

Date of birth: April 24, 1988

Position: Marie Curie Postdoctoral Research Fellow, University of York (UK)

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Department of Mathematics

University of York, Heslington, York, YO10 5DD, UK

Degrees

- PhD in Mathematics, University of Szeged, 2016 (*F-inverse covers of E-unitary inverse monoids*)
- MSc in Mathematics, University of Szeged, 2012 (*F-inverse covers of E-unitary inverse monoids*)
- BSc in Mathematics, University of Szeged, 2010 (*The word problem in products of group varieties*)

Positions

- Marie Curie Postdoctoral Research Fellow, University of York (UK), 2019-present
- Junior Lecturer, University of Szeged (Hungary), 2016-present
- Postdoctoral Researcher, University of Porto (Portugal), Jul 2017-Dec 2017
- Research Assistant, University of Szeged (Hungary), 2015-2016

Scientific awards, honors

- Pro Laudanda Promotio, 2019, *awarded by the Doctoral School of University of Szeged*
- Géza Grünwald medal, 2018, *awarded by the János Bolyai Mathematical Society*
- Exceptional student of University of Szeged, 2012, *awarded by University of Szeged, Faculty of Science and Informatics, to 6 students each year*
- Discipuli pro Universitate, 2012, *awarded by University of Szeged to one senior Msc student each year per faculty*
- Sóni József Scholarship, main award, 2012, *awarded by Sóni Foundation to 5 students of University of Szeged each year*
- Sóni József Scholarship, honorable mention, 2011, *awarded by Sóni Foundation*
- Fellowship granted by the Republic, 2011, *awarded by the Republic of Hungary to*

university students with exceptional performance

- IMC „International Mathematics Competition for University Students”, Second prize, 2010
- Conference of Scientific Students' Associations, First prize, 2010, *awarded by the Mathematics Department of University of Szeged*

Grants

- NKFI K128042 (National Research, Development and Innovation Fund), Algebras and their classes: structure and complexity, 2018-22, total budget: 12M HUF
- Marie Curie Individual Fellowship 2017 (at University of York, UK), role: project investigator, total budget: 183000 EUR
- OTKA K115518, role: participating researcher, project: Classes of algebras and clones, 2015-2019, total budget: 21,5M HUF
- Apáczai Csere János grant for PhD students, role: single beneficiary, 2014, total budget: 1,8M HUF
- Campus Hungary grant for one semester abroad, role: single beneficiary, 2013, total budget: 861000 HUF
- OTKA K104251, role: participating researcher, project: Algebras and relational structures, 2013-2017, total budget: 12M HUF

Publications

- [1] G. Czédli, T. Dékány, L. Ozsvárt, N. Szakács, B. Udvari: *On the number of slim, semimodular lattices*, *Mathematica Slovaca*, **66** (2016) 5-18, arXiv:1208.6173
- [2] J. Meakin, N. Szakács: *Inverse monoids and immersions of 2-complexes*, *Internat. J. of Algebra and Computation*, **25** (2015) 301-323, arXiv:1401.2621
- [3] N. Szakács: *On the graph condition regarding the F -inverse cover problem*, *Semigroup Forum*, **92** (2016) 551-558, arXiv:1501.06466
- [4] N. Szakács, M. Szendrei: *On F -inverse covers of finite-above inverse monoids*, *J. Algebra*, **452** (2016) 42-65, arXiv:1511.09378
- [5] R. Jajcay, T. Jajcayova, N. Szakács, M. Szendrei: *Inverse monoids of partial graph automorphisms*, to appear in *J. Algebraic Comb.*, arXiv:1809.04422
- [6] J. Meakin, N. Szakács: *Inverse monoids and immersions of cell complexes*, submitted, arXiv:1709.03887
- [7] R. Gray, P. Silva, N. Szakács: *Algorithmic properties of inverse monoids with hyperbolic and tree-like Schützenberger graphs*, submitted, arXiv:1912.00950
- [8] B. Steinberg, N. Szakács: *Simplicity of inverse semigroup and étale groupoid*

algebras, submitted, arXiv:2006.13787

- [9] B. Steinberg, N. Szakács: *On the simplicity of Nekrashevych algebras of contracting self-similar groups*, submitted, arXiv:2008.04220

Conference talks

- Conference on Universal Algebra and Lattice Theory, “*On the number of slim, semimodular lattices*”, Szeged, June 24, 2012
- AAA87 & CYU28, “*On the membership problem for closed inverse submonoids of inverse monoids*”, Linz, Feb 9, 2014
- CSM The third conference for PhD students in mathematics, “*Inverse monoids and immersions of 2-complexes*”, Szeged, July 1, 2014
- AMS-EMS-SPM International meeting, Algebraic theory of semigroups and applications special session, **invited speaker**, “*On the graph condition regarding the F -inverse cover problem*”, Porto, June 13, 2015
- 16th ITAT: Information Technologies – Applications and Theory, “*Inverse monoids and immersions over 2-complexes*”, Tatranské Matliare, Sept 17, 2016
- Winter One-relator Workshop, **invited speaker**, “*Two examples of geometric methods in inverse semigroup theory*”, Norwich, UK, Jan 11, 2018
- Rhodesfest81 (A conference in honor of John Rhodes 81st birthday), **invited speaker**, “*Inverse monoids and immersions of cell complexes*”, Ramat Gan, Israel, Jun 5, 2018
- International Conference on Semigroups 2018 (on the occasion of Mária Szendrei’s 65th birthday), **invited speaker**, “*Inverse monoids of partial graph automorphisms*”, Lisbon, Portugal, July 12, 2018.
- Semigroups and Groups, Automata, Logics 2019, “*Inverse monoids with tree-like Schützenberger graphs*”, Cremona, Italy, June 10, 2019.
- NBSAN-meeting, “*Inverse monoids and immersions of cell complexes*”, Manchester, UK, Jul 12, 2019.
- International Conference on Semigroups and Applications, **invited speaker**, “*Simplicity of contracted inverse semigroup algebras*”, Cochin, India, Dec 9, 2019.

Conference organization

- International Conference on Semigroups (on the occasion of Mária Szendrei's 65th birthday), Lisbon, July 11-13, 2018
- Topics in Geometric Semigroup Theory, York, ~~17-19 June 2020~~ postponed

Study and research trips

- University of Nebraska-Lincoln, visiting scholar, August-December, 2013
- CIMPA Research School on Leavitt path algebras and C^* -algebras, Sirince, Turkey, June 29-July 12, 2015

Math popularization activities

Talks given:

- „*The famous Riemann hypothesis*”, Szeged, April 18, 2015, event: University Spring in the Bolyai Institute, audience: general public
- “ *$V-E+F=2$ - the Euler characteristic*”, Szeged, March 1, 2016, event: Awarding Ceremony of the TUDOD? riddle competition, audience: university students
- “*How (not) to be wrong - the power of mathematical thinking*”, Szeged, April 4, 2017, event: Eötvös Nights, audience: university students
- „*The unchanging*”, Szeged, April 22, 2017, event: University Spring in the Bolyai Institute, audience: general public
- “*How (not) to be wrong - the power of mathematical thinking*”, Szeged, July 12, 2017, event: HÍD camp, audience: senior high school students
- “*Two riddles and linear algebra*”, Porto, Nov 2, 2017, event: iNIGMA “Seminários Diagonais”, audience: university students

Other:

- „Medve” Outdoor Maths Competition, organizer in Szeged, 2014, 2015 and 2016
- Co-creator of a website (<http://www.math.u-szeged.hu/puzzle/>) of mathematical riddles and related facts, aimed to popularize mathematics among students