G. Sciavicco)

4. Many-Expert Decision Trees. In *Proceedings of OVERLAY 2024, 6th International Workshop on Artificial Intelligence and Formal Verification, Logic, Automata, and Synthesis, Bolzano, Italy, November 28–29, 2024*, Daniele Porello, Cosimo Vinci, and Matteo Zavatteri (eds), CEUR Workshop Proceedings, vol. 3904, pp. 97–102, 2024. (with G. Badia, A. Paparella, and G. Sciavicco)

5. Fitting's Style Many-Valued Interval Temporal Logic Tableau System: Theory and Implementation. In *Proceedings of 31st International Symposium on Temporal Representation and Reasoning (TIME 2024)*. Pietro Sala, Michael Sioutis, and Fusheng Wang (eds), Leibniz International Proceedings in Informatics (LIPIcs), Volume 318, Article No. 7, pp. 7:1–7:16, 2024. (with G. Badia, A. Paparella, G. Sciavicco, and E.I. Stan)

6. Logical Characterizations of Weighted Complexity Classes. In *49th International Symposium on Mathematical Foundations of Computer Science (MFCS 2024)*. Leibniz International Proceedings in Informatics (LIPIcs), Volume 306, pp. 14:1-14:16, Schloss Dagstuhl – Leibniz-Zentrum für Informatik, 2024. (with G. Badia, M. Droste, and E. Paul)

7. Translating Classical Probability Logics into Modal Fuzzy Logics. *Proceedings of the 11th conference of the European Society for Fuzzy Logic and Technology EUSFLAT 2019*, Martin Štěpnička (ed), Atlantis Press, pp. 342–349, 2019. (ISBN: 978-94-6252-770-6) (with P. Baldi and P. Cintula)

8. Saturated models in mathematical fuzzy logic. *Proceedings of the IEEE International Symposium on Multiple-Valued Logic 2018*, IEEE Computer Society, pp. 150–155, 2018. (with G. Badia)

9. A logical framework for graded predicates. In A. Baltag, J. Seligman, and T. Yamada (eds), *International Workshop on Logic, Rationality and Interaction LORI 2017*, Lecture Notes in Computer Science, vol. 10455, pp. 3–16, 2017. (ISBN: 978-3-662-55664-1) (with P. Cintula and N.J.J. Smith)

10. From Kripke to neighborhood semantics for modal fuzzy logics. Information Processing and Management of Uncertainty, 16th International Conference, Eindhoven, The Netherlands, June 20–24, 2016, J.P. Carvalho, M.J. Lesot, U. Kaymak, S. Vieira, B. Bouchon–Meunier, and R.R. Yager (eds), pp. 95–107, *Communications in Computer and Information Science*, Volume 611, Springer, 2016. (ISBN: 978-3-319-40580-3) (with P. Cintula and J. Rogger)

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