# Miha E. Habič

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Department of Theoretical Computer Science Faculty of Information Technology Czech Technical University in Prague Thákurova 9, 160 00 Prague 6 Czech Republic

e-mail: habicm@ff.cuni.cz website: mhabic.github.io Department of Logic Faculty of Arts Charles University Celetná 20, 116 42 Prague 1 Czech Republic

### **Employment**

- Postdoctoral researcher, Czech Technical University in Prague, September 2018–present. Postdoc on OP VVV grant: International Mobility of Researchers.
- Postdoctoral researcher, Charles University, August 2017-present.
  Postdoc on FWF-GAČR grant 17-33849L: Filters, Ultrafilters and Connections with Forcing.

#### Education

• PhD in Mathematics, The Graduate Center, CUNY, June 2017.

Advisor: Joel David Hamkins

Thesis title: Joint Laver diamonds and grounded forcing axioms

- MSc in Mathematics, Faculty of Mathematics and Physics, University of Ljubljana, 2012.
- BSc in Mathematics, Faculty of Mathematics and Physics, University of Ljubljana, 2010

#### Research interests

Mathematical logic and set theory, particularly large cardinals, their interaction with forcing, and forcing axioms; the structure of forcing extensions and countable models of set theory; infinitary combinatorics, ultrafilters and large-cardinal measures; computability theory; settheoretic topology.

#### **Publications**

- [1] Erin Carmody, Victoria Gitman, and Miha E. Habič, A Mitchell-like order for Ramsey and Ramsey-like cardinals, accepted to Fund. Math., arXiv:1609.07645 [math.LO], 2018.
- [2] Miha E. Habič, The grounded Martin's axiom, MLQ Math. Log. Q. 63 (2017), no. 5, 437–453. MR 3748486
- [3] Miha E. Habič, Cardinal-recognizing infinite time Turing machines, The nature of computation. CiE 2013, Milan. Proceedings, Lecture Notes in Comput. Sci., vol. 7921, Springer, Heidelberg, 2013, pp. 231–240. MR 3102023
- [4] Miha E. Habič, Joel David Hamkins, Lukas Daniel Klausner, Jonathan Verner, and Kameryn Williams, Set-theoretic blockchains, submitted, arXiv:1808.01509 [math.LO], 2018.
- [5] Miha E. Habič, Joint diamonds and Laver diamonds, submitted, arXiv:1708.02145 [math.LO], 2017.
- [6] Miha E. Habič, Joint Laver diamonds and grounded forcing axioms, Phd thesis, The Graduate Center, CUNY, 2017.

#### Honors, Awards and Grants

- Doctoral student research grant, The Graduate Center, CUNY, 2015–2016
- Enhanced chancellor's fellowship, The Graduate Center, CUNY, 2014–2017
- Science fellowship, The Graduate Center, CUNY, 2012–2014
- Ad Futura scholarship, Slovenian government, 2012–2017
- Faculty Preserven prize for outstanding thesis, University of Ljubljana, 2012

## Teaching experience and professional activities

• Graduate teaching fellow, Hunter College, CUNY, 2014–2017.

Introduction to mathematical proofs, Math 15600 (Spring 2015, Summer 2016, Spring 2017)

I was the principal instructor, solely responsible for the course. I composed the syllabus, including the selection of particular topics aimed at developing the students' understanding of a mathematical proof and its structure. I developed a grading policy, prepared all lectures and course materials, assigned homework, designed all exams and graded them. I held regular office hours and made all final grading decisions regarding my students.

Precalculus, Math 12500 (Fall 2014, Fall 2015, Spring 2016, Fall 2016)

I was the principal instructor, solely responsible for the course. I prepared all lectures and course materials, assigned homework, designed all midterm exams, and was fully responsible for all grading, including the final grade decisions. I held regular office hours. I was also asked to write recommendation letters for a few of my better students, and was glad to do so.

• Graduate teaching assistant, Faculty of Mathematics and Physics, University of Ljubljana, 2011–2012.

I worked with faculty to supplement the introductory courses by holding weekly problem sessions for a small group of students and grading their homework. My assigned subjects were basic real analysis, linear algebra and topology of metric spaces.

- Coorganizer (with V. Gitman) of the CUNY Set Theory seminar, 2015–2017.
- Coorganizer (with K. Minden and K. Williams) of the CUNY Student Set Theory seminar, 2013–2017.

#### Conference talks

- Embedding posets into the set-generic multiverse, Forcing Project Networking Conference, Konstanz, September 2018.
- Nonamalgamation in the generic multiverse, Novi Sad Conference in Set Theory and General Topology, Novi Sad, July 2018.
- Surgery and nonamalgability for Cohen reals, Winter School in Abstract Analysis 2018, Hejnice, January 2018.
- Restricting forcing axioms to ground models, 6th European Set Theory Conference, Budapest, July 2017.
- A Mitchell-like order for Ramsey cardinals, 2017 Joint Mathematics Meetings, Atlanta, January 2017.

- The grounded Martin's axiom, NY Graduate Student Logic Conference, The Graduate Center, CUNY, May 2016.
- Joint Laver diamonds, Set Theory Day, The Graduate Center, CUNY, March 2016.
- Joint Laver diamonds, BEST 2015, San Francisco State University, June 2015.
- Restricting Martin's axiom to a ccc ground model, 2014 ASL Logic Colloquium, Vienna University of Technology, July 2014.
- Restricting Martin's axiom to a ccc ground model, 2014 Joint Mathematics Meetings, Baltimore, January 2014.
- Cardinal-recognizing infinite time Turing machines, Computability in Europe 2013, Milan, July 2013.

### Seminar talks (by venue)

## Charles University, Set theory seminar

- Surgery and generic coding, October 2018.
- Amalgamability between Cohen extensions, March 2018.
- Joint guessing principles, November 2017.
- The grounded Martin's axiom, September 2017.

### Rutgers University, Logic seminar

• The grounded Martin's axiom, April 2016.

## Virginia Commonwealth University, Analysis, logic and physics seminar

- Some guessing principles in set theory, April 2016.
- Cardinal-recognizing infinite time Turing machines, March 2014.

#### University of Ljubljana, Seminar for mathematical foundations

- Infinite time Turing machines, December 2012.
- multi-part tutorial on forcing, March 2012.

#### The Graduate Center, CUNY, Set theory seminar

- Surgery and generic coding, October 2018.
- Tukey classes of complete ultrafilters, May 2018.
- Bukovský's theorem on forcing extensions, November 2016.
- The Mitchell order for Ramsey cardinals, October 2015.
- Constructing joint diamonds from a single diamond, May 2015.
- Joint Laver diamonds, September 2014.
- The consistency strength of PFA for posets preserving  $\aleph_2$  or  $\aleph_3$ , March 2014.
- Grounded Martin's axiom, November 2013.