

CURRICULUM VITAE

Education and Employment:

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| 2015 - ongoing | Assistant Professor, MIT (tenure-track) |
| 2012 - 2015 | PhD in Mathematics, Columbia University Thesis: <i>Quantum Algebras and Cyclic Quiver Varieties</i> |
| 2009 - 2012 | MA in Mathematics, Harvard University |
| 2004 - 2008 | BA in Mathematics, Princeton University (with Highest Honors) Thesis: <i>Laumon Quasiflag Spaces and Many-Body Systems</i> |

Visits and other Appointments:

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| Jan - May 2018 | Research Member at MSRI, Berkeley, USA |
| May - Jun 2016 | Visitor at the Institut Henri Poincare, Paris, France |
| Mar - Aug 2014 | Visitor at RIMS, Kyoto, Japan |
| Sep - Dec 2010 | Visitor at the Hebrew University in Jerusalem, Israel |
| Feb - Apr 2009 | Visitor at the Max Planck Institute, Bonn, Germany |
| Oct - Dec 2008 | Visitor at the IHES, Bures-sur-Yvette, France |

Publications:

AGT relations for sheaves on surfaces

Journal article - preprint

W-algebras associated to surfaces

Journal article - preprint

Shuffle algebras associated to surfaces

Journal article - preprint

Flag Hilbert schemes, colored projectors and Khovanov-Rozansky homology

Journal article (with E. Gorsky and J. Rasmussen) - preprint

Affine Laumon Spaces and the Calogero-Moser Integrable System

Journal article - preprint

Quantum Toroidal and Shuffle Algebras, R -matrices and a Conjecture of Kuznetsov

Journal article - preprint

The q -AGT- W relations via shuffle algebras

Journal article, **Communications in Mathematical Physics**

doi:10.1007/s00220-018-3102-3 (2018)

Infinitesimal change of stable basis

Journal article (with E. Gorsky) **Selecta Mathematica**

doi: 10.1007/s00029-017-0327-5 (2017)

Exts and the AGT relations

Journal article, **Letters in Mathematical Physics**

Vol. 106 (2016), no. 9, 1265–1316

Refined knot invariants and Hilbert schemes

Journal article (with E. Gorsky), **Journal de Mathématiques**

Pures et Appliquées, doi: 10.1016/j.matpur.2015.03.003 (2015)

The $\frac{m}{n}$ Pieri Rule

Journal article, **International Mathematics**

Research Notices, doi: 10.1093/imrn/rnv110 (2015)

Moduli of Flags of Sheaves and their K -theory

Journal article, **Algebraic Geometry**, Volume 2, Issue 1 (2015)

The Shuffle Algebra Revisited

Journal article, **International Mathematics**

Research Notices, doi: 10.1093/imrn/rnt156 (2013)

Holder properties of perturbed skew products and Fubini regained

Journal article (with Yu. Ilyashenko)

Nonlinearity Volume 25, Number 8 (2012), 2377–2399

Yangians and Cohomology Rings of Laumon Spaces

Journal article (with B. Feigin, M. Finkelberg, L. Rybnikov)

Selecta Mathematica Volume 17, Number 3 (2011), 573–607

Invisible Parts of Attractors

Journal article (with Yu. Ilyashenko)

Nonlinearity Volume 23, Number 5 (2010), 1199–1219

Laumon Spaces and the Calogero-Sutherland Integrable System

Journal article, **Inventiones Mathematicae**,

Volume 178, Number 2 (2009), 299–331

Conferences and Seminars Co-organized:

Categorified Hecke Algebras, Link Homology, and Hilbert Schemes,
American Institute of Mathematics, October 1-5, 2018

Categorification in Mathematical Physics,
Simons Center for Geometry and Physics, April 9-13, 2018

Moduli and Representation Theory seminar, MSRI, Spring 2018

Geometric Representation Theory Seminar, MIT, 2016-ongoing

MIT-Northeastern joint Graduate Student Seminars, 2016-2017

Awards, Honors and Fellowships:

Alfred P. Sloan Research Fellowship 2018–2020

NSF Department of Mathematical Sciences Award no. 1600375, 2016–2019

Prize of the Romanian Mathematical Society
offered to a young Romanian mathematician for outstanding results in research, 2015

James Mills Peirce Fellowship, Harvard Graduate School of Arts and Sciences, 2009

Honorable Mention for the AMS-MAA-SIAM Frank and Brennie Morgan Prize
for Outstanding Research in Mathematics by an Undergraduate Student, 2009

Invited Talks (partial list):

Summer School on Geometric Representation Theory, IST Austria, Jul 9–13, 2018

CIME School on Geometric Representation Theory and Gauge Theory,
Cetraro, Italy, Jun 25–29, 2018

Quantum Integrability and Quantum Schubert Calculus Workshop,
Chicheley Hall, United Kingdom, June 11–13, 2018

Algebra Seminar, University of Southern California, Feb 26, 2018

Mathematical Physics Seminar, MSRI Berkeley, Feb 05, 2018

String-Math Conference, Hamburg, Jul 24–29, 2017

Geometric Representation Theory Conference, University of Glasgow, Jul 3–7, 2017

Quantum Topology and Categorified Representation Theory Workshop,

Isaac Newton Institute for Mathematical Sciences, Jun 26–30, 2017

IST Austria Algebraic Geometry Seminar, Jun 14, 2017

University of Chicago Algebraic Geometry Seminar, Feb 22, 2017

Workshop on Symplectic Varieties and Geometric Representation Theory,
UNC Chapel Hill, October 28–30, 2016

Geometric Representation Theory Conference, Kyoto University, Oct 10–14, 2016

String-Math Seminar, UC Berkeley, Sep 26, 2016

Advanced School and Workshop on Moduli Spaces, Mirror Symmetry and Enumerative
Geometry, ICTP Trieste, Aug 1-19, 2016

Mini-course at the Institut Henri Poincare String-Math program, Paris, May 27–June 8, 2016

Harvard–MIT Algebraic Geometry Seminar, Mar 1, 2016

Mini-course at the Winter School in Mathematical Physics, Les Diablerets, Jan 11-15, 2016

MIT Infinite Dimensional Algebra Seminar, Oct 16, 2015

Moduli Spaces in Algebraic Geometry and Mathematical Physics, Tianjin, Sep 14-18, 2015

Representation Theory and Geometry of Symplectic Resolutions, Boston, May 18-21, 2015

DAHA, Hall Algebras, Knot Theory and Combinatorics Workshop, Paris, Nov 17-20, 2014

Kyoto Geometric Representation Theory Conference, Jul 28, 2014

University of Tokyo Seminar Series, Jul 13-16, 2014

Jerusalem Mirror Symmetry Week, Jun 22, 2014

AMS-IMU Second Joint Meeting, Jun 18, 2014

Princeton University Algebraic Geometry Seminar, Oct 1, 2013

Vector Bundles on Algebraic Curves, Trieste, June 18, 2013

Universität zu Köln, Algebra Oberseminar, May 28, 2013

Southern California Algebraic Geometry Day at Caltech, Nov 17, 2012

Stony Brook Algebra, Geometry and Physics Seminar, Oct 10, 2012

Columbia University Workshop on Equivariant Quantum Differential Equations, Sep 19, 2011

Institute of Mathematics of the Romanian Academy Monthly Colloquium, Jan 19, 2011

MIT Infinite Dimensional Algebras Seminar, Nov 6, 2009

Max Planck Institut für Mathematik Oberseminar, Mar 12, 2009

Institute of Advanced Study Special Lecture, May 1, 2008

Princeton University Ergodic Theory and Statistical Mechanics Seminar, Dec 13, 2007

Teaching Experience:

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| Fall 2017 | Math 18.03 (differential equations, course head) at MIT |
| Spring 2017 | Math 18.781 (number theory) at MIT |
| Fall 2016 | Math 18.705 (commutative algebra) at MIT |
| Spring 2016 | Math 18.702 (algebra II) at MIT |
| Fall 2015 | Math 18.02 (multivariable calculus and linear algebra) at MIT |
| Fall 2013 | Math W1003 (introductory college algebra and pre-calculus) at Columbia University - 2 sections |
| Fall and Spring 2011 | Math 1b (calculus, series and differential equations) at Harvard University |

Language Skills:

Romanian (native), **English** (fluent), **Russian** (very good), **French** (very good)