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Curriculum Vitae

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Education

1979–1987	Polytechnical school in Kölleda
1987–1991	Specialized school for mathematics and nat. sciences in Erfurt
06/1991	Degree: Abitur
08/1991–10/1992	Civil service
10/1992–09/1994	Study, major: mathematics, minor: computer sciences University of Leipzig
10/1994–06/1995	Study, major: mathematics, minor: computer sciences University of Sussex at Brighton (England)
07/1996–12/1997	Study, major: mathematics, minor: computer sciences University of Leipzig
12/1997	Degree “Diplom-Mathematiker”, University of Leipzig
09/2001	Degree “Dr. rer. nat.”, University of Duisburg
12/2006	Habilitation in mathematics, Degree “Dr. rer. nat. habil.” Otto-von-Guericke-University Magdeburg

Professional Experience

12/1997–08/ 1998	Research Assistent, University of Leipzig, Institute for mathematics and computer sciences,
09/1998–06/2001	Research Assistent, University of Duisburg, Institute for mathematics and computer sciences,
07/2001–06/2002	PostGraduate Researcher, University of California, Davis, Center for Image Processing and Industrial Computing (CIPIC),
07/2002–12/2003	Visiting Research Assistant Professor, University of California, Davis, Department of Mathematics
02/2004–	Research Assistent (C1), Otto-von-Guericke-Universität Magdeburg, Institute of Mathematical Optimization

Teaching experience

Herbst 2002	Short Calculus	Davis, CA, USA
Winter 2003	Linear Algebra	Davis, CA, USA
Frühling 2003	Linear Algebra	Davis, CA, USA
	Mathematical Programming	Davis, CA, USA
Herbst 2003	Integral Calculus	Davis, CA, USA
SS 2004	Computerorientierte Mathematik	Magdeburg
WS 2004/05	Lineare Optimierung	Magdeburg
SS 2005	Computerorientierte Mathematik	Magdeburg
WS 2005/06	Ganzzahlige Basen	Magdeburg
SS 2006	Computerorientierte Mathematik	Magdeburg
	Kurze rationale Erzeugendenfunktionen	Magdeburg
SS 2007	Computerorientierte Mathematik	Magdeburg
WS 2007/08	Gröbnerbasen	Magdeburg
SS 2008	Lineare Optimierung	Magdeburg

Research stays abroad

Research stays of up to two weeks since 1997: CORE, Louvain-la-Neuve (Belgium); RISC, University of Linz (Austria); University of Arizona, Tucson (USA); Yale University (USA); UC Davis (USA).

Research grants

2003	Faculty Research Grant, UC Davis “Algebraic and geometric techniques for the automatic computation of counting formulas” (with Jesus De Loera, UC Davis)
2007	GIF-Projekt (full application submitted) “Nonlinear Discrete Optimization” (with Shmuel Onn (Technion, Isreal Institute of Technology, Haifa, Israel) and Robert Weismantel (University Magdeburg))

Software development

- 4ti2 Software package for algebraic, geometric and combinatorial problems
in linear spaces
<http://www.4ti2.de>
(with Ralf Hemmecke, M. Köppe, P. Malkin and M. Walter)
- LattE Software package to efficiently enumerate lattice points in rational polyhedra and to
compute Hilbert series
<http://www.math.ucdavis.edu/~latte>
(with J. De Loera, D. Haws, P. Huggins, M. Köppe, J. Tauzer and
R. Yoshida)

Mentored work

Diploma theses

- 2007 Christian Bohs
Title: “Algorithmic aspects in the projection of lattice point sets
using rational generating functions”
- 2007 Silvia Lindner
Title: “Computation of Hilbert bases from outer and inner cones description
using 4ti2 and NORMALIZ”

“Jugend-forscht”-projects

- 2006 Matthias Walter
Title: “Solving systems of linear Diophantine Equations and inequalities”

Referee experience

Since 1999 I have been a referee for various international journals, including:

- Journal of Symbolic Computation
- Mathematical Programming
- SIAM Journal on Optimization

- Operations Research Letters
- Mathematical Research Letters
- Annals of Combinatorics
- Australasian Journal of Combinatorics
- Journal of Multivariate Analysis
- Ann. Inst. Statist. Math.

Selected invited talks and courses

- Okt. 2002 “Hilbert bases”
Fifth Biannual Bay Area Discrete Math Day, Berkeley
- Dez. 2004 “Test sets in integer programming: recent developments”
Workshop “Randomness, Geometry, and Counting”, Berlin
- Aug. 2005 “Effective computation of Gröbner bases and Markov bases of toric ideals”
Conference “Theoretical Effectivity and Practical Effectivity of Gröbner Bases”,
Tokyo
- Okt. 2006 “4ti2–Computation of Hilbert bases, Graver bases, toric Gröbner bases and more”
Workshop “Software for Algebraic Geometry”, IMA, Minneapolis
- Mai-Jun.
2007 Mini-Kurs “Representations of lattice point sets”

(Pre)Doc Course “Integer Points in Polyhedra”, Berlin

References

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