

Curriculum Vitæ

Andrei-Valentin Sipos

1 Personal Data

- Born: March 25, 1991, Bucharest, Romania.
- Citizenship, nationality: Romanian.
- Email address: `andrei.sipos@fmi.unibuc.ro`
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2 Employment

- since October 2020: Lecturer / Assistant Professor (*‘Lector’*),
Department of Computer Science, University of Bucharest.
- since October 2017: Scientific Researcher (*‘Cercetător științific’*),
Simion Stoilow Institute of Mathematics of the Romanian Academy.
- October 2017 – September 2020: Research Assistant (*‘Wissenschaftlicher Mitarbeiter’*),
Department of Mathematics, Technische Universität Darmstadt.
- November 2014 – September 2017: Research Assistant (*‘Asistent de cercetare științifică’*),
Simion Stoilow Institute of Mathematics of the Romanian Academy.

3 Education

- 2017: Ph.D. in Mathematics, University of Bucharest.
Advisor: Laurențiu Leuștean.
Thesis title: *Contributions to proof mining.*
- 2014: M.Sc. in Mathematics (Algebra and Number Theory), University of Bucharest.
- 2012: B.Sc. in Computer Science, University of Bucharest.
- 2012: B.Sc. in Mathematics, University of Bucharest.

4 Awards

- 2018: Prize for Excellence in Doctoral Research (Category: Mathematics and Computer Science) of the “Ad-Astra” Association of Romanian Researchers (awarded every two years).

5 Research Projects

Project Director

- September 2020 – August 2022: *Proof Mining in Analysis and Optimization*, CNCS Romania, PN-III-P1-1.1-PD-2019-0396.

Project Member

- January 2012 – May 2013: *Universal Logic Methods for Computer Science*, CNCS Romania, PN-II-ID-PCE-2011-3-0439.
- January 2015 – October 2016: *Proof mining in metric analysis, geometric group theory and ergodic theory*, CNCS Romania, PN-II-ID-PCE-2011-3-0383.
- October 2015 – September 2017: *Modelling uncertainty in non-classical logics*, CNCS Romania, PN-II-RU-TE-2014-4-0730.
- April 2018 – September 2020: *Proof Mining in Convex Optimization and Related Areas*, DFG Project KO 1737/6-1.
- September 2020 – September 2022: *The convex space of sofic representations*, CNCS Romania, PN-III-P1-1.1-TE-2019-0262.

6 Professional Activities

- Organizer of the Seminar on Logic in Computer Science, University of Bucharest (2013-2014).
- Organizer of the LOS/IMAR Logic Seminar, University of Bucharest and Simion Stoilow Institute of Mathematics of the Romanian Academy (since 2014).
- Organizer of the Proof Theory Virtual Seminar, held online (2020-2021).
- Member of the Research Center for Logic, Optimization and Security (LOS), University of Bucharest (since 2021).
- Founding Member and Vice-President of the Institute for Logic and Data Science (ILDS), Bucharest (since 2022).
- Organizer of the Proof Mining Seminar, held online (since 2022).

7 Administrative Duties

- Student Member of the Council of the Faculty of Mathematics and Computer Science (2011-2012), University of Bucharest.
- Student Member of the Council of the Doctoral School of Mathematics (2015-2017), University of Bucharest.

8 Participation in academic events

Organizer

- Proof and Computation in Mathematics Minisymposium (together with Sam Sanders; part of the DMV Annual Meeting 2020; held online), September 2020.

Invited talks

- Days of Logic and Computability IV (Shanin-100).
St. Petersburg, Russia, May 2019.
Talk title: *The finitary content of sunny nonexpansive retractions.*

Contributed talks

- Eighth Congress of Romanian Mathematicians (Iași, Romania, June 2015):
Codensity and Stone spaces.
- Logic Colloquium 2015 (Helsinki, Finland, August 2015):
Codensity and Stone spaces.
- PhDs in Logic VIII (Darmstadt, Germany, May 2016):
Proof mining and families of mappings.
- Logic Colloquium 2016 (Leeds, United Kingdom, August 2016):
Proof mining and positive-bounded logic.
- DVMLG Colloquium Logicum 2016 (Hamburg, Germany, September 2016):
Proof mining and positive-bounded logic.
- PhDs in Logic IX (Bochum, Germany, May 2017):
Proof mining in convex optimization.
- Working Formal Methods Symposium – FROM 2017 (Bucharest, Romania, July 2017):
Representable functions in Moisil logic.
- Logic Colloquium 2017 (Stockholm, Sweden, August 2017):
Proof mining in convex optimization.

- BuCal 2017 (Bucharest, Romania, September 2017):
Playing with the logic of Moisil: nuances, games and representations.
- Workshop on Proofs and Computation, part of the HIM Trimester Program on Types, Sets and Constructions (Bonn, Germany, July 2018):
Quantitative results on the method of averaged projections.
- Logic Colloquium 2018 (Udine, Italy, July 2018):
Quantitative results on the method of averaged projections.
- Ninth Congress of Romanian Mathematicians (Galați, Romania, June 2019):
The finitary content of sunny nonexpansive retractions.
- 13th International Conference on Fixed Point Theory and its Applications (Xinxiang, China, July 2019):
The finitary content of sunny nonexpansive retractions.
- Logic Colloquium 2019 (Prague, Czechia, August 2019):
Bounds on strong unicity for Chebyshev approximation with bounded coefficients.
- Days in Logic 2020 (Lisbon, Portugal, January 2020):
Quantitative inconsistent feasibility for averaged mappings.
- Scandinavian Logic Society Symposium – SLSS 2022 (Bergen, Norway, June 2022):
On extracting variable Herbrand disjunctions.
- Logic Colloquium 2022 (Reykjavík, Iceland, June 2022):
On extracting variable Herbrand disjunctions.

Invitations to international workshops

- MFO Workshop №1745 – Mathematical Logic: Proof Theory, Constructive Mathematics. Oberwolfach, Germany, November 2017.
Talk given: *Proof mining and the proximal point algorithm.*
- PCC (Proof, Computation, Complexity) 2019. Institut Mittag-Leffler, Djursholm, Sweden, July 2019.
Talk given: *The finitary content of sunny nonexpansive retractions.*
- MFO Workshop №2046 – Mathematical Logic: Proof Theory, Constructive Mathematics. Oberwolfach, Germany (held online), November 2020.
Talk given: *Two recent results in proof mining.*
- IASM-BIRS Workshop 21w5156: New Frontiers in Proofs and Computation. Hangzhou, China (held online), September 2021.
Talk given: *On abstract proximal point algorithms and related concepts.*
- International Conference on Applied Proof Theory 2022 (APT22). Pescara, Italy, August 2022.
Talk given: *On extracting variable Herbrand disjunctions.*

Selected seminar talks

- Mathematical Logic Seminar XXXI (held online), University of Lisbon, July 2020.
Talk title: *Two recent results in proof mining*.
- Mathematical Foundations Group Seminar (held online), University of Bath, July 2021.
Talk title: *A proof mining case study on the unit interval*.

Other participations

- Third Romanian-Japanese Algebraic Specification Workshop (Sinaia, Romania, April 2012).
- National School on Algebra, 20th edition (Mangalia, Romania, September 2012).
- National School on Algebra, 21st edition (Bucharest, Romania, September 2013).
- Second Fall School on Quantum Geometry (Erlangen, Germany, October 2013).
- Scandinavian Logic Society Summer School in Logic 2015 (Helsinki, Finland, July 2015).
- ManyVal 2019 – the 8th International Workshop on Many-Valued Logic (Bucharest, Romania, November 2019).
- Nordic Logic Summer School – NLS 2022 (Bergen, Norway, June 2022).
- Working Formal Methods Symposium – FROM 2022 (Iași, Romania, September 2022).

9 Scientific visits

- June 22 - July 6, 2016: Universidad de Sevilla, Spain (invited by Genaro López-Acedo).
Invited talk: *Effective results on algorithms using strict pseudocontractions*.
- November 7-25, 2016: Technische Universität Darmstadt, Germany (invited by Ulrich Kohlenbach).
Invited talk: *Proof mining in L^p spaces*.
- July 19-30, 2021: Technische Universität Darmstadt, Germany (invited by Ulrich Kohlenbach).
- September 20-29, 2021: Universidad de Sevilla, Spain (invited by Genaro López-Acedo).
Invited talk: *A proof mining case study on the unit interval*.

10 Papers

1. “Quantitative results on the Ishikawa iteration of Lipschitz pseudo-contractions” (with Laurențiu Leuştean and Vlad Radu),
Journal of Nonlinear and Convex Analysis, Volume 17, Number 11, 2277–2292, 2016.
2. “Effective results on a fixed point algorithm for families of nonlinear mappings”,
Annals of Pure and Applied Logic, Volume 168, Issue 1, 112–128, 2017.
3. “A note on the Mann iteration for k -strict pseudocontractions in Banach spaces”,
Numerical Functional Analysis and Optimization, Volume 38, Issue 1, 80–90, 2017.
4. “Codensity and Stone spaces”,
Mathematica Slovaca, Volume 68, Issue 1, 57–70, 2018.
5. “An application of proof mining to the proximal point algorithm in CAT(0) spaces” (with Laurențiu Leuştean),
in: A. Bellow, C. Calude, T. Zamfirescu (eds.), *Mathematics Almost Everywhere. In Memory of Solomon Marcus* (pp. 153–168), World Sci. Publ., Hackensack, NJ, 2018.
6. “Effective strong convergence of the proximal point algorithm in CAT(0) spaces” (with Laurențiu Leuştean),
Journal of Nonlinear and Variational Analysis, Volume 2, Issue 2 (Special issue on Nonlinear Analysis and Optimization dedicated to Professor Simeon Reich), 219–228, 2018.
7. “An abstract proximal point algorithm” (with Laurențiu Leuştean and Adriana Nicolae),
Journal of Global Optimization, Volume 72, Issue 3, 553–577, 2018.
8. “The asymptotic behaviour of convex combinations of firmly nonexpansive mappings”,
Journal of Convex Analysis, Volume 26, Number 3, 911–924, 2019.
9. “Proof mining in L^p spaces”,
Journal of Symbolic Logic, Volume 84, Issue 4, 1612–1629, 2019.
10. “The finitary content of sunny nonexpansive retractions” (with Ulrich Kohlenbach),
Communications in Contemporary Mathematics, Volume 23, Number 1, 19550093 [63 pages], 2021.
11. “Rates of metastability for iterations on the unit interval”,
Journal of Mathematical Analysis and Applications, Volume 502, Issue 1, 125235 [11 pages], 2021.
12. “Construction of fixed points of asymptotically nonexpansive mappings in uniformly convex hyperbolic spaces”,
Numerical Functional Analysis and Optimization, Volume 42, Issue 6, 696–711, 2021.
13. “A quantitative multiparameter mean ergodic theorem”,
Pacific Journal of Mathematics, Volume 314, Number 1, 209–218, 2021.
14. “Bounds on strong unicity for Chebyshev approximation with bounded coefficients”,
Mathematische Nachrichten, Volume 294, Issue 12, 2425–2440, 2021.

15. “Quantitative inconsistent feasibility for averaged mappings”,
Optimization Letters, Volume 16, Issue 6, 1915–1925, 2022.
16. “On extracting variable Herbrand disjunctions”,
Studia Logica, Volume 110, Issue 4, 1115–1134, 2022.
17. “Revisiting jointly firmly nonexpansive families of mappings”,
Optimization, Volume 71, Number 13, 3819–3834, 2022.
18. “Abstract strongly convergent variants of the proximal point algorithm”,
Computational Optimization and Applications, Volume 83, Issue 1, 349–380, 2022.
19. “A proof-theoretic metatheorem for tracial von Neumann algebras” (with Liviu Păunescu),
arXiv:2209.01797 [math.LO], 2022. To appear in: *Mathematical Logic Quarterly*.
 - “On quantitative metastability for accretive operators”,
arXiv:2210.11131 [math.FA], 2022. Submitted.

11 Teaching

At the University of Bucharest

- *Mathematical Logic*, 1st year course and tutorial, Summer Term 2020/2021, 2021/2022.
- *Concurrent Processes*, 1st Master’s year course and tutorial, Summer Term 2021/2022.
- *Development of Web Applications*, 3rd year course, Winter Term 2020/2021.
- *Mathematical and Computational Logic*, 1st year tutorial, Winter Term 2013/2014, 2014/2015, 2015/2016, 2016/2017, 2020/2021, 2021/2022, 2022/2023.
- *Logic Programming*, 2nd/3rd year lab and tutorial, Summer Term 2013/2014, 2014/2015, 2015/2016, 2016/2017, 2020/2021.
- *Declarative Programming*, 3rd year lab, Winter Term 2014/2015.
- *Model Theory*, 1st Master’s year tutorial, Summer Term 2016/2017.
- *Operating Systems*, 2nd year lab, Winter Term 2021/2022, 2022/2023.
- *Web Techniques*, 1st year lab, Summer Term 2020/2021.

At TU Darmstadt

- *Introduction to Mathematical Logic*, 3rd year exercise session, Winter Term 2017/2018, 2018/2019, 2019/2020.
- *Applied Proof Theory*, 1st Master’s year exercise session, Summer Term 2017/2018.