

# Curriculum Vitae

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## Education

- PhD Mathematics, Central European University (CEU), Budapest, 2010 - 2015,
- MSc Mathematics, University of Budapest (ELTE), 2008 - 2010.
- BS Mathematics, University of Iceland, 2005 - 2008.
- Gymnasium, Science line, Menntaskólinn Hraðbraut, 2003 - 2005.

## Thesis

- *The geometric genus and Seiberg–Witten invariant of Newton nondegenerate surface singularities*, Advisor: Némethi András, defended December 1 2015 with summa cum laude, arXiv:1601.02572.

## Employment

- September 2013–February 2016: ERC postdoctoral fellow at the Alfréd Rényi Institute for Mathematics in Budapest.
- Summer 2007: Writing of educational material on solving differential equations in Maple as well as teaching material in elementary linear algebra for the Science Institute of the University of Iceland.

## Articles

- The geometric genus of hypersurface singularities, joint with András Némethi, arXiv:1310.1268 [math.AG], accepted for publication in the Journal of the European Mathematical Society.
- The Milnor fiber of the singularity  $f(x, y) + zg(x, y) = 0$ , *Revista Matemática Complutense*, 29(1):225–239, 2016, arXiv:1411.1298 [math.AG].

## Manuscripts in preparation

- The boundary of the Milnor fiber of the singularity  $f(x, y) + zg(x, y) = 0$ .
- The Seiberg–Witten invariant conjecture for Newton nondegenerate surface singularities, joint with András Némethi.
- Multivariable filtrations, Poincaré series and periodic constants for Newton nondegenerate surface singularities, joint with András Némethi.
- The Poincaré series and zeta function of Newton nondegenerate suspension singularities.

## Presentations

- The geometric genus and Seiberg–Witten invariant of Newton nondegenerate surface singularities, Algebraic Geometry and Differential Topology Seminar, Alfréd Rényi Institute of Mathematics, October 16, 2015, Budapest, Hungary.
- The geometric genus of hypersurfaces, 13th International Workshop on Real and Complex Singularities Celebrating the 60th birthday of María del Carmen Romero Fuster July 27th - August 1st 2014 slides.

- The geometric genus of hypersurface singularities, Algebraic Geometry and Differential Topology Seminar, Alfréd Rényi Institute of Mathematics, March 14, 2014, Budapest, Hungary.
- Mixed Hodge structures on cohomologies of smooth varieties, Singularity theory and low dimensional topology seminar, Alfréd Rényi Institute of Mathematics, March 19 and 26, 2013, Budapest, Hungary.
- Basic Hodge theory, Singularity theory and low dimensional topology seminar, Alfréd Rényi Institute of Mathematics, November 29 and December 6, 2012, Budapest, Hungary.

### Conferences attended

- Local and global Invariants of Singularities, En l'honneur de Jean-Paul Brasselet à l'occasion de son 70ème anniversaire, CIRM, Luminy, France, February 23-27, 2015.
- Workshop on Singularities in geometry, topology, foliations and dynamics 2014, A celebration of the 60th birthday of Pepe Seade, Universidad Autónoma de Yucatan, Mérida, Mexico, December 8-19, 2014.
- 13th International Workshop on Real and Complex Singularities, Celebrating the 60th birthday of María del Carmen Romero Fuster, ICMC, São Carlos, Brazil, July 27-August 1, 2014.
- Algebra and Geometry and Topology of Singularities, On the occasion of the 60th birthday of I. Luengo, La Cristalera, Miraflores de la Sierra, Spain, September 9-13, 2013.
- Singularities in geometry and applications III, ICMS, Edinburgh, UK, September 02-06, 2013.
- Geometry and topology of smooth 4-manifolds, Max Planck Institute for Mathematics, Bonn, Germany, June 3-7, 2013.
- Geometry and topology of complex singularities, CIRM, Luminy, France, April 15-19, 2013.
- Conference on singularities and geometry-topology in honour of Sabir M. Gusein-Zade with occasion of his 60th birthday, El Escorial, Madrid, Spain, October 10-16, 2010.

### Schools attended

- School on Singularity theory in topology, geometry and foliations, Instituto de Matemáticas (Unidad Cuernavaca) of the Universidad Nacional Autónoma de México (UNAM), November 24-December 5, 2014.
- Moduli and Automorphic forms, IRTG and Alfréd Rényi Institute of Mathematics, Budapest, Hungary, August 25-30, 2014.
- Applications of étale cohomology, Alfréd Rényi Institute of Mathematics, Budapest, Hungary, June 16-20, 2014.
- New aspects on Singularity Theory, ICMAT, Madrid, Spain, September 16-27, 2013.
- Topology of singularities, University of Mainz, Mainz, Germany, September 19-23, 2011.
- Singularities : algebra, geometry and applications, Institute of Mathematics of the National Academy of Sciences of Ukraine and Kiev National Taras Shevchenko University, Kiev, Ukraine, August 8-19, 2011.
- School on D-modules and applications in Singularity Theory, CSIC, ICMAT and IMUS, Sevilla June 20-25 and Madrid June 27-July 2, Spain, 2011.

### Teaching Experience

- Teaching Assistant, Real Analysis, University of Iceland, Spring 2008, Weekly exercise sessions and correction of problems.
- Teaching Assistant, Analysis IIIB, University of Iceland, Fall 2007, Weekly exercise sessions and correction of problems.

## **Misc**

- Award for Advanced Doctoral Students, CEU, Budapest, Hungary, academic year 2012/2013.
- Second honorable mention in the Schweitzer Miklós Memorial Competition 2008, Budapest, Hungary.
- Participant in International Mathematical Olympiad, 3 points, July 8-19, 2005, Mérida, Mexico.
- On Honorary List of students academic year 2004/2005, Hraðbraut Gymnasium, Reykjavík, Iceland.

## **Software**

- lattice A program that calculates the root and Euler characteristics of lattice cohomology defined by Némethi. Written in C, available via author's webpage.
- Oka A collection of functions related to surface singularities, among them an implementation of Oka's algorithm for the resolution of Newton nondegenerate hypersurfaces. Written in PARI/GP, available via author's webpage.

## **Languages**

- Icelandic (native)
- English (fluent)
- Danish (not as fluent)
- Hungarian (less than fluent)