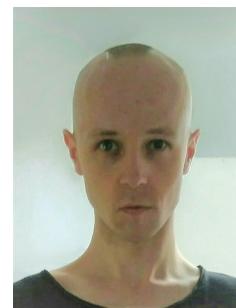# CURRICULUM VITAE

JÁN PICH

(b. June 23, 1987; Svidník, Slovakia)

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Research area: Mathematical Logic and Complexity Theory

Postdoctoral research positions

○ University of Oxford (Department of Computer Science) *Sep 2018 - Aug 2019 and Mar 2020 - present*

○ Czech Academy of Sciences (Institute of Mathematics) *Sep 2019 - Feb 2020*

○ University of Vienna (Kurt Gödel Research Center for Mathematical Logic) *Sep 2016 - Aug 2018*

○ University of Leeds (School of Computing) *Sep 2015 - Aug 2016*

○ University of Toronto (Department of Computer Science) *Jan 2015 - Jun 2015*

Education

Charles University in Prague (Faculty of Mathematics and Physics)

○ PhD; Algebra, Theory of Numbers and Mathematical Logic *Sep 2011 - Nov 2014*
Thesis: *Complexity Theory in Feasible Mathematics*

○ Mgr; Mathematical Structures *Sep 2009 - May 2011*
Thesis: *Hard Tautologies*

○ Bc; Mathematics *Sep 2006 - Jun 2009*
Thesis: *Bounded Arithmetic and Theory of Razborov and Rudich*

Supervisor: Jan Krajíček (2007-2014)

Other academic appointments

○ Visiting scholar, Simons Institute for the Theory of Computing, UC Berkeley, US, 1 February -14 May, 2021
and 10 October - 30 November, 2018

○ Intern, National Institute of Informatics, Tokyo, JP, 5 September - 12 October, 2014

○ Visiting fellow, Isaac Newton Institute for Mathematical Sciences, Cambridge, UK, 1 March - 11 May, 2012

○ Erasmus scholarship, Durham University, UK, October 2010 - February 2011

Selected research papers

○ Learning algorithms from circuit lower bounds
preprint. (Nov 2020)

○ Beyond natural proofs, *with L.Chen, S.Hirahara, I.C.Oliveira, N.Rajgopal and R.Santhanam*
Innovations in Theoretical Computer Science 2020. (Nov 2019)

○ Hardness magnification near state-of-the-art lower bounds, *with Igor C. Oliveira and Rahul Santhanam*
Computational Complexity Conference 2019. (Sep 2018)

○ Feasibly constructive proofs of succinct weak circuit lower bounds, *with Moritz Müller*
Annals of Pure and Applied Logic, 2019. (Sep 2017)

○ Understanding Gentzen and Frege systems for QBF, *with Olaf Beyersdorff*
Proc. of the 31st Annual ACM Symposium on Logic in Computer Science 2016.

- Logical strength of complexity theory and a formalization of the PCP theorem in bounded arithmetic
  Logical Methods in Computer Science, 11(2), 2015. (Jun 2014)
- Circuit Lower Bounds in Bounded Arithmetics
  Annals of Pure and Applied Logic, 166(1), 2015. (May 2013)
- Nisan-Wigderson generators in proof systems with forms of interpolation
  Mathematical Logic Quarterly, 57(4), 2011. (Mar 2010)

Poetry collection
- Mathesis universalis, *Literis,* 2016.

Talks
- *Beyond natural proofs*
  Academy of Sciences, Prague, October 2019
- *Hardness magnification near state-of-the-art lower bounds*
  Computational Complexity Conference, New Brunswick, July 2019
  University of Cambridge, May 2019
  Academy of Sciences, Prague, December 2018
- *Provability of weak circuit lower bounds*
  Logic and Computational Complexity, Oxford, July 2018
  Proof complexity workshop, Dagstuhl, February 2018
  Bounded arithmetic workshop, Prague, November 2017
  Royal Holloway, University of London, October 2017
- *Gentzen and Frege systems for QBF*
  Computational Logic Day, Vienna, January 2017
  Logic Colloquium, Leeds, August 2016.
  Proof complexity workshop, St.Petersburg, May 2016
- *Logical strength of complexity theory and a formalization of the PCP theorem in bounded arithmetic*
  Proof complexity workshop, Vienna, July 2014
- *Circuit lower bounds in bounded arithmetics*
  Logic Colloquium, Vienna, July 2014
  32nd Weak Arithmetics Days, Athens, June 2013
- *Proof complexity of circuit lower bounds*
  Logical approaches to barriers in complexity II, Cambridge, March 2012
- *Hard tautologies*
  Isaac Newton Institute, Cambridge, March 2012
- *NW-generators in proof systems with FIP*
  Proof Complexity and Verification seminar, Swansea University, January 2011
  Logic Seminar, Mathematical Institute of Academy of Sciences in Prague, May 2010