

Curriculum Vitae

Name: **Libor Behounek**

Date: **2021, April 15**

A. Contact Data

Academic Address:

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Citizenship:

Czech Republic, European Union

B. Research Experience

Employment:

2012—

University of Ostrava, Institute for Research and Applications of Fuzzy Modeling,
CE IT4Innovations
Junior researcher 2015—
Postdoctoral fellow 2012–2015

2003–2015

Academy of Sciences of the Czech Republic, Institute of Computer Science
Part-time researcher 2012–2015
Full-time researcher 2010–2012
Full-time graduate student researcher 2005–2009
Part-time graduate student researcher 2003–2004

2011–2012

Vienna University of Technology
Postdoctoral project assistant
Faculty of Mathematics and Geoinformatics, Institute of Discrete Mathematics and
Geometry (Aug 2011 – Feb 2012)
Faculty of Informatics, Institute of Computer Languages (Mar–Apr 2012)

2000–2001

Academy of Sciences of the Czech Republic, Institute of Mathematics
Contractual student research assistant (supervisor: A. Sochor)

C. Awards

2010 Antonin Svoboda Prize of the Czech Society for Cybernetics and Informatics (CSKI) for the best PhD thesis in computer science defended in Czechia in 2009

2007 Distinguished Student Paper Award at the 5th Conference of the European Society for Fuzzy Logic and Technology (EUSFLAT)

2005 Best Paper Award at the XI International Fuzzy Systems Association (IFSA) World Congress

2004–2008: 1st (2008) and 2nd (2004, 2007) Best Presentation Award at the graduate-student workshop Doktorandske dny of the Institute of Computer Science AS CR

2002 Summa cum laude Mgr. (master's degree) at Charles University in Prague

Citations (as of February 2020, excluding self-citations)

	<i>Number of citations</i>	<i>Hirsch index</i>
WoS	200	8
Scopus	264	9

D. Grants

Fellowships and single-researcher projects

2012–2015

Strengthening research teams at the University of Ostrava

Postdoctoral fellowship holder

Project CZ.1.07/2.3.00/30.0010 of the European Regional Development Fund,
Operational Programme Education for Competitiveness

University of Ostrava, Institute for Research and Applications of Fuzzy Modeling

2010–2012

Logic-based fuzzy mathematics

Postdoctoral single-researcher project 2010–2012

Czech Science Foundation (GACR), No. P103/10/P234

Academy of Sciences of the Czech Republic, Institute of Computer Science

2006 (Feb–May)

Uncertain reasoning

Marie Curie Early Stage Training short-term fellowship

Program *Mathlogaps* (Mathematical Logic and Its Applications)

University of Manchester, School of Mathematics, supervisor Jeff B. Paris

Grant-team membership

(Participation in internal university projects and bilateral projects with foreign institutions not listed; for research stays financed by such projects see *Stays abroad* below.)

2020–(expected: 2022)

Fuzzy relational structures in approximate reasoning

Research grant, principal investigator M. Stepnicka

Czech Science Foundation (GACR), No. 20–07851S

University of Ostrava, CE IT4Innovations, Institute for Research and Applications of Fuzzy Modeling

2016–2018

Fuzzy partial logic

Research grant, principal investigator V. Novak

Czech Science Foundation (GACR), No. 16–19170S

University of Ostrava, CE IT4Innovations, Institute for Research and Applications of Fuzzy Modeling

2012–2014

A multivalued approach to optima and equilibria in economics

Research grant, principal investigators T. Kroupa, P. Cintula

Czech Science Foundation (GACR), No. P402/12/1309

Academy of Sciences of the Czech Republic, Institute of Computer Science

2010–2014

Mathematical fuzzy logic in computer science

Research grant 2010–2013, principal investigators P. Hajek, P. Cintula

Czech Science Foundation (GACR), No. P202/10/1826

Academy of Sciences of the Czech Republic, Institute of Computer Science

2011–2012

Fuzzy logic: from mathematics to medical applications

Research project 2008–2012, principal investigator A. Ciabattoni

Vienna Science and Technology Fund (WWTF), No. MA07–016

Vienna University of Technology, Faculty of Mathematics and Geoinformation,
Institute of Discrete Mathematics and Geometry

2008–2012

Logical models of reasoning with vague information

Research project 2008–2011, principal investigators: C. Fermueller, L. Godo, P. Hajek
European Science Foundation (ESF), Scheme EUROCORES (European Collaborative
Research), Program LogICCC (*Modelling Intelligent Interaction—Logic in the
Humanities, Social and Computational Sciences*), Project FP006 LoMoReVI,
consisting of 3 grants for participating teams in Vienna, Barcelona, and Prague

Team member of 2 constituent projects:

2008–2011: Czech Science Foundation (GACR) grant ICC/08/E018 *Fuzzy logic as a
basis for a common framework of vague reasoning*, Academy of Sciences of
the Czech Republic, Institute of Computer Science

2012: Austrian Science Fund (FWF) grant No. I143–G15 *LogICCC—Contextualism,
supervaluation, and fuzzy logic*, Vienna University of Technology, Faculty of
Informatics, Institute of Computer Languages

2007–2010

Dynamic formal systems

Research grant 2007–2010, principal investigators O. Majer, P. Cintula, E. Jerabek
Grant Agency of the Academy of Sciences of the Czech Republic, No. IAA900090703
Academy of Sciences of the Czech Republic, Institute of Computer Science

2005–2009

*Methods for intelligent systems and their applications in data-mining and natural
language processing*

Research grant 2005–9, principal investigators J. Sima, M. Platek
Information Society Programme, No. 1ET100300517
Academy of Sciences of the Czech Republic, Institute of Computer Science
Final report assessment: successful with excellent results

2005–2009

Mathematical foundation of inference and decision under uncertainty

Research grant 2005–9, principal investigator P. Hajek
Grant Agency of the Academy of Sciences of the Czech Republic, No. A100300503
Academy of Sciences of the Czech Republic, Institute of Computer Science

2005–2007

Formal theory of mathematical structures with vagueness

Junior research grant 2005–7, principal investigators P. Cintula, T. Kroupa
Grant Agency of the Academy of Sciences of the Czech Republic, No. B100300502
Academy of Sciences of the Czech Republic, Institute of Computer Science
Final report assessment: Successful with excellent results

2003–2006

Logical foundations of semantics and knowledge representation

Graduate student training grant 2003–7, principal supervisors: P. Jirku, V. Kolman,
J. Peregrin, M. Duzi

Czech Science Foundation, No. 401/03/H047
Charles University in Prague, Faculty of Arts

2003–2004

Mathematical foundations of inference under vagueness and uncertainty

Research grant 2002–2004, principal investigator P. Hajek

Grant Agency of the Academy of Sciences of the Czech Republic, No. A1030004

Academy of Sciences of the Czech Republic, Institute of Computer Science

E. Education

2002–2009: PhD, Charles University in Prague, Faculty of Arts, Department of Logic

Subject: Logic

Advisors: Petr Jirku, Petr Hajek

Thesis: Logical foundations of fuzzy mathematics

1996–2002: Master's degree (Mgr.), Charles University in Prague, Faculty of Arts

Subject: Logic (major), Computational linguistics (minor)

Thesis: Set theory over Goedel logic

F. Publications

For a more detailed list, including minor items and papers in other languages,

see <http://www.behounek.online/logic#papers>

Journal papers

Behounek L., Dvorak A.: Fuzzy relational modalities admitting truth-valueless propositions. *Fuzzy Sets and Systems* 388: 38–55 (2020).

Behounek L., Dankova M.: Variable-domain fuzzy sets—Part II: Apparatus. *Fuzzy Sets and Systems* 380: 19–43 (2020).

Behounek L., Dankova M.: Variable-domain fuzzy sets—Part I: Representation. *Fuzzy Sets and Systems* 380: 1–18 (2020).

Stepnicka M., Cao T.H.N., Behounek L., Burda M., Dolny A.: Missing values and dragonfly operations in fuzzy relational compositions. *International Journal of Approximate Reasoning* 113: 149–170 (2019).

Behounek L., Majer O.: Fuzzy intensional semantics. *Journal of Applied Non-Classical Logic* 28 (4): 348–388 (2018).

Behounek L.: A minimalistic many-valued theory of types. *Journal of Logic and Computation* 27 (5): 1307–1332 (2017).

Behounek L.: Maxima and minima in fuzzified linear orderings. *Fuzzy Sets and Systems* 289: 82–93 (2016).

Behounek L., Cintula P., Fermuller C., Kroupa T.: Representing strategic games and their equilibria in many-valued logics. *Logic Journal of the IGPL* 24(3): 238–267 (2016)

- Behounek L., Bodenhofer U., Cintula P., Saminger-Platz, Sarkoci P.: Graded dominance and related graded properties of fuzzy connectives. *Fuzzy Sets and Systems* 262: 78–101 (2015).
- Behounek L.: Graded properties of unary and binary fuzzy connectives. *Fuzzy Sets and Systems* 202: 1–41 (2012).
- Behounek L., Dankova M.: Relational compositions in Fuzzy Class Theory. *Fuzzy Sets and Systems* 160 (8) 1005–1036 (2009).
- Behounek L., Bodenhofer U., Cintula P.: Relations in Fuzzy Class Theory: Initial steps. *Fuzzy Sets and Systems* 159 (14): 1729–1772 (2008).
- Behounek L.: On the difference between traditional and deductive fuzzy logic. *Fuzzy Sets and Systems* 159 (10): 1153–1164 (2008).
- Behounek L., Cintula P.: From fuzzy logic to fuzzy mathematics: a methodological manifesto. *Fuzzy Sets and Systems* 157 (5): 642–646 (2006).
- Behounek L., Cintula P.: Fuzzy logic as the logic of chains. *Fuzzy Sets and Systems* 157 (5): 604–610 (2006).
- Behounek L., Cintula P.: Fuzzy class theory. *Fuzzy Sets and Systems* 154 (1): 34–55 (2005).
- Behounek L.: Fuzzification of Groenendijk–Stokhof propositional erotetic logic. *Logique et Analyse* 47 (185–188): 167–188 (2004).
- Papers in edited volumes and conference proceedings**
- Behounek L., Dankova M.: Fuzzy neighborhood semantics for multi-agent probabilistic reasoning in games. In M.-J. Lesot et al.: *Information Processing and Management of Uncertainty in Knowledge-Based Systems (Proc. 18th Int. Conf. IPMU 2020, Part III). Communications in Computer and Information Science*, vol. 1239, str. 680–693, Springer Nature, 2020.
- Behounek L.: A degree-theoretic framework for feasible knowledge. In Sedlar I., Blichka M.: *The Logica Yearbook 2019*, pp. 1–15, College Publications, 2020.
- Behounek L., Dvorak A.: Non-denoting terms in fuzzy logic: an initial exploration. In *Advances in Fuzzy Logic and Technology 2017: Proceedings of EUSFLAT 2017*, vol. 1, pp. 148–158, Springer, 2018.
- Behounek L.: *Determinate truth in fuzzy plurivaluationism*. In P. Arazim, T. Lavicka (eds.): *The Logica Yearbook 2016*, pp. 1–15. College Publications, 2017.
- Behounek L., Dankova M.: Towards fuzzy partial set theory. In J.P. Carvalho et al. (eds.): *Information Processing and Management of Uncertainty in Knowledge-Based Systems (IPMU 2016)*, Part II, *Communications in Computer and Information Science* 611, pp. 482–494, Springer, 2016.
- Behounek L., Novak V.: Towards fuzzy partial logic. In *Proceedings of the IEEE 45th International Symposium on Multiple-Valued Logics*, pp. 139–144, Waterloo, Ontario, 2015.
- Behounek L.: In which sense is fuzzy logic a logic for vagueness? In T. Lukasiewicz, R. Penaloza, A.-Y. Turhan (eds.): *CEUR Workshop Proceedings Vol-1205: Logics for Reasoning about Preferences, Uncertainty, and Vagueness 2014*, pp. 26–38, 2014.

- Behounek L., Cintula P., Hajek P.: Introduction to mathematical fuzzy logic. In P. Cintula, P. Hájek, C. Noguera (eds.): *Handbook of Mathematical Fuzzy Logic*, pp. 1–101, College Publications, 2011.
- Behounek L., Majer O.: A semantics for counterfactuals based on fuzzy logic. In M. Pelis, V. Puncochar (eds.): *The Logica Yearbook 2010*, pp. 25–41. College Publications 2011.
- Behounek L., Cintula P., Bodenhofer U., Saminger-Platz S., Sarkoci P.: On a graded notion of t-norm and dominance. In *Proceedings of the 40th IEEE International Symposium on Multiple-Valued Logics*, pp. 73–76, Barcelona 2010.
- Behounek L.: Number-free mathematics in t-norm fuzzy logics. In J. Carvalho, D. Dubois, U. Kaymak, J. Sousa (eds.): *Proceedings of IFSA–EUSFLAT 2009*, pp. 449–454, Lisbon 2009.
- Behounek L.: Fuzzy logics interpreted as logics of resources. In M. Pelis (ed.): *The Logica Yearbook 2008*, pp. 9–21, College Publications 2009.
- Behounek L., Bodenhofer U., Cintula P.: Valverde-style representation results in a graded framework. In M. Stepnicka, V. Novak, U. Bodenhofer (eds.): *New Dimensions in Fuzzy Logic and Related Technologies: Proceedings of the 5th Eusflat Conference*, vol. I, pp. 153–160, University of Ostrava 2007.
- Behounek L., Kroupa T.: Interior-based topology in Fuzzy Class Theory. In M. Stepnicka, V. Novak, U. Bodenhofer (eds.): *New Dimensions in Fuzzy Logic and Related Technologies: Proceedings of the 5th Eusflat Conference*, vol. I, pp. 145–151, University of Ostrava 2007.
- Behounek L., Cintula P.: Features of mathematical theories in formal fuzzy logic. In P. Melin, O. Castillo, L.T. Aguilar, J. Kacprzyk, W. Pedrycz (eds.): *Foundations of Fuzzy Logic and Soft Computing*, pp. 523–532. Lecture Notes in Artificial Intelligence 4529 (IFSA 2007), Springer 2007.
- Behounek L., Kroupa T.: Topology in Fuzzy Class Theory: Basic notions. In P. Melin, O. Castillo, L.T. Aguilar, J. Kacprzyk, W. Pedrycz (eds.): *Foundations of Fuzzy Logic and Soft Computing*, pp. 513–522. Lecture Notes in Artificial Intelligence 4529 (IFSA 2007), Springer 2007.
- Behounek L.: Extensionality in graded properties of fuzzy relations. In *Proceedings of the Eleventh International Conference IPMU 2006*, pp. 1604–1611. Edition EDK, Paris 2006.
- Behounek L.: Towards a formal theory of fuzzy Dedekind reals. In E. Montseny, P. Sobrevilla (eds.): *Proceedings of the Joint 4th Conference of the European Society for Fuzzy Logic and Technology (EUSFLAT) and the 11th Rencontres Francophones sur la Logique Floue et ses Applications (LFA)*, Barcelona, Spain, September 7–9, 2005, pp. 949–954. Barcelona 2005.
- Behounek L., Cintula P.: Fuzzy class theory as foundations for fuzzy mathematics. In Y. Liu, G. Chen, M. Ying (eds.): *Fuzzy Logic, Soft Computing and Computational Intelligence: Eleventh International Fuzzy Systems Association World Congress*, vol. 2, pp. 1233–1238. Tsinghua University Press & Springer, Beijing 2005.
- Behounek L., Cintula P.: General Logical Formalism for Fuzzy Mathematics: Methodology and Apparatus. In Y. Liu, G. Chen, M. Ying (eds.): *Fuzzy Logic, Soft Computing and Computational Intelligence: Eleventh International Fuzzy Systems Association World Congress*, vol. 2, pp. 1227–1232. Tsinghua University Press & Springer, Beijing 2005.
- Behounek L.: Axiomatic Fuzzy Set Theories. In P. Jirku and K. Bendova (eds.): *Miscellanea Logica V* (pp. 31–43). Karolinum Press, Prague 2003.

G. Papers Presented at Conferences

Plenary and invited lectures, tutorials

Formal calculi of fuzzy relations (tutorial)

2nd European Summer School on Fuzzy Logic and Applications (SFLA), Celadna, Czech Republic, 2016

Introduction to multiple-valued logics (tutorial)

International Student Conference on Applied Mathematics and Informatics (ISCAMI), Malenovice, Czech Republic, 2014

Mathematical fuzzy logic (tutorial, with P. Cintula)

4th World Congress and School on Universal Logic, Rio de Janeiro, Brazil, 2013

Fuzzy logics among substructural logics (tutorial, with P. Hajek)

2nd World Congress and School on Universal Logic, Xian, China, 2007

The apparatus of fuzzy class theory (plenary lecture, with P. Cintula)

VIII International Conference on Fuzzy Set Theory and Applications (FSTA), Liptovsky Jan, Slovakia, 2006

Kurt Goedel – zivot, vysledky a jejich vyznam (Czech, “Kurt Goedel—biography, results and their significance”, plenary lecture)

Kognice a umely zivot VI (Czech, “Cognition and Artificial Life VI”), Trest, Czech Republic, 2006

Contributed papers (selection)

A many-valued semantics for feasible knowledge

The 8th International Workshop on Many-Valued Logic (ManyVal), Bucharest, 2019

A probabilistic semantics for unknown fuzzy degrees with Monte Carlo approximation

The 11th Conference of the European Society for Fuzzy Logic and Technology (EUSFLAT), Prague, 2019

Non-monotonic abstract consequence relations

Logic Colloquium, Prague, 2019

A formalism for resource-sensitive epistemic logic

16th International Congress on Logic, Philosophy and Methodology of Science and Technology (CLMPST), Prague, 2019

A degree-theoretic framework for feasible knowledge

Logica XXXIII, Hejnice, 2019

Partial fuzzy modal logic with a crisp and total accessibility relation

Logic, Algebra and Truth Degrees, Bern, 2018

Extending aggregation functions for undefined inputs (with M. Dankova)

ISAS 2018: International Symposium on Aggregation and Structures, Valladolid, Spain, 2018

Hajek-style modalities in fuzzy intensional semantics
Beauty of Logic 2018, Prague, 2018

A free semantics for fuzzy logic
Non-Classical Predicate and Modal Logics (9th WOLC: NCMPL 2017), Guangzhou, 2017

Free quantification in fuzzy logic
The Third Israeli Workshop on Non-Classical Logics and Their Applications (Isralog '17), Haifa, 2017

On the interpretation of undefined values in partial fuzzy logic
Symposia on Mathematical Techniques Applied to Data Analysis and Processing (SMATAD),
Fuengirola, 2017

Towards predicate partial fuzzy logic
Logic, Algebra and Truth Degrees, Phalaborwa, 2016

Determinate truth in the fuzzy plurivaluationistic account of vagueness
Logica XXX, Hejnice, 2016

Fuzzy solutions to classical problems
Frontiers of Non-Classicality, Auckland, 2016

Towards fuzzy partial logic of the first and higher orders (with V. Novak)
Logic Colloquium, Helsinki, 2015

Fuzzy partial logic: combining graduality and undefinedness (with V. Novak)
Logica XXIX, Hejnice, 2015

Towards fuzzy partial logic (with V. Novak)
IEEE 45th International Symposium on Multiple-Valued Logics (ISMVL), Waterloo, Ontario, 2015

Nash equilibria in a class of continuous games over rational Lukasiewicz logic (with P. Cintula and T. Kroupa)
Israeli Workshop on Non-Classical Logics and Their Applications (Isralog), Haifa, 2014

In which sense is fuzzy logic a logic for vagueness?
First Workshop on Logics for Reasoning about Preferences, Uncertainty, and Vagueness (PRUV 2014,
part of Vienna Summer of Logic), Vienna, 2014

Church-style type theories over finitary weakly implicative logics,
Logic, Algebra and Truth Degrees (part of Vienna Summer of Logic), Vienna, 2014

A ground many-valued type theory and its extensions
35th Linz Seminar on Fuzzy Set Theory, Linz, 2014

The global, the local and the ugly (with P. Cintula)
Logic: Between Semantics and Proof Theory, Tel Aviv, 2012

Introspection of vague knowledge in fuzzy epistemic logic
Non-Classical Logics: Theory and Applications V, Torun, 2012

Infinitesimal calculus over semilinear contraction-free logics
Logic Colloquium, Manchester, 2012

The logical background of fuzzy plurivaluationism
Logica XXVI, Hejnice, 2012

Plurivaluationistic models of vagueness in logic-based fuzzy mathematics
Eleventh International Conference on Fuzzy Sets Theory and Its Applications (FSTA), Liptovsky Jan,
2012

- Naive set theories over the logic IMTL*
Asian Logic Conference, Wellington, 2011
- Fuzzy set theories with naive comprehension*
Non-Classical Modal and Predicate Logics, Guangzhou, 2011
- Fuzzy logics as the logics of linearly decomposable resources*
14th Congress of Logic, Methodology and Philosophy of Science, Nancy, 2011
- A fuzzy semantics of the feasible knowledge*
Dialogues, Inference, and Proof—Logical and Empirical Perspectives, Vienna, 2010
- Formal fuzzy semantics for (crisp or fuzzy) counterfactuals* (with O. Majer)
Logic, Reasoning and Rationality, Ghent, 2010
- A degree-theoretical solution to the logical omniscience paradox*
Epistemic Aspects of Many-Valued Logics, Prague, 2010
- Semantics of counterfactuals in higher-order fuzzy logic* (with O. Majer)
Logic, Algebra and Truth Degrees, Prague, 2010
- A semantics for counterfactuals based on formal fuzzy logic* (with O. Majer)
Logica XXIV, Hejnice, 2010
- On a graded notion of t -norm and dominance* (with U. Bodenhofer, P. Cintula, S. Saminger-Platz, and P. Sarkoci)
IEEE 40th International Symposium on Multiple-Valued Logics (ISMVL), Barcelona, 2010
- Features of axiomatic theories in contraction-free logics* (with P. Cintula)
3rd World Congress on Universal Logic, Lisbon, 2010
- Extending Cantor–Lukasiewicz set theory with classes*
31st Linz Seminar on Fuzzy Set Theory, Linz, 2010
- Graded properties of t -norms* (with U. Bodenhofer, P. Cintula, S. Saminger-Platz and P. Sarkoci)
X International Conference on Fuzzy Sets Theory and Its Applications (FSTA), Liptovsky Jan, 2010
- Number-free mathematics based on t -norm fuzzy logic*
IFSAC World Congress and EUSFLAT Conference, Lisbon, 2009
- Infinitesimal calculus based on a fuzzy notion of infinitesimal*
Non-Classical Mathematics, Hejnice, 2009
- Axiomatization of mathematical and physical theories in t -norm logics*
Trends in Logic VI: Space, Time and Quanta, Brussels, 2008
- Set theory over Goedel logic revisited*
Logic, Algebra and Truth Degrees, Siena, 2008
- Modeling the costs of programs by fuzzy dynamic logic* (with M. Bilkova and P. Cintula)
6th European Congress of Analytic Philosophy, Krakow, 2008
- Fuzzy logics interpreted as logics of resources*
Logica XXII, Hejnice, 2008
- Graded dominance* (with U. Bodenhofer, P. Cintula, and S. Saminger-Platz)
29th Linz Seminar on Fuzzy Set Theory, Linz, 2008
- Continuous relations over topological spaces in Fuzzy Class Theory* (with T. Kroupa)
29th Linz Seminar on Fuzzy Set Theory, Linz, 2008

- Interior-based topology in Fuzzy Class Theory* (with T. Kroupa)
5th Conference of European Society for Fuzzy Logic and Technology (EUSFLAT), Ostrava, 2007
- Traditional vs. deductive fuzzy logic*
13th International Congress of Logic, Methodology and Philosophy of Science (LMPS), Beijing, 2007
- Multiplicative quantifiers in fuzzy and substructural logics* (with P. Cintula and R. Horcik)
Logic Colloquium, Wrocław, 2007
- Exponentials and multiplicative quantifiers in fuzzy logic* (with P. Cintula and R. Horcik)
Trends in Logic V: Many-Valued Logic and Cognition, Guangzhou, 2007
- Topology in Fuzzy Class Theory: Basic notions* (with T. Kroupa)
XII International Fuzzy Systems Association (IFSA) World Congress, Cancun, 2007
- Dubois and Prade's fuzzy elements: a challenge for formal fuzzy logic*
The Logic of Soft Computing V and 5th Workshop of ERCIM Working Group on Soft Computing,
Malaga, 2006
- A model of higher-order vagueness in higher-order fuzzy logic*
Uncertainty: Reasoning about Probability and Vagueness, Prague, 2006
- Fuzzy logics interpreted as expressing the cost of knowledge*
Trends in Logic IV: Towards Mathematical Philosophy, Torun, 2006
- An alternative justification of the axioms of fuzzy logics*
Logic Colloquium, Nijmegen, 2006
- Extensionality in graded properties of fuzzy relations*
11th International Conference IPMU, Paris, 2006
- Two notions of fuzzy lattice completion*
The Logic of Soft Computing IV and 4th Workshop of ERCIM Working Group on Soft Computing,
Ostrava, 2005
- Towards a formal theory of fuzzy Dedekind reals*
4th EUSFLAT and 11th LFA Joint Conference, Barcelona, 2005
- Betting on fuzzy logic* (with O. Majer)
Dutch Book Arguments, Prague, 2005
- Fuzzy class theory as foundations for fuzzy mathematics* (with P. Cintula)
XI International Fuzzy Systems Association (IFSA) World Congress, Beijing, 2005
- A delimitation of fuzzy logics in the logical landscape* (with P. Cintula)
XIX Logica, Hejnice, 2005
- Fuzzy logics among weakly implicative logics* (with P. Cintula)
1st World Congress on Universal Logic, Montreux, 2005
- Relations in higher-order fuzzy logic* (with P. Cintula and U. Bodenhofer)
XXVI Linz Seminar on Fuzzy Set Theory, Linz, 2005
- Extensional set equalities over Goedel logic*
Logic Colloquium, Turin, 2004
- What is fuzzy logic?* (with P. Cintula)
ERCIM Workshop on Soft Computing, Vienna, 2004

From fuzzy logic to fuzzy mathematics: A methodological manifesto (with P. Cintula)
The Challenge of Semantics, Vienna, 2004

Intensional semantics of fuzzy logics
Residuated Lattices and Many-Valued Logic, Patras, 2004

Class theory over LPi logic (with P. Cintula)
VII International Conference on Fuzzy Sets Theory and Its Applications (FSTA), Liptovsky Jan, 2004

Fuzzification of Groenendijk–Stokhof erotetic logic
VIII Flemish-Polish Workshop on Adaptive and Erotetic Logics and Their Application to the
Philosophy of Science (VlaPoLo), Zielona Gora, 2003

On fuzzy set theory over Goedel logic
The Logic of Soft Computing III, Siena, 2003

H. Teaching

Courses

University of Ostrava, Faculty of Science

Mathematical logic (jointly with A. Dvorak)
2014/15 ST, 2013/14 ST, 2012/13 ST

Mathematical logic and set theory
2019/2020 ST, 2018/19 ST, 2017/18 ST, 2016/17 ST (jointly with
M. Dankova); 2014/15 ST, 2013/14 ST, 2012/13 ST (jointly with A. Dvorak
and P. Murinova)

Ordered algebraic structures
2016/17 WT, 2015/16 WT, 2014/15 WT (jointly with M. Dyba and
M. Holcapek); 2013/14 WT (jointly with I. Perfilieva and M. Stepnicka)

Vienna University of Technology, Faculty of Informatics

Advanced mathematical logic
2013/14 WT, 2011/12 WT

Charles University in Prague, Faculty of Philosophy and Arts

Category theory (from the perspective of logic)
2012/13 ST, 2009/10 WT, 2007/8 WT, 2005/6 WT

Logic from the perspective of category theory
2009/10 ST, 2007/8 ST

Mathematical fuzzy logic
2009/10 ST (jointly with P. Cintula and R. Horcik), 2006/7 WT (as *Formal
fuzzy logic*)

Thesis supervision

2016 Monika Raskova: *Set-theoretic concepts in Lukasiewicz three-valued logic*
Master thesis, University of Ostrava, Faculty of Science

2016 Petr Revay: *Formalization of the deducibility relation of propositional fuzzy logics*
Bc thesis, Charles University in Prague, Faculty of Philosophy and Arts

- 2014 Ondrej Luhan: *Systems of morphisms over Goedel fuzzy logic*
Master thesis, Charles University in Prague, Faculty of Philosophy and Arts
- 2009 Ondrej Luhan: *Categories of fuzzy sets*
Bc thesis, Charles University in Prague, Faculty of Philosophy and Arts
- 2006 Nelly Vostra: *Fuzzification of simple systems of deontic logic*
Master thesis, Charles University in Prague, Faculty of Philosophy and Arts

Coursebooks

- L. Behounek, M. Dankova: *Mathematical Logic and Set Theory / Matematicka logika a teorie mnozin*. English/Czech bilingual coursebook (161 pp.). University of Ostrava 2020.

I. Other Professional Activity

Edited volumes

- Behounek L., Bilkova M. (eds.): *Logica Yearbook 2004*. Filosofia, Prague 2005.
- Behounek L. (ed.): *Logica Yearbook 2003*. Filosofia, Prague 2004.

Special issues

- Logic Journal of the IGPL* 21 (1): 1–125 (2013), “Non-Classical Mathematics” (edited jointly with G. Sambin and G. Restall)
- Studia Logica* 90 (3): 287–453 (2008), “Vagueness” (edited jointly with R. Keefe)
- Fuzzy Sets and Systems* 159 (14): 1727–1835 (2008), 160 (8): 1003–1004 (2009) “Formal methods for fuzzy mathematics, approximation and reasoning—Part I, II” (edited jointly with P. Cintula, V. Novak, and I. Perfilieva).

Program committees

- IFSA–EUSFLAT 2021*, Bratislava, 2021 September 19–24 (planned; Area Chair and PC member)
- Beauty of Logic & Prague Gathering of Logicians*, Prague, 2018 January 24–27
- Non-Classical Modal and Predicate Logics*, Guangzhou, 2017 December 4–7
- 3rd Israeli Workshop on Non-Classical Logics and Their Applications (Isralog)*, Haifa, 2017 October 15–17
- Israeli Workshop on Non-Classical Logics and Their Applications (Isralog)*, Haifa, 2014 September 29 – October 1

Non-Classical Modal and Predicate Logics, Guangzhou, 2011 December 5–9

Non-Classical Mathematics, Hejnice, 2009 June 18–22

Organizing committees

Uncertainty: Reasoning about Probability and Vagueness (Prague International Colloquium)
Prague, 2006 September 5–8

Special sessions

2013 *Non-classical mathematics* (jointly with P. Cintula)
4th World Congress on Universal Logic, Rio de Janeiro

2010 *Non-classical mathematics* (jointly with P. Cintula)
3rd World Congress on Universal Logic, Lisbon

2010 *Mathematical fuzzy logic* (jointly with P. Cintula and C. Noguera)
X International Conference on Fuzzy Set Theory and Applications (FSTA), Liptovsky
Jan

2007 *Formal fuzzy mathematics* (jointly with P. Cintula)
5th Conference of European Society for Fuzzy Logic and Technology (EUSFLAT),
Ostrava

2006 *Logical foundations of fuzzy mathematics* (jointly with P. Cintula)
VIII International Conference on Fuzzy Set Theory and Applications (FSTA),
Liptovsky Jan

Journal peer reviews

Afrika Matematika
Annals of Pure and Applied Logic
Archive for Mathematical Logic
Erkenntnis
Fundamenta Informaticae
Fuzzy Sets and Systems
IEEE Transactions on Fuzzy Systems
Information Sciences
International Journal of Approximate Reasoning
International Journal of General Systems
International Journal of Uncertainty, Fuzziness and Knowledge-Based Systems
Iranian Journal of Science and Technology
Journal of Applied Logic
Journal of Computational Optimization in Economics and Finance
Journal of Logic and Computation
Logic and Logical Philosophy
Logic Journal of the IGPL
Logique et Analyse
Neural Network World

Review of Symbolic Logic
Soft Computing
Studia Logica

Research stays

- 2019 Barcelona, 1 week
Institut d'Investigacio en Intel·ligencia Artificial, Spanish Scientific Research Council
Erasmus+
- 2012–2013 Vienna, 3 months
Faculty of Informatics, Vienna University of Technology
Project CZ.1.07/2.3.00/30.0010 „Strengthening research teams at the University of
Ostrava“ of the European Regional Development Fund
- 2012 Vienna, 2 months
Faculty of Informatics, Vienna University of Technology
Austrian Science Fund (FWF) project FWF I143–G15 “LogICCC—Contextualism,
supervaluation, and fuzzy logic”
- 2011–2012 Vienna, 6 months
Faculty of Mathematics and Geoinformatics, Vienna University of Technology
Vienna Science and Technology Fund (WWTF) project MA07–016 “Fuzzy logic:
from mathematics to medical applications”
- 2010 Barcelona, 1 week
Institut d'Investigacio en Intel·ligencia Artificial, Spanish Scientific Research Council
Joint project of the Academy of Sciences of the Czech Republic and the Spanish
Scientific Research Council (CSIC) “Fuzzy logic and modalities”
- 2009–2010 Kyoto, total 3 weeks
Kyoto University
Program Kontakt ASCR–JSPS, Project ME09110 of the Ministry of Education of the
Czech Republic “Fuzzy set theory as a foundation of fuzzy mathematics”
- 2007–2008 Linz, total 7 weeks
Institute of Bioinformatics, Johannes Kepler University Linz
Program Kontakt / WTZ Project 6–07–17 / 2–2007 “Formal foundations of fuzzy
preference modelling”
- 2007 Barcelona, 1 week
Institut d'Investigacio en Intel·ligencia Artificial, Spanish Scientific Research Council
Joint project of the Academy of Sciences of the Czech Republic and the Spanish
Scientific Research Council (CSIC) “Fuzzy logic in the framework of abstract
algebraic logic”
- 2006 Manchester, 3 months
Department of Logic, School of Mathematics, University of Manchester
Mathlogaps (Mathematical Logic and Its Applications) Marie Curie Early Stage
Training Short-Term Fellowship, supervisor Jeff B. Paris

2005–2006 Vienna, total 3 weeks
Institute of Computer Languages, Vienna University of Technology
Program Kontakt / WTZ, Project Austria No. 2005–15 “Automated model building for fuzzy logic”

2005–2006 Linz, total 3 weeks
Institute for Knowledge-based Mathematical Systems, Johannes Kepler University
Information Society Programme, Project No. 1ET100300517

2005–2006 Barcelona, total 2 weeks
Institut d’Investigacio en Intel·ligencia Artificial, Spanish Scientific Research Council
Joint project of the Academy of Sciences of the Czech Republic and the Spanish Scientific Research Council (CSIC) “Theoretical investigations of fuzzy logic systems in the framework of substructural logics”

2005 Linz, 2 months
Institute for Knowledge-based Mathematical Systems, Johannes Kepler University
CEEPUS (Central European Exchange Program for University Studies) scholarship

2003–2004 Barcelona, total 1 month
Institut d’Investigacio en Intel·ligencia Artificial, Spanish Scientific Research Council
Joint project of the Academy of Sciences of the Czech Republic and the Spanish Scientific Research Council (CSIC)

Membership in academic administrative bodies

Academy Assembly of the Academy of Sciences of the Czech Republic
Elected representative of the Institute of Computer Science AS CR for 2010–2014

Membership in professional organizations

JCMF (Union of Czech Mathematicians and Physicists), 1990—
CMS (Czech Mathematical Society), a branch of JCMF, 2005—

CSKI (Czech Society for Cybernetics and Informatics), 2005—

EUSFLAT (European Society for Fuzzy Logic and Technology), 2005, 2007–2009, 2019–2021
MathFuzzLog (Mathematical Fuzzy Logic), a working group of EUSFLAT, 2007—

Veda zije! (Czech citizens’ association Science Is Alive!), 2009–2010

J. Language Competence

Language	Understanding	Speaking/Writing	Examinations
<i>Czech</i>	Native	Native	
<i>Slovak</i>	Native	Fluent	
<i>English</i>	Fluent	Fluent	University exam 2001
<i>Russian</i>	Good	Good	University exam 2000, 2004
<i>Esperanto</i>	Good	Basic	
<i>Polish</i>	Good	Basic	
<i>Latin</i>	Basic	Basic	

K. Research Area*Specialization:*

Mathematical fuzzy logic
 Substructural and many-valued logics

Competence:

Non-classical logics
 Foundations of mathematics
 Philosophy of vagueness
 Logical analysis of natural language

General curriculum:

Mathematical logic
 Computational linguistics
 Logic-related areas of mathematics, philosophy, linguistics, and computer science
 (set theory, analytic philosophy, philosophy of language, recursion theory,
 computational complexity, generative and unification grammars, universal
 algebra, etc.)