

## **Bogdan N. Ichim**

*Address: Str. Sfanta Vineri, nr. 5, bl. 105C, ap.54, Bucuresti, Romania*  
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### **EDUCATION:**

**CARL VON OSSIETZKY UNIVERSITÄT** , Institute of Mathematics  
Oldenburg, Germany  
Doctor of Science, December 2004 (7 semesters)  
Major: Commutative Algebra, Thesis: "Generalised Koszul Complexes"

**UNIVERSITY OF BUCHAREST**, Faculty of Mathematics  
Bucharest, Romania  
Master of Science, February 2001 (3 semesters)  
Major: Algebra, Thesis: "Stanley - Reisner Rings "

**UNIVERSITY " POLITEHNICA " BUCHAREST**, Faculty of Computer Science  
Bucharest, Romania  
Candidate for Bachelor of Science (4 semesters)  
Major: Computers

**UNIVERSITY OF BUCHAREST**, Faculty of Mathematics  
Bucharest, Romania  
Bachelor of Science, June 1999 (8 semesters)  
Major: Advanced Mathematics, Thesis: "Solutions of the Yang - Baxter Equation "

**" VASILE ALECSANDRI " COLLEGE**  
Galati, Romania  
Graduated, July 1995  
Major: Mathematics - Physics

### **AWARDS:**

2013 - 2015 Research Grant, UEFISCDI (2 years and 7 months)  
2009 - 2011 Research Grant, CNCSIS (2 years)  
2001 - 2004 Student Fellowship, University of Oldenburg (6 semesters)  
2000 Travel Grant, University of Bucharest  
1995 - 1999 Student Fellowship, University of Bucharest (8 semesters)  
1995 Member of the Romanian " big team " for the International  
Mathematical Olympiad.  
1995 II-nd prize at the Romanian Mathematical Olympiad  
1994 Honor Student, " Vasile Alecsandri " College  
1994 III-rd prize at the Romanian Mathematical Olympiad

### **EXPERIENCE:**

2008 - present Principal Scientific Researcher III at the Institute of Mathematics of  
the Romanian Academy  
2005 - 2009 Wissenschaftliche Mitarbeiter at the University of Osnabrück

2002 - 2004 Wissenschaftliche Hilfskraft at the University of Oldenburg  
2001 - 2008 Assistant Researcher at the Institute of Mathematics of the  
Romanian Academy

#### PUBLICATIONS:

- B. Ichim. “Generalized Koszul Complexes”. Thesis, Oldenburg University (Germany, 2004).
- B. Ichim and U. Vetter. “Koszul Bicomplexes and generalized Koszul complexes in projective dimension one”. *Comm. in Algebra*. 34, 4131 – 4156 (2006).
- B. Ichim and U. Vetter. “Length Formulas for the homology of generalized Koszul complexes”. *Revue Roumaine de Math. Pures et App.* 52 (2), 177 – 199 (2007).
- B. Ichim and U. Vetter. “Generalized Koszul complexes”. *Analele Stiintifice ale Universitatii Ovidius*. 14 (2), 61 – 72 (2007).
- W. Bruns and B. Ichim. “On the coefficients of Hilbert quasipolynomials”. *Proceedings of the AMS*. 135 (5), 1305 – 1308 (2007) .
- B. Ichim and T. Römer. “On toric face rings”. *Journal of Pure and App. Algebra* 210, 249 – 266 (2007).
- B. Ichim and T. Römer. “The canonical module of a toric face ring”. *Nagoya Math. J.* 194, 69 – 90 (2009).
- W. Bruns and B. Ichim. “Introduction to Normaliz 2.2”. *Acta Universitatis Apulensis, Proceedings of ICTAMI 2009, Alba Iulia* , 113 – 132 (2009).
- W. Bruns and B. Ichim. “Normaliz: Algorithms for Affine Monoids and Rational Cones”. *J. Algebra* 324, 1098 – 1113 (2010).
- W. Bruns, B. Ichim and C. Söger. “Introduction to Normaliz 2.5”. *LNCS* 6327, 209 – 212 (2010).
- V. Almendra and B. Ichim. “Introduction to jNormaliz 1.0”. *Proceedings of IS COPAM 2010, Iasi*, 81 – 86 (2011).
- W. Bruns, R. Hemmecke, B. Ichim, M Köppe and Christof Söger. “Challenging computations of Hilbert bases of cones associated with algebraic statistics”. *Exp. Math.* 20 (1), 25 – 33 (2011).
- W. Bruns, B. Ichim and C. Söger. “The power of pyramid decompositions in Normaliz”. Preprint <http://arxiv.org/abs/1206.1916>.
- B. Ichim and J. J. Moyano-Fernández. “How to compute the multigraded Hilbert depth of a module”. *Mathematische Nachrichten* 287, 1274 – 1287 (2014).
- B. Ichim and A. Zarojanu. “An algorithm for computing the multigraded Hilbert depth of a module”. *Exp. Math.* 23 (3), 322 – 331 (2014).
- B. Ichim, L. Katthän and J. J. Moyano-Fernández. “The behavior of Stanley depth under polarization”. Preprint <http://arxiv.org/abs/1401.4309>.
- B. Ichim, L. Katthän and J. J. Moyano-Fernández. “Stanley depth and the lcm-lattice”. Preprint <http://arxiv.org/abs/1405.3602>.
- B. Ichim and A. Zarojanu. “An introduction to Hilbert depth”. *Proceedings of ICMS–50 2014, Chisinau*, 86 – 89 (2014).
- B. Ichim, L. Katthän and J. J. Moyano-Fernández. “Lcm-lattices and Stanley depth: a first computational approach”. Preprint <http://arxiv.org/abs/1408.4255>.

## COMPUTER ALGEBRA:

- W. Bruns and B. Ichim. "Normaliz 2.0", a totally new C++ implementation of the program "Normaliz" (2008).
- W. Bruns and B. Ichim. "Normaliz 2.1", an update of "Normaliz 2.0", with the addition of new algorithms (2009).
- W. Bruns and B. Ichim. "Normaliz 2.2", an update of "Normaliz 2.1", containing mainly changes to the user interface (2009).
- W. Bruns, B. Ichim and Christof Söger. "Normaliz 2.5", a major upgrade of "Normaliz 2.2", with the addition of new algorithms, new interface and parallel processing (2010).
- V. Almendra and B. Ichim. "jNormaliz 1.0", a Java GUI for the program "Normaliz 2.5" (2010).
- W. Bruns, B. Ichim and Christof Söger. "Normaliz 2.7", a major upgrade of "Normaliz 2.5", unites the former norm64 and normbig in a single executable normaliz and h-vector computation are considerably improved (2011).
- V. Almendra and B. Ichim. "jNormaliz 1.1", a Java GUI for the program "Normaliz 2.7" (2011).
- W. Bruns, B. Ichim and Christof Söger. "Normaliz 2.8", a major upgrade of "Normaliz 2.7", adds arbitrary Z-gradings to Normaliz and improves the performance considerably (2012).
- V. Almendra and B. Ichim. "jNormaliz 1.2", a Java GUI for the program "Normaliz 2.8" (2012).
- W. Bruns, B. Ichim and Christof Söger. "Normaliz 2.9", an update of "Normaliz 2.8", improves volume computations and includes NmzIntegrate 1.0 (2013).
- V. Almendra and B. Ichim. "jNormaliz 1.4", a Java GUI for the program "Normaliz 2.9" (2013).
- W. Bruns, B. Ichim and Christof Söger. "Normaliz 2.10", an update of "Normaliz 2.9", adds corrections in the exchange of data between Normaliz and NmzIntegrate (2013).
- W. Bruns, B. Ichim, Tim Römer and Christof Söger. "Normaliz 2.11", an update of "Normaliz 2.10", adds input types for semiopen cones, inhomogeneous systems and polyhedra (2014).
- V. Almendra and B. Ichim. "jNormaliz 1.5", a Java GUI for the program "Normaliz 2.11" (2014).
- W. Bruns, B. Ichim, Tim Römer and Christof Söger. "Normaliz 2.12", an update of "Normaliz 2.11", adds internal parallelization of large simplicial cones and faster linear algebra (2014).
- V. Almendra and B. Ichim. "jNormaliz 1.6", a Java GUI for the program "Normaliz 2.12" (2014).
- B. Ichim and A. Zarojanu. "Hdepth 1.0", first implementation of an algorithm for computing the multigraded Hilbert depth of a module (2013).
- B. Ichim. "Sdepth 1.0". A program for computing sdepth. Work in progress.

## CONFERENCE TALKS:

- B. Ichim. "Koszul complexes in projective dimension one". Osnabrück University (Germany, 2004).
- B. Ichim and U. Vetter. "Generalized Koszul complexes". Workshop on Cohen-

- Macaulay Rings and Related Structures, Ovidius University (Romania, 2005).
- B. Ichim and B. Hovinen. “Free divisors from plane curves”. Minnowbrook Workshop on Commutative Algebra, Syracuse University (USA, 2005).
- B. Ichim. “On the coefficients of Hilbert quasipolynomials”. Luminy (France, 2006).
- B. Ichim. “Properties of toric face rings”. Genova University (Italy, 2006).
- B. Ichim. “On toric face rings”. Busteni (Romania, 2007).
- B. Ichim. “On Hilbert quasipolynomials”. Bucharest (Romania, 2008).
- B. Ichim. “How to compute the Hilbert polynomial?”. Luminy (France, 2008).
- B. Ichim. “Introduction to Normaliz 2.2”. Alba-Iulia (Romania, 2009).
- B. Ichim. “Computing the Hilbert polynomial with Normaliz”. Oradea (Romania, 2009).
- B. Ichim. “Introduction to jNormaliz”. Iasi (Romania, 2010).
- B. Ichim. “Introduction to Normaliz 2.5”. Kobe (Japan, 2010).
- B. Ichim. “Introduction to Normaliz 2.7”. Moscow (Russia, 2011).
- B. Ichim. “Introduction to Normaliz 2.7”. Brasov (Romania, 2011).
- B. Ichim. “Challenging computations of Hilbert quasipolynomials”. Rostock (Germany, 2012).
- B. Ichim. “Introduction to Normaliz 2.8”. Mangalia (Romania, 2012).
- B. Ichim. “How to compute the multigraded Hilbert depth of a module”. Osnabrück (Germany, 2012).
- B. Ichim. “How to compute the multigraded Hilbert depth of a module”. Valladolid (Spain, 2013).
- B. Ichim. “Introduction to Normaliz 2.9”. Segovia (Spain, 2013).
- B. Ichim. “An algorithm for computing the multigraded Hilbert depth of a module”. Osnabrück (Germany, 2013).
- B. Ichim and A. Zarojanu. “An introduction to Hilbert depth”. Chisinau (Moldova, 2014).
- B. Ichim. “Recent results in computational voting theory”. Castellon (Spain, 2014).

#### **LANGUAGES:**

Reading, writing and speaking competence in English, German and French.  
Reading competence in Italian, Spanish.

#### **SKILLS:**

Programming Languages: C, C++, JAVA, PASCAL, x86 ASM.