

Nir GADISH

PERSONAL DATA

CURRENT POSITION: NSF Postdoctoral fellow, at MIT
ADDRESS: 182 Memorial Dr, Cambridge, MA 02142
PHONE: (872) 212-2517
EMAIL: ngadish@mit.edu

EDUCATION

- 2013 - 2019 | **The University of Chicago**, department of MATHEMATICS
Ph.D. received June 2019, M.S. received June 2015.
Dissertation: "A general framework for representation stability, with applications to arrangements and arithmetic".
Thesis Advisor: Prof. Benson FARB
- 2008-2012 | **Hebrew University of Jerusalem**
B.Sc in MATHEMATICS, PHYSICS and AMIRIM special honors program.
SUMMA CUM LAUDE - FINAL GRADE: 98.00%
Honors Thesis: "Free differential graded Lie-algebra model of the 2-cell".
Honors Thesis Advisor: Prof. Ruth LAWRENCE

PREPRINTS AND PUBLICATIONS

- 2019 A generating function approach to new representation stability phenomena in orbit configuration spaces (with C. Bibby), *arXiv:1911.02125* (submitted).
- 2018 Adding points to configurations in closed balls (with L. Chen and J. Lanier), *Proc. of the AMS* (2019).
- 2018 Combinatorics of orbit configuration spaces (with C. Bibby), *arXiv:1804.06863* (submitted).
- 2018 Dimension-independent statistics of $Gl_n(F_q)$ via character polynomials, *Proc. of the AMS* (2019).
- 2017 An explicit symmetric DGLA model of a bi-gon (with I. Griniasty and R. Lawrence), *J. of Knot Theory and its Ramifications*, Vol. 28 (2019).
- 2017 A trace formula for the distribution of rational G -orbits in ramified covers, adapted to rep. stability, *NYJ. of Math*, Vol. 23 (2017): 987-1011.
- 2016 Categories of FI type: a unified approach to generalizing representation stability and character polynomials, *J. of Algebra*, Vol. 480 (2017): 450-486.
- 2016 Representation stability for families of linear subspace arrangements, *Adv. in Math*, Vol. 332 (2017): 341-377.

HONORS AND AWARDS

- 2019-2021 NSF Mathematical Sciences Postdoctoral Research Fellowship, (MIT).
- 2013-2015 McCormick Fellowship, (University of Chicago).
- 2012 The Dean's Prize for Master students, (Hebrew University of Jerusalem).
- 2009-2011 "AMIRIM" special honors program, (Hebrew University of Jerusalem).
- 2011 Dean's List, (Hebrew University of Jerusalem).
- 2010 The Rector's Prize, (Hebrew University of Jerusalem).
- 2009 The Rector's Prize, (Hebrew University of Jerusalem).

INVITED TALKS AND PRESENTATION

- NOV 2019 Finitely generated diagrams of linear subspace arrangements, *Topology seminar*, (MIT)
SEP 2019 The “generating function” of configuration spaces, *Topology seminar*, (Georgia Tech.)
SEP 2019 The “generating function” of configuration spaces, *Topology seminar*, (Northeastern U.)
JUL 2019 From the topology of the space of polynomials to insolvability, *GA-Tech REU*, (Georgia Tech.)
JUN 2019 The “generating function” of configuration spaces, *Arrangements at Western*, (Western Ontario)
APR 2019 The “generating function” of configuration spaces, *Midwest rep. stability workshop*, (Chicago)
APR 2019 The “generating function” of configuration spaces, *Topology meeting*, (Stockholm U. and KTH)
FEB 2019 Combinatorics of orbit configuration spaces, *Topology RTG seminar*, (U. of Michigan)
JAN 2019 Finitely generated families of arrangements, *Topology seminar*, (U. of Copenhagen)
OCT 2018 Finitely generated families of arrangements, *Topology seminar*, (U. of Minnesota)
SEP 2018 Combinatorics of representation stability, *Combinatorics preseminar*, (MIT)
SEP 2018 Finitely generated families of arrangements, *GASC seminar*, (Northeastern University)
SEP 2018 Stable character theory, *Algebra seminar*, (Weizmann Institute)
AUG 2018 Stable character theory, *Algebra seminar*, (Bar Ilan U.)
JUNE 2018 Finitely generated families of arrangements, *Roots of Topology*, (U. of Chicago)
MAY 2018 Finitely generated families of arrangements, *Topology seminar*, (U. de Strasbourg)
MAY 2018 Finitely generated families of arrangements, *Topology seminar*, (U. de Montpellier)
MAR 2018 Finitely generated families of arrangements, *Topology seminar*, (U. de Rennes 1)
MAR 2018 Finitely generated families of arrangements, *Algebra seminar*, (UC Irvine)
MAR 2018 Finitely generated families of arrangements, *Representation stability seminar*, (U. of Michigan)
OCT 2017 Finitely generated families of arrangements, *No Boundaries: Farbfest*, (U. of Chicago)
SEP 2017 Lifting finite generation to the space level, *Topology seminar*, (Purdue University)
JUL 2017 Finitely generated families of arrangements, *Math. Congress of the Americas*, (McGill University)
JUL 2017 Stability patterns in representation theory, *‘Amitsur’ algebra seminar*, (Hebrew U. of Jerusalem)
JUN 2017 Stability patterns in representation theory, (Tel Aviv University)
APR 2017 Categories of FI-type: generalizing rep. stability, *AMS sectional meeting*, (University of Indiana)
SEP 2016 Rep. stability of families of linear subspace arrangements, *AMS sec. meeting*, (Bowdoin College)

TEACHING EXPERIENCE

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| 2014-2019 | The University of Chicago |
| 2018-2019 | Instructor for CALCULUS III (MATH 153), Instructor for CALCULUS II (MATH 152), |
| 2017-2018 | Instructor for CALCULUS II (MATH 152), Teaching assistant for <i>UChicago study abroad program in Paris</i> . |
| 2016-2017 | Instructor for MATH. METHODS IN THE SOCIAL SCIENCES (MATH 195), (IBL) Coinstructor for BASIC GEOMETRY (MATH 176), Instructor for CALCULUS III (MATH 153). |
| 2015-2016 | Instructor for LINEAR ALGEBRA (MATH 196), Instructor for CALCULUS II (MATH 152), Instructor for CALCULUS I (MATH 151). |
| 2014-2015 | TA for INTRO. TO ALGEBRAIC TOPOLOGY (MATH 263), TA for POINT-SET TOPOLOGY (MATH 262), TA for INTRO. TO REPRESENTATION THEORY OF FINITE GROUPS (MATH 267). |
| 2010-2012 | Hebrew University of Jerusalem |
| 2011-2012 | Junior Instructor for APPLIED MATHEMATICS I AND II (MATH 114, 157), |
| 2010-2011 | TA for COMPLEX VALUED FUNCTIONS AND APPLICATIONS (MATH 314). |

PROFESSIONAL SERVICES

- Referee for *NYJ. of Math.*
- Referee for *Proc. of the AMS.*
- Referee for *Transactions of the AMS.*
- Referee for *J. of Algebraic Combinatorics.*
- 2015-2016 Co-organizer of the weekly Geom-Top student seminar, (University of Chicago).
- 2014-2015 Co-organizer of the weekly graduate "Pizza" student seminar, (University of Chicago).

COMMUNITY OUTREACH

- 2020 Mentor at *MIT PRIMES USA* – advanced math research projects for high school students.
- Apr 2016 Judge at *QED: Chicago's Young Math Symposium.*
- Jul 2015 Mentor for the UChicago summer REU projects – in the special program for underrepresented groups.

STUDENT ADVISING AND MENTORING

- 2019-2020 Mentor for '1st Generation Program', (MIT):
- 2016-2017 Mentor for 'Directed Reading Program', (University of Chicago):
 - "Internal set theory", Diego Bejarano (Spring '17);
 - "Nonstandard universes", Diego Bejarano (Winter '17);
 - "Representations of Lie Groups", Arieh Zimmerman (Fall '16);
- 2016 Advisor for summer REU projects, (University of Chicago):
 - "The fundamental group and Seifert-Van Kampen's theorem", Katharine Gallagher;
 - "The Sylow theorems and their applications", Amin Idelhaj;
 - "Spectral theory and applications", Jingjing Li.
- 2015-2016 Mentor for 'Directed Reading Program', (University of Chicago):
 - "Representations of Matrix Groups", Arieh Zimmerman (Spring '16);
 - "Differential Geometry", Arieh Zimmerman (Winter '16);
 - "Differential Geometry", Arieh Zimmerman (Fall '15);
- 2015 Advisor for summer REU projects, (University of Chicago):
 - "Bundles, Stiefel-Whitney classes, and braid groups", Peter Haine;
 - "The topology of spaces of polynomials via vector bundle theory", Randy VanWhy.
- 2014-2015 Mentor for 'Directed Reading Program', (University of Chicago):
 - "Model Theory in Algebraic Geometry", Kyle Gannon (Spring '15);
 - "Forcing in Set Theory", Kyle Gannon (Winter '15);
 - "Forcing in Set Theory", Kyle Gannon (Fall '14);
- 2014-2015 'IMPACT' mentor for an incoming international student, (University of Chicago).
- 2014 Advisor for summer REU projects, (University of Chicago):
 - "Incompleteness in ZFC", Victor Zhang;
 - "Intro. to the Keisler Order", Kyle Gannon.