

Curriculum Vitae

Name: Emil Jeřábek
Date of birth: June 27, 1977
Place of birth: Prague, Czechoslovakia
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Education

- 1995–2001 undergraduate studies of Mathematics at the Faculty of Mathematics and Physics of the Charles University, Prague
Master's degree (Mgr) obtained May 2001
- 1995–2002 undergraduate studies of Logic and Linguistics at the Faculty of Philosophy and Arts of the Charles University, Prague
Master's degree (Mgr) obtained February 2002
- 2001–2005 postgraduate studies at the Faculty of Mathematics and Physics of the Charles University, Prague
Supervisor: J. Krajíček, Mathematical Institute of the Academy of Sciences of the Czech Republic, Prague
Ph.D. degree obtained June 2005

Employment

- 1999–2009: part-time position at the Faculty of Mathematics and Physics of the Charles University.
- 2003–2005: part-time graduate student position at the Mathematical Institute of the Academy of Sciences of the Czech Republic.
- March–August 2005: postdoc position at the Department of Philosophy of the University of Utrecht.

- October 2005–October 2006: postdoc position at the Department of Computer Science of the University of Toronto.
- Since October 2006: full-time position at the Mathematical Institute of AS CR.

Awards

- Otto Wichterle Award, 2010.

Publications

- [1] Emil Jeřábek, *Reflexe v neregulárních univerzech*, Master's thesis, Faculty of Mathematics and Physics, Charles University, Prague, 2001 (in Czech).
- [2] ———, *Provability logic of the Alternative Set Theory*, Master's thesis, Faculty of Philosophy and Arts, Charles University, Prague, 2001.
- [3] ———, *A note on Grzegorzczuk's logic*, *Mathematical Logic Quarterly* 50 (2004), no. 3, pp. 295–296.
- [4] ———, *Dual weak pigeonhole principle, Boolean complexity, and derandomization*, *Annals of Pure and Applied Logic* 129 (2004), pp. 1–37.
- [5] ———, *Weak pigeonhole principle, and randomized computation*, Ph.D. thesis, Faculty of Mathematics and Physics, Charles University, Prague, 2005.
- [6] ———, *Admissible rules of modal logics*, *Journal of Logic and Computation* 15 (2005), no. 4, pp. 411–431.
- [7] Emil Jeřábek, Tomáš Kepka, and David Stanovský, *Subdirectly irreducible non-idempotent left symmetric left distributive groupoids*, *Discussiones Mathematicae — General Algebra and Applications* 25 (2005), no. 2, pp. 235–257.
- [8] Emil Jeřábek, *Frege systems for extensible modal logics*, *Annals of Pure and Applied Logic* 142 (2006), pp. 366–379.
- [9] ———, *The strength of sharply bounded induction*, *Mathematical Logic Quarterly* 52 (2006), no. 6, pp. 613–624.

- [10] ———, *Complexity of admissible rules*, Archive for Mathematical Logic 46 (2007), no. 2, pp. 73–92.
- [11] ———, *On independence of variants of the weak pigeonhole principle*, Journal of Logic and Computation 17 (2007), no. 3, pp. 587–604.
- [12] Emil Jeřábek and Michal Rössler, *Fragment of nonstandard analysis with a finitary consistency proof*, Bulletin of Symbolic Logic 13 (2007), no. 1, pp. 54–70.
- [13] Emil Jeřábek, *Approximate counting in bounded arithmetic*, Journal of Symbolic Logic 72 (2007), no. 3, pp. 959–993.
- [14] ———, *Independent bases of admissible rules*, Logic Journal of the IGPL 16 (2008), no. 3, pp. 249–267.
- [15] ———, *Proof complexity of the cut-free calculus of structures*, Journal of Logic and Computation 19 (2009), no. 2, pp. 323–339.
- [16] ———, *Substitution Frege and extended Frege proof systems in non-classical logics*, Annals of Pure and Applied Logic 159 (2009), no. 1–2, pp. 1–48.
- [17] ———, *Approximate counting by hashing in bounded arithmetic*, Journal of Symbolic Logic 74 (2009), no. 3, pp. 829–860.
- [18] ———, *Canonical rules*, Journal of Symbolic Logic 74 (2009), no. 4, pp. 1171–1205.
- [19] ———, *Abelian groups and quadratic residues in weak arithmetic*, Mathematical Logic Quarterly 56 (2010), no. 3, pp. 262–278.
- [20] ———, *Admissible rules of Lukasiewicz logic*, Journal of Logic and Computation 20 (2010), no. 2, pp. 425–447.
- [21] ———, *Bases of admissible rules of Lukasiewicz logic*, Journal of Logic and Computation 20 (2010), no. 6, pp. 1149–1163.
- [22] ———, *On theories of bounded arithmetic for NC^1* , Annals of Pure and Applied Logic 162 (2011), no. 4, pp. 322–340.
- [23] ———, *A sorting network in bounded arithmetic*, Annals of Pure and Applied Logic 162 (2011), no. 4, pp. 341–355.

- [24] Emil Jeřábek and Phuong Nguyen, *Simulating non-prenex cuts in quantified propositional calculus*, *Mathematical Logic Quarterly* 57 (2011), no. 5, pp. 524–532.
- [25] Emil Jeřábek, *Proofs with monotone cuts*, *Mathematical Logic Quarterly* 58 (2012), no. 3, pp. 177–187.
- [26] ———, *Sequence encoding without induction*, *Mathematical Logic Quarterly* 58 (2012), no. 3, pp. 244–248.
- [27] ———, *Root finding with threshold circuits*, *Theoretical Computer Science* 462 (2012), pp. 59–69.
- [28] ———, *The ubiquity of conservative translations*, *Review of Symbolic Logic* 5 (2012), no. 4, pp. 666–678.
- [29] Emil Jeřábek and Leszek A. Kołodziejczyk, *Real closures of models of weak arithmetic*, *Archive for Mathematical Logic* 52 (2013), no. 1–2, pp. 143–157.
- [30] Emil Jeřábek, *The complexity of admissible rules of Łukasiewicz logic*, *Journal of Logic and Computation* 23 (2013), no. 3, pp. 693–705.
- [31] Ali Sadegh Daghighi, Mohammad Golshani, Joel David Hamkins, and Emil Jeřábek, *The foundation axiom and elementary self-embeddings of the universe*, in: *Infinity, Computability, and Metamathematics: Festschrift celebrating the 60th birthdays of Peter Koepke and Philip Welch* (S. Geschke, B. Löwe, and P. Schlicht, eds.), *Tributes vol. 23*, College Publications, London, 2014, pp. 89–112.
- [32] Emil Jeřábek, *Open induction in a bounded arithmetic for TC^0* , *Archive for Mathematical Logic* 54 (2015), no. 3–4, pp. 359–394.
- [33] ———, *Rules with parameters in modal logic I*, *Annals of Pure and Applied Logic* 166 (2015), no. 9, pp. 881–933.

Conference talks

- *A note on Grzegorzczuk’s logic*, Logic Colloquium (LC2003), Helsinki, August 2003.
- *Bounded arithmetic in 3-valued logic*, Logic Colloquium (LC2004), Torino, July 2004.

- *Hardness amplification in bounded arithmetic*, 24èmes Journées d'Arithmétique Faible (JAF24), Fontainebleau, May 2005.
- *Approximate counting in bounded arithmetic*, New Directions in Proof Complexity (Isaac Newton Institute Workshop LAAW04), Cambridge, April 2006.
- *Canonical rules*, Derivation Rules and Unification (International Workshop on Modal Logic IWML06), İstanbul Kültür Üniversitesi, June 2006.
- *Proof systems for modal logics*, Logic Colloquium (LC2007), Wrocław, July 2007.
- *Admissible rules of Łukasiewicz logic*, Logic Colloquium (LC2009), Sofia, July 2009.
- *On monotone sequent calculus*, Barriers in Computational Complexity, Princeton, August 2009.
- *Weak pigeonhole principle and approximate counting*, Ramsey Theory in Logic, Combinatorics and Complexity (RaTLoCC 2009), Bertinoro, October 2009.
- *Approximate counting in bounded arithmetic*, 29es Journées sur les Arithmétiques Faibles (JAF29), Warsaw, June 2010.
- *Proofs with monotone cuts*, Logic Colloquium (LC2010), Paris, July 2010.
- *Admissible rules and Łukasiewicz logic*, Algebraic Semantics for Uncertainty and Vagueness, Salerno, May 2011.
- *Admissible rules of Łukasiewicz logic*, Workshop on Admissible Rules and Unification, Utrecht, May 2011.
- *Root finding in TC^0* , Proof complexity, Banff, October 2011.
- *Root finding in TC^0 and open induction*, Logical Approaches to Barriers in Complexity II, Cambridge, March 2012.
- *Rules with parameters in modal logic*, The 26th International Workshop on Unification (UNIF 2012, satellite event of IJCAR 2012), Manchester, July 2012.
- *Admissibility and unification with parameters*, Logic, Algebra and Truth Degrees (LATD 2012), Kanazawa, September 2012.

- *Logics with directed unification*, Algebra and Coalgebra meet Proof Theory (ALCOP), Utrecht, April 2013.
- *Open induction in a TC^0 arithmetic*, Logic Colloquium, Évora, July 2013.
- *Complexity of unification and admissibility with parameters in transitive modal logics*, 10th International Tbilisi Symposium on Language, Logic and Computation (TbiLLC), Gudauri, September 2013.
- *Parameter-free induction in bounded arithmetic*, Proof Complexity, Vienna, July 2014.
- *Recursive functions vs. classification theory*, Utrecht Workshop on Proof Theory, April 2015.

Other activities

I am a reviewer for the Zentralblatt MATH Database.