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RESEARCH INTEREST

Ramsey theory, topological dynamics, set theory, model theory, functional analysis, abstract harmonic analysis, continuum theory, general topology

EMPLOYMENT

2017–2019	**Carnegie Mellon University** (Pittsburgh, USA) *Postdoctoral Associate*
2014–2016	**Universidade de São Paulo** (São Paulo, Brazil) *Postdoctoral Fellow*
2013	**Hausdorff Research Institute for Mathematics** (Bonn, Germany) *Postdoctoral Fellow of the Hausdorff Trimester Program on Universality and Homogeneity*

THEMATIC PROGRAMS AND RESEARCH VISITS

2015	I was a visiting fellow at the programme **Mathematical, Foundational and Computational Aspects of the Higher Infinite** (Isaac Newton Institute for Mathematical Sciences, Cambridge, UK) between August 23 and November 6, 2015.
2014	I visited Prof. Alexander S. Kechris at the California Institute of Technology between September 21 and December 13, 2014.
2012	I participated at the **Thematic Program on Forcing and its Applications** (Fields Institute, Toronto, Canada) between June 1 and December 31, 2012.
2010	I participated at the **Thematic Program on Asymptotic Geometric Analysis** (Fields Institute, Toronto, Canada) between September 1 and December 31, 2010.

EDUCATION

2013	**University of Toronto** (Toronto, Canada) **PhD in Mathematics** – *Supervisor: Stevo Todorčević (University of Toronto)*
2009	**Charles University in Prague** (Prague, Czech Republic) **MSc in Mathematics** (with honors) – *Supervisor: Petr Simon (Charles University in Prague)*
2008	**VU University Amsterdam** (Amsterdam, the Netherlands) **MSc in Applied Mathematics** (Thesis-based) – *Supervisor: Klaas Pieter Hart (TU Delft)*

2006	**Charles University in Prague** (Prague, Czech Republic)
	BSc in General Mathematics (with honors)
	– *Supervisor: Miroslav Hušek*

PAPERS

Papers published/accepted in refereed journals

1. (*with Jordi Lopez-Abad, Martino Lupini, and Brice Mbombo*) "The Ramsey property for Banach spaces and Choquet simplices, and applications", accepted.

2. (*with Aleksandra Kwiatkowska*) "Gowers' Ramsey Theorem with multiple operations and dynamics of the homeomorphism group of the Lelek fan", Journal of Combinatorial Theory, Series A, Volume 150, 2017, 108–136 (`http://arxiv.org/abs/1411.5134`).

3. (*with Aleksandra Kwiatkowska*) "Lelek fan from a projective Fraïssé limit", *Fund. Math. 231 (2015), 57–79* (`http://arxiv.org/abs/1312.7514`).

4. "More universal minimal flows of groups of automorphisms of uncountable structures", *Asymptotic Geometric Analysis. Proceedings of the Fall 2010 Fields Institute Thematic Program. (Monika Ludwig, Vitali Milman, Vladimir Pestov, Nicole Tomczak-Jaegermann, editors), Fields Institute Communications 68, Springer-Verlag, 2013.*

5. "Universal minimal flows of groups of automorphisms of uncountable structures", *Canadian Mathematical Bulletin, Published electronically on July 27, 2012,* `dx.doi.org:10.4153/CMB-2012-023-4`.

6. (*with Klaas Pieter Hart, Logan Hoehn, Berd van der Steeg*) "Lelek's problem is not a metric problem", *Topology Appl., 158(18):2479-2484, 2011.*

Submitted for Publication

7. (*with Aleksandra Kwiatkowska*) "The universal minimal flow of the group of homeomorphisms of the Lelek fan" (`https://arxiv.org/abs/1706.09154`)

Preprints

8. (*with Jordi Lopez-Abad and Brice R. Mbombo*) "The Ramsey property for Banach spaces, Choquet simpleces, and their noncommutative analogs" (`https://arxiv.org/abs/1708.01317`)

9. "Ramsey property for Boolean algebras with ideals and $\mathcal{P}(\omega_1)/\text{fin}$" `arxiv.org/abs/1212.1529`.

10. "Universal minimal flow in the language of near filters and its applications" `arxiv.org/abs/1212.1532`.

In preparation

11. (*with Andy Zucker*) "Samuel compactification of automorphism groups"

Theses

"Topological dynamics of automorphism groups of ω-homogeneous structures via near ultrafilters", *PhD Thesis, Department of Mathematics, University of Toronto, 2013.*

"Span and Chainability in Non-metric Continua", *Master Thesis, Faculty of Sciences, VU University Amsterdam, 2008.*

"Variations of Brouwer Fixed Point Theorem", *Bachelor Thesis, Faculty of Mathematics and Physics, Charles University in Prague, 2006.*

INVITED TALKS

Invited Conference Talks

Nov 2017	*Ultrafilters, Ramsey Theory and Dynamics* Villeurbanne, France "Approximate Ramsey theory"
Dec 2016	*II Congresso Brasileiro de Jovens Pesquisadores em Matemática Pura e Aplicada* IMECC/Unicamp "Algebra in the Samuel compactification"
Oct 2016	*EDAÍ* Universidade Federal do Rio de Janeiro "Constructions in topological dynamics via ultrafilters"
Set 2016	*Set Theory and its Applications in Topology* BIRS at Casa Matemática Oaxaca, Mexico "Ultrafilter combinatorics in topological dynamics," video at `http://www.birs.ca/events/2016/5-day-workshops/16w5053/videos/watch/201609151130-Bartosova.html`
Set 2016	*Colloquium Logicum 2016* University of Hamburg, Germany "Dual Ramsey Theorem and its applications in Topological Dynamics"
Jun 2016	*Young Set Theory 2016 Masterclass* University of Copenhagen, Denmark "Ramsey theory and topological dynamics"
Jun 2016	*Toronto Set Theory Seminar* Fields Institute, Toronto, Canada "Algebra in the Samuel compactification"
May 2016	*Fields Workshop on Dynamical Systems and Operator Algebras* University of Ottawa, Canada "On a problem of Ellis"
May 2016	*13th Annual Workshop on Topology and Dynamical Systems* University of Nipissing, North Bay, Canada "Combinatorics of ultrafilters on automorphism groups"
Apr 2016	*Seminário de Matemática Aplicada* UNIFESP, São José dos Campos, Brazil "Ramsey theory in topological dynamics"
Jan 2016	*ASL Winter Meeting (with Joint Mathematics Meetings)* Seattle, Washington, USA "Ramsey properties in topological dynamics"
Dec 2015	*The Role of the Higher Infinite in Mathematics and Other Disciplines* Isaac Newton Institute, Cambridge, UK "Ramsey theory in topological dynamics" video at `https://www.newton.ac.uk/seminar/20151214100011001`
Dec 2015	*2015 CMS Winter Meeting* Montréal, Canada "Problems about Boolean algebras in topological dynamics"
Nov 2015	*Independence Results in Mathematics and Challenges in Iterated Forcing* University of East Anglia, Norwich, UK "Boolean algebras in topological dynamics"

Jun–Jul 2015	*When Topological Dynamics meets Model Theory* Université Aix-Marseille, Marseille, France "The group of linear isometries of the Gurarij space is extremely amenable"
Mar–Apr 2015	*Forcing and its Applications Retrospective Workshop* Fields Institute, Toronto, Canada "Applications of Ramsey theory in topological dynamics" video at `https://www.fields.utoronto.ca/video-archive/2015/04/340-4507`
Feb 2015	*SEALS 2015* University of Florida, Gainesville, USA " Partition theorems from the dual Ramsey theorem"
Feb 2015	*Workshop on Functional Analysis and Dynamical Systems* UFSC, Florianópolis, Brazil "Ramsey theory and the group of homeomorphisms of the Lelek fan"
Aug 2014	*Novi Sad Conference in Set Theory and General Topology* University of Novi Sad, Novi Sad, Serbia "Lelek fan and generalizations of finite Gowers' FIN_k theorem"
May 2014	*DU Sesquicentennial Ramsey Theory Conference* University of Denver, Denver, USA "Finite Gowers' FIN_k Theorem with multiple tetris-like operations"
Apr 2014	*AMS Spring Western Sectional Meeting* University of New Mexico, Albuquerque, USA "Ramsey classes of Boolean algebras with ideals"
Mar 2014	*48th Spring Topology and Dynamics Conference* University of Richmond , Richmond, USA "Applications of Ramsey theory and near ultrafilters in topological dynamics" (semi-plenary speaker)
Mar 2014	*INFTY Final Conference* University of Bonn, Bonn, Germany "Lelek fan from a projective Fraïssé limit"
Feb 2014	*Geometric functional analysis and group actions* UFSC, Florianópolis, Brazil "Lelek fan and projective Fraïssé theory"
Oct 2013	*Workshop on Homogeneous Structures* Hausdorff Research Institute for Mathematics, Bonn, Germany "The universal minimal flow of the group of automorphisms of $\mathcal{P}(\omega_1)/\mathrm{fin}$" video at `https://www.youtube.com/watch?v=wb2nvg1GG4s`
Sep 2013	*ESI 2013 Descriptive Set Theory Workshop* Erwin Schrödinger Institute, Vienna, Austria "Near ultrafilters, groups of automorphisms and unique amenability"
Apr 2013	*AMS Spring Western Sectional Meeting* University of Colorado, Boulder, USA "Filter dynamical systems"
Apr 2012	*The Fifth MIG* University of Denver, Denver, USA "Universal minimal flows in the language of filters"

Invited Seminar and Colloquia Talks

Oct 2017	*McGill Seminar on Logic, Category Theory, and Computation* McGill University, Montreal, Canada "Questions on freedom of actions"

Sep 2017	*Caltech—UCLA Logic Seminar* University of California, Los Angeles, USA "Free actions via graphs"
Nov 2016	*Seminário de Combinatória* Universidade Federal Fluminense "Combinatória em dinâmica topológica"
Nov 2016	*Álgebras de Operadores* Universidade Federal de Santa Catarina, Florianópolis, Brazil "Álgebra e combinatória em compactificação de Samuel"
Oct 2016	*Colóquio do Departamento de Matemática* Universidade Federal de Santa Catarina, Florianópolis, Brazil "Teoria de Ramsey estrutural e a propriedade de ponto fixo dos grupos de automorfismos"
Set 2016	*ML Seminar* University of Hamburg, Germany "Algebra and combinatorics in the Samuel compactification of automorphism groups"
Jun 2016	*Toronto Set Theory Seminar* Fields Institute, Toronto, Canada "Algebra in the Samuel compactification"
Dec 2015	*CUNY Logic Workshop* CUNY Graduate Center, New York, USA "Ramsey theory and topological dynamics"
Aug 2015	*Toronto Set Theory Seminar* Fields Institute, Toronto, Canada "On the structure of the universal minimal flows via (near) ultrafilters"
Aug 2015	*Analysis seminar* University of Ottawa, Canada "On the structure of the universal minimal flows via (near) ultrafilters"
Jul 2015	*Nipissing Computer Science and Mathematics Seminar* Nipissing University, North Bay, Canada "Topological dynamics and dual Ramsey theory"
May 2015	*Seminário de Análise/EDP* Universidade Federal do Rio de Janeiro, Brazil "Dynamics of isometry groups of approximately homogeneous Banach spaces"
May 2015	*Lógica, Topologia e Teoria dos Conjuntos* Universidade Federal da Bahia, Salvador, Brasil " Approximate Ramsey properties for finite-dimensional Banach spaces and simplexes" video at `https://www.youtube.com/watch?v=WL6lQbMzeS0`
Nov 2014	*UCLA Logic Colloquium* University of California, Los Angeles, USA "The group of linear isometries of the Gurarij space is extremely amenable"
Oct 2014	*Toronto Set Theory Seminar* Fields Institute, Toronto, Canada "Finite Gowers' Theorem and the Lelek fan"
Apr 2013	*Nipissing Computer Science and Mathematics Seminar* Nipissing University, North Bay, Canada "Groups of Automorphisms and the Ramsey Property"
Mar 2013	*Toronto Set Theory Seminar* Fields Institute, Toronto, Canada "Filter dynamical systems"

Feb 2013	*UCLA Logic Colloquium*
	University of California, Los Angeles, USA
	"Ramsey property for Boolean algebras with ideals and Katowice problem"

Feb 2013	*Caltech Logic Seminar*
	California Institute of Technology, Pasadena, USA
	"Universal minimal flow in the language of filters"

Apr 2012	*UIUC Logic Seminar*
	University of Illinois, Urbana-Champaign, USA
	"Universal minimal flows in the language of filters"

Apr 2012	*UIC Logic Seminar*
	University of Illinois, Chicago, USA
	"Universal minimal flows in terms of Boolean algebras and its applications"

SELECTED CONTRIBUTED TALKS

Jul–Aug 2016	*Logic Colloquium 2016*
	Univerity of Leeds, UK
	"Combinatorics of ultrafilters on automorphism groups"

Jul 2016	*Toposym 2016*
	Prague, Czech Republic
	"On a problem of Ellis and Pestov's conjecture"

Jul 2015	*The Sixth Visegrad Conference on Dynamical Systems*
	Czech Technical University in Prague, Czech Republic
	"Ramsey theory in dynamics of homeomorphism groups"

Jun 2015	*30th Summer Conference on Topology and its Applications*
	NUI Galway, Ireland
	"Towards the universal minimal flow of the homeomorphism group of the pseudoarc"

Jun 2014	*Logic, Dynamics, and Their Interactions II*
	University of North Texas, Denton, USA
	"Towards the universal minimal flow of the group of homeomorphisms of the Lelek fan"

Apr 2013	*2013 NY Graduate Student Logic Conference*
	CUNY Graduate Center, New York, USA
	"The problem of Ellis"

Jul 2012	*Trends in Set Theory*
	Warsaw, Poland
	"Universal minimal flow in the language of filters"

Jun 2012	*Miniworkshop on Set Theory*
	Vienna, Austria
	"Ultrafilter dynamical systems and their applications"

Mar 2012	*46th Spring Topology and Dynamics Conference*
	Mexico City, Mexico
	"Universal minimal flows of groups of automorphisms of uncountable structures"

Aug 2012	*11th Topological Symposium*
	Prague, Czech Republic
	"The universal minimal flow in the language of near ultrafilters"

Jul 2011	*3rd European Set Theory Meeting*
	Edinburgh, UK
	"Universal minimal flows of closed subgroups of permutation groups" (poster)

Jun 2011	*Infinite and Finite Sets* Budapest, Hungary "Universal minimal flows for groups of automorphisms of homogeneous relational structures"
Jul 2010	*25th Summer Conference on Topology and its Applications* Kielce, Poland "Model theory in compact Hausdorff spaces"
Jan 2009	*Winter School on Abstract Analysis 2009* Hejnice, Czech Republic "Span zero and chainability in non-metric continua"
Sep 2008	*Sumer School on General Algebra and Ordered Sets* Třešť, Czech Republic "Chainability and span zero in non-metric continua"

GRANTS AND AWARDS

2014–2016	FAPESP grants 2013/14458-9 (2014–2016), 2014/12405-8 (2014) and 2015/09278-7 (2015)
2009–2013	University of Toronto Graduate Fellowship
2009–2011	Student Research Grant, Grant Agency of Charles University in Prague, Grant project: Model Theory in Topology
2009	First prize in Student Research Project in Mathematics and Informatics 2009, Category: Mathematical Structures - Algebra, Topology and Geometry, Project title: Lelek's Conjecture
2008	Research Assistantship, VU University Amsterdam
2007–2008	Faculty of Sciences Fellowship, VU University Amsterdam
2004–2009	Merit Scholarship, Charles University in Prague

SERVICE

2010–2012	I organized a joint weekly Student Set Theory and Topology Seminar between the University of Toronto and York University

COURSES – LECTURER
I will lecture the following mini-courses.

Dec 2016	**DOCCOURSE Ramsey Theory, Charles University Prague, fall 2016** Dual Ramsey, the Gurarij space and the Poulsen simplex
Nov 2016	**Universidade de São Paulo** Ramsey theory in topological dynamics/ Teoria de Ramsey e dinâmica topológica

I lectured the following mini-course.

Feb 2014	**Universidade Federal de Santa Catarina, Escola de Verão 2014** Countable ultrahomogeneous structures and their automorphism groups

I lectured the following courses.

2017	**Carnegie Mellon University** 21-111 Calculus I 21-373 Algebraic structures

2013	**University of Toronto**
	MAT223 - Linear Algebra I (**course coordinator**)
	MAT187 - Calculus II (Engineering)

COURSES - TEACHING ASSISTANT

I have been a tutorial/teaching assistant for the following courses.

2009–2013	**University of Toronto**
	MAT185 - Linear Algebra (Engineering Science)
	MAT188 - Linear Algebra (Engineering)
	MAT196 - Calculus A (Engineering)
	MAT223 - Linear Algebra I
	MAT224 - Linear Algebra II
	MAT246 - Concepts in Abstract Mathematics
	MAT335 - Chaos, Fractals and Dynamics
	MAT401 - Polynomial Equations and Fields
	MAT475 - Problem Solving Seminar