WOLFGANG WINDSTEIGER
DI DR

born:	december 31, 1967
nationality:	austrian
status:	married
current position:	associate professor at jku linz
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Education

october 1986 — **Diploma Study "Technical Mathematics" at JKU Linz**

branch *Data- and Informationprocessing*

- first diploma exam (1. Diplomprüfung) on February 7, 1989
- final exam (2. Diplomprüfung) on March 26, 1992 with excellent success
- diploma thesis: *Gröbner Bases: A Characterization by Syzygy Completeness and an Implementation* at RISC supervised by Prof. Bruno Buchberger

may 8, 1992 — **Graduation (Dipl.-Ing.)**

october 1992 — **PhD study at RISC supervised by Prof. Bruno Buchberger**

- PhD thesis: *A Set Theory Prover in Theorema: Implementation and Practical Applications* at RISC supervised by Prof. Bruno Buchberger
- Erwin Wenzl prize (category: university) for best PhD thesis in 2001

june 13, 2001 — **Final exam (Rigorosum) and Graduation (Dr.),** with excellent success

march 6, 2015 — **Habilitation in "Symbolic Computation" at JKU Linz**

Positions

january 1990 — **Project co-worker in the Gröbner Bases project**

- project directed by Bruno Buchberger at RISC

january 1993 — **Research assistant (Forschungsassistent) at RISC**
- numerical computation of Gröbner bases
- automated theorem proving (Theorema project)
- industrial projects

since oct 1993 — **External lecturer at the University of Applied Sciences Hagenberg**

- algorithmic mathematics

november 2000 — **Assistant professor (Universitätsassistent) at JKU**
- theorema project
- teaching for mathematics and computer science
- computer-supported teaching of mathematics (creaComp project)

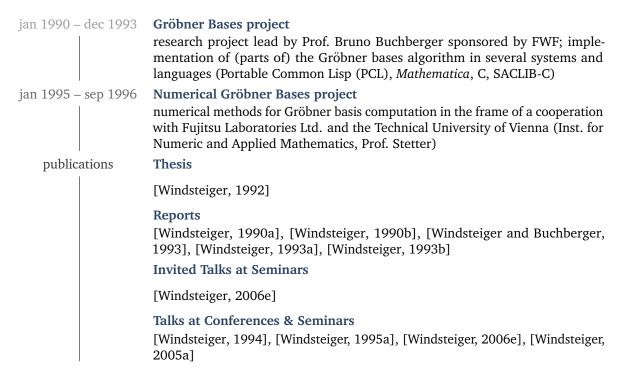**august 2014** — **Associate professor (Assoziierter Universitätsprofessor) at JKU**

- theorema project
- teaching for mathematics, computer science, business informatics, and business & economics
- computer-supported teaching of mathematics ("LOGTECHEDU" LIT project)
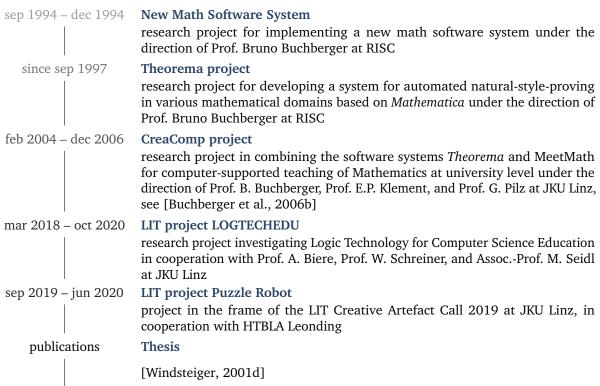
Project Experience

jan 1994 – aug 1994	**Actual**
	industrial project in automatization of window production (Actual)
aug 1999 – aug 2000	**IMMENSE**
	co-worker in a research project between the University of Linz an the Austrian Ministry for Education, Science, and Culture for developing electronic course-ware for *computer-supported teaching of mathematics for business & economics* at universities based on Mathematica; project directed by Prof. E.P Klement and Prof. G. Pilz at JKU Linz. Leader of technical team, responsible for over-all system design and software technological and didactical concept, major developer of user interface components
feb 2002 – jun 2002	**Salinen**
	industrial project in optimization of transport and scheduling of production (Salinen Austria)
feb 2004 – dec 2006	**CreaComp**
	research project in combining the software systems *Theorema* and MeetMath for *computer-supported teaching of Mathematics* at university level under the direction of Prof. B. Buchberger, Prof. E.P. Klement, and Prof. G. Pilz at JKU Linz
feb 2015 – oct 2018	**RTMO**
	project leader at RISC Software GmbH in project RTMO in production logistics (partners OMV, ÖBB RailCargo, FFG)

Research   Gröbner Bases

jan 1990 – dec 1993	**Gröbner Bases project**
	research project lead by Prof. Bruno Buchberger sponsored by FWF; implementation of (parts of) the Gröbner bases algorithm in several systems and languages (Portable Common Lisp (PCL), *Mathematica*, C, SACLIB-C)
jan 1995 – sep 1996	**Numerical Gröbner Bases project**
	numerical methods for Gröbner basis computation in the frame of a cooperation with Fujitsu Laboratories Ltd. and the Technical University of Vienna (Inst. for Numeric and Applied Mathematics, Prof. Stetter)
publications	**Thesis**
	[Windsteiger, 1992]
	Reports
	[Windsteiger, 1990a], [Windsteiger, 1990b], [Windsteiger and Buchberger, 1993], [Windsteiger, 1993a], [Windsteiger, 1993b]
	Invited Talks at Seminars
	[Windsteiger, 2006e]
	Talks at Conferences & Seminars
	[Windsteiger, 1994], [Windsteiger, 1995a], [Windsteiger, 2006e], [Windsteiger, 2005a]

sep 1994 – dec 1994	**New Math Software System**
	research project for implementing a new math software system under the direction of Prof. Bruno Buchberger at RISC
since sep 1997	**Theorema project**
	research project for developing a system for automated natural-style-proving in various mathematical domains based on *Mathematica* under the direction of Prof. Bruno Buchberger at RISC
feb 2004 – dec 2006	**CreaComp project**
	research project in combining the software systems *Theorema* and MeetMath for computer-supported teaching of Mathematics at university level under the direction of Prof. B. Buchberger, Prof. E.P. Klement, and Prof. G. Pilz at JKU Linz, see [Buchberger et al., 2006b]
mar 2018 – oct 2020	**LIT project LOGTECHEDU**
	research project investigating Logic Technology for Computer Science Education in cooperation with Prof. A. Biere, Prof. W. Schreiner, and Assoc.-Prof. M. Seidl at JKU Linz
sep 2019 – jun 2020	**LIT project Puzzle Robot**
	project in the frame of the LIT Creative Artefact Call 2019 at JKU Linz, in cooperation with HTBLA Leonding
publications	**Thesis**

[Windsteiger, 2001d]

Articles

[Windsteiger, 1999a], [Windsteiger, 2001f], [Windsteiger, 2001b], [Windsteiger, 2002d], [Windsteiger, 2002e], [Windsteiger, 2003e], [Buchberger et al., 2006a], [Windsteiger et al., 2006], [Windsteiger, 2006a], [Clarke et al., 2006], [Mayrhofer et al., 2007a], [Mayrhofer et al., 2007b], [Windsteiger, 2008a], [Jebelean et al., 2009], [Kerber et al., 2011], [Windsteiger, 2012b], [Kerber et al., 2013], [Lange et al., 2013], [Buchberger et al., 2016], [Maletzky and Windsteiger, 2017], [Windsteiger, 2017d], [Cerna et al., 2020a], [Cerna et al., 2020b], [Windsteiger, 2021b]

Technical Reports

[Windsteiger, 2001e], [Windsteiger, 2001a], [Windsteiger, 2021c]

Invited Talks at Conferences & Seminars

[Windsteiger, 2005b], [Windsteiger, 2005c], [Windsteiger, 2005d], [Windsteiger, 2006b], [Windsteiger, 2006c], [Windsteiger, 2009], [Windsteiger, 2013b], [Windsteiger, 2017c], [Windsteiger, 2021a]

Talks at Conferences & Seminars

[Windsteiger, 1995b], [Buchberger and Windsteiger, 1998], [Windsteiger, 1999b], [Windsteiger, 2001c], [Windsteiger, 2002a], [Windsteiger, 2002b], [Windsteiger, 2003b], [Windsteiger, 2002c], [Windsteiger, 2005e], [Windsteiger, 2003a], [Windsteiger, 2003c], [Windsteiger, 2005b], [Windsteiger, 2006d], [Windsteiger, 2006f], [Windsteiger, 2007a], [Windsteiger, 2007b], [Windsteiger, 2008b], [Windsteiger, 2010], [Kerber and Windsteiger, 2011], [Windsteiger, 2011], [Windsteiger, 2012a], [Windsteiger, 2012c], [Windsteiger, 2013a], [Windsteiger, 2015], [Windsteiger, 2016], [Windsteiger, 2017b], [Windsteiger, 2017a]

Research

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Algorithms

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2006 – 2012	**Algorithmic Methods project**
	book project *Algorithmische Methoden* in cooperation with Dr. Philipp Kügler (JKU Linz) in the new series *Mathematik kompakt* by Birkhäuser/Springer (Basel)
publications	**Books**
	[Kügler and Windsteiger, 2008], [Kügler and Windsteiger, 2012]

Research Visits

aug 1993 – sep 1993	**University of Pretoria, South Africa**
	visiting researcher at the *Dept. of Electronics and Electric Engineering*
april 2005	**Charles University, Prag, Czech Republic**
	visiting researcher at the *Dept. of Algebra (Prof. Jiri Tuma)*
jan 2006 – apr 2006	**Carnegie Mellon University, Pittsburgh, USA**
	visiting researcher in the Analytica project at the *Dept. of Computer Science (Prof. Edmund M. Clarke & Prof. Klaus Sutner)*
nov 2012	**University of Birmingham, England**
	visiting researcher at the *Dept. for Computer Science (Dr. Manfred Kerber)*
jun 2015	**Jacobs University Bremen, Germany**
	visiting researcher at the *Dept. for Computer Science (Prof. Michael Kohlhase)*

Research Organization

- co-editor of *Hagenberg Research*, see [Buchberger et al., 2009]
- general chair, program committee co-chair, and local chair for *Calculemus'2007*, see [Kauers et al., 2007a], [Kauers et al., 2007b]
- general chair and local chair for *MKM'2007*
- program chair *CICM'2013/Calculemus Track*
- general co-chair for *GeoGebra'2011*
- general co-chair for *GeoGebra'2009*
- general co-chair for *CADGME'2009*
- general co-chair for *ACA'2008*
- workshop chair for *CIAO'2010*
- workshop co-chair of the workshop *Mathematical Theory Exploration* in the frame of *The 4th International Congress on Mathematical Software* (ICMS'2014, a satellite event of the International Congress of Mathematics (ICM'2014), Seoul, Korea)
- workshop co-chair of the workshop *Software for Mathematical Reasoning and Applications* in the frame of *The 5th International Congress on Mathematical Software* (ICMS'2016, a satellite event of the European Congress of Mathematics (ECM'2016), Berlin, Germany)
- workshop co-chair of the workshop *Software for Mathematical Reasoning and Applications* in the frame of *The 6th International Congress on Mathematical Software* (ICMS'2018, Notre Dame, USA)

- workshop co-chair of the workshop *Computer-Supported Mathematical Theory Development* in the frame of IJCAR'2004, Cork, Ireland, see [Benzmüller and Windsteiger, 2004]

- local chair *CICM'2018*, Hagenberg, Austria

- local chair and publicity chair *LMCS'02*, Hagenberg, Austria

- co-organizer of mini-symposium *Proving in Mathematics Education at University and at School* (CSASC'2013), Koper, Slovenia

- co-organizer of the workshop *CAL* (Computer Algebra and Automated Theorem Proving) at EURO-CAL'2001, Gran Canaria, Spain

- member of the steering committee for CICM as Calculemus representative (since 2015)

- member of program committee for *CICM* (2012, 2015, 2018, 2019, 2021, 2022)

- member of program committee for *ICMS* (2018)

- member of program committee for *MathUI* (2015)

- member of program committee for *SETS* (2014, 2015, 2018)

- member of program committee for *PAS'2015*

- member of program committee for *AISC* (2004, 2008, 2010, 2014, 2018)

- member of program committee for *UITP* (2014, 2016, 2018)

- member of program committee for *SC2* (2017, 2018)

- member of program committee for *Theorem-Prover based Systems for Education (eduTPS)* (2012, 2016)

- member of program committee for *FroCoS'2011*

- member of program committee for *Calculemus* (2001–2003, 2007, 2008, 2010)

- member of program committee for *Automatheo'2010*

- member of program committee for *MIPS'2010*

- member of program committee for *CADGME'2009*

- member of program committee for *PLMMS'2007*

- member of program committee for *IJCAR'2004*

- member of program committee for *Electronic Journal of Mathematics & Technology (eJMT)*, Special Issue February 2013: Theorem-Prover based Systems for Education

- reviewer for Journal of Symbolic Computation (JSC)

- reviewer for Informatics'2019

- reviewer for ACA2017

- calculemus trustee (2000–2003, 2006–2009, 2012–2015)

- member of the organizing committee *FPSAC'2009*

Teaching Lectures

- *Algorithmic Methods 1* obligatory in the first semester for the study of Technical Mathematics at JKU Linz: since WS01

- *Logic for Computer Scientists* at JKU Linz: since WS13

- *Predicate Logic as a Working Language* obligatory in the second semester for the study of Technical Mathematics at JKU Linz: SS03–SS13, since SS16

- *Mathematik und Logik für Wirtschaftsinformatik* at JKU Linz: since WS14

- *Mathematik für Sozial- und Wirtschaftswissenschaften* at JKU Linz: since SS15

- *Formal Modelling*, JKU Linz, since SS19

- *Programming in Mathematica* at JKU Linz: SS96–SS15

- *Computer-based Working Environments* at the JKU Linz: WS08–WS12

- *Algebraic and Discrete Methods in Biology* at the JKU Linz: SS07–SS09

- *Logical and Formal Foundations of Computer Science* at the University of Applied Sciences Hagenberg (branch Software Engineering): since WS08

- *Mathematics 1 — Algebra* at the University of Applied Sciences Hagenberg (branch Software Engineering): since SS09

- *Formal Problem Solving* at the University of Applied Sciences Hagenberg (branch Mobile Computing): WS08

- *Präsentationstechnik* obligatory in the third semester for the study of Technical Mathematics at JKU Linz: WS03

- *Mathematics I* at the University of Applied Sciences Hagenberg (branch Computer-based Learning): WS05

- *Mathematics II* at the University of Applied Sciences Hagenberg (branch Computer-based Learning): SS06

- *Algorithmic Mathematics III* at the University of Applied Sciences Hagenberg (branch Software Engineering): WS94, WS95

- *Algorithmic Mathematics IV* at the University of Applied Sciences Hagenberg (branch Software Engineering): SS98, SS99

- *Algorithmic Mathematics VI* at the University of Applied Sciences Hagenberg (branch Software Engineering): SS96, SS97, SS98

- *Algorithmic Mathematics VIII* at the University of Applied Sciences Hagenberg (branch Software Engineering): SS98

- *Applied Mathematics* at the Ergänzungslehrgang in the University of Applied Sciences Hagenberg: WS95 – SS99

Teaching Exercises

- *Logic for Computer Scientists* at JKU Linz: since WS13

- *Mathematik und Logik für Wirtschaftsinformatik* at JKU Linz: WS14, since WS16

- *Diskrete Strukturen* at JKU Linz: WS13–WS15, since WS18

- *Algebra for Computer Scientists* at JKU Linz: SS14

- *Mathematische Grundlagen 1* at JKU Linz: WS07–WS12

- *Formale Grundlagen der Informatik I* at JKU Linz: WS99 and WS04–WS06

- *Mathematik I (Analysis)* at JKU Linz: SS00–SS01

- *Mathematik für Informatiker III* at JKU Linz: WS93–WS99

- *Logical and Formal Foundations of Computer Science* at the University of Applied Sciences Hagenberg (branch Software Engineering): since WS08

- *Mathematics 1 — Algebra* at the University of Applied Sciences Hagenberg (branch Software Engineering): since SS09

- *Algorithmic Mathematics I* at the University of Applied Sciences Hagenberg (branch Software Engineering): WS93–WS02

- *Algorithmic Mathematics II* at the University of Applied Sciences Hagenberg (branch Software Engineering): SS94 and SS00–SS03

- *Algorithmic Mathematics III* at the University of Applied Sciences Hagenberg (branch Software Engineering): WS94–WS95

- *Algorithmic Mathematics IV* at the University of Applied Sciences Hagenberg (branch Software Engineering): SS95, SS99

- *Algorithmic Mathematics V* at the University of Applied Sciences Hagenberg (branch Software Engineering): WS98

- *Algorithmic Mathematics VI* at the University of Applied Sciences Hagenberg (branch Software Engineering): SS96

Teaching   Seminars

- proseminar *Formal Modelling*, JKU Linz, since SS19

- seminar *Logic and Software Design (Theorema Seminar)*, JKU Linz, since SS15

- seminar *Logical Foundations and Computer-Supported Proving for Teacher Training Mathematics*, JKU Linz, SS15

- seminar in the frame of *Schwerpunktfach Mathematik*, Europagymnasium Auhof, December 15, 2005. [Windsteiger, 2005f]

- seminar *Scientific Writing & Presentation* at the University of Applied Sciences Hagenberg (branches Media-technology & -design, Hardware/Software Systems Engineering): SS05

- seminar *Die Sprache der Mathematik* at the BORG für Kommunikation, Hagenberg, mar 2, 2005

- course for mathematics teachers given in the frame of the *Tag der Mathematik 2001* at the University of Linz, nov 23, 2001, [Windsteiger, 2001a]

- project leader in *Projektwoche Angewandte Mathematik* for gifted high school students organized by Stiftung Talente in cooperation with the University of Linz: feb 14-18, 2004 & feb 13-17, 2005

- organizer and teacher of seminars for *Mathematica*: oct 1994 to dec 2008

Teaching

2010	**Laura Giuri (master)**
	Automated Contract Generation and Document Management in the Context of Economic Promotional Business.
2010	**Dietmar Kerbl (master)**
	An Automated Induction Prover for Finite Sets Implemented in the Theorema System.
2011	**Marek Sacha (master)**
	Structuring and Reusing Knowledge in the Theorema System.
2013	**Shereen El Bedewy (master)**
	Gesture-Based Browsing of Mathematics.
2016	**Sean Peng (master)**
	Generating Speech from Mathematical Expressions in the Frame of the Theorema System.
2017	**Csaba Ilonka (master)**
	Auction Design in the Frame of a User Portal for a Fiber Production Company.
suspended	**Johannes Nigl (master)**
	Tracing Computations in the Theorem System.
2018	**Nader Nesseam (master)**
	An Electronic Auction Platform for Fiber Products: The Customer Component.
2018	**Elsayed Abdelrahman (master)**
	An Electronic Auction Platform for Fiber Products: The Administration Component.
2018	**Manuel Schlenkrich (bachelor, joint supervision with RISC Software GmbH)**
	The Shifting-Bottleneck Algorithm for Solving Scheduling Problems.
2020	**Ingolf Neumüller (master)**
	Eine industrielle Anwendung von heuristischen Optimierungsverfahren für das Bin-Packing Problem.
2020	**Moritz Willnauer (bachelor)**
	Modelling and Solving a Scheduling Problem by Max-Flow.
2021	**Sebastian Schmalzer (bachelor, joint supervision with RISC Software GmbH)**
	The Inventory Routing Problem.
suspended	**Dominik Baumann (bachelor)**
	Shortest Paths in Graphs.

University Administration

- since oct 2019: member of the *senate* at JKU

- since oct 2019: speaker of the *mid-level scientific staff* in the senate at JKU

- dec 2016 – oct 2019: speaker of the *mid-level scientific staff in the department of mathematics* at JKU

- jun 2001 – jul 2005, since oct 2019: member of the *faculty for science and engineering (TNF)* at JKU

- member of the curriculum commission *Doctorate in Technical Sciences* at JKU

- member of the curriculum commission *Technical Mathematics* at JKU

- support at *SIM* (general study information exposition at JKU)

- support at *Traumberuf Technik* (information exposition for technical studies at JKU)

- support at *Lange Nacht der Forschung*

Miscellaneous

- apr 1991 – dec 2008: product manager and seminar leader for *Mathematica* and MAPLE (until dec 1993) in the company UNI SOFTWARE PLUS

- jun 1995 – jul 1999: director of the *Ergänzungslehrgang* in the University of Applied Sciences Hagenberg

- oct 1996 – aug 1997: civil service at Red Cross Upper Austria

- contributed article in the *Handbook of Computer Algebra*, see Windsteiger [2003d]

- design and implementation of the *RISC Activity Database* for maintaining records of publications and other scientific activities of RISC members[1]

- organization of *20 Years RISC* celebration jun 6, 2008[2]

- organization and moderation of the celebration of Bruno Buchberger's 70th birthday, feb 14, 2013

- moderation of the opening ceremony for the new RISC building, jun 26, 2013[3]

- organization of *30 Years RISC* celebration oct 5, 2017

Complete List of Publications & Scientific Talks

C. Benzmüller and W. Windsteiger, editors. *Computer-Supported Mathematical Theory Development*, University College Cork, Ireland, July 2004. ISBN 3-902276-04-5. URL `http://www.risc.uni-linz.ac.at/about/conferences/IJCAR-WS7/`. Workshop on Computer-Supported Mathematical Theory Development in the frame of IJCAR'04.

B. Buchberger and W. Windsteiger. The *Theorema* Language: Implementing Object- and Meta-Level Usage of Symbols. *Calculemus Workshop*, 1998.

B. Buchberger, A. Craciun, T. Jebelean, L. Kovacs, T. Kutsia, K. Nakagawa, F. Piroi, N. Popov, J. Robu, M. Rosenkranz, and W. Windsteiger. Theorema: Towards Computer-Aided Mathematical Theory Exploration. *Journal of Applied Logic*, 4(4):470–504, 2006a. doi: http://dx.doi.org/10.1016/j.jal.2005.10.006.

B. Buchberger, E. Klement, G. Pilz, S. Saminger, and W. Windsteiger. CreaComp: e-Schulung von Kreativität und Problemlösekompetenz. RISC Report Series 06-09, Research Institute for Symbolic Computation (RISC), Johannes Kepler University Linz, Schloss Hagenberg, 4232 Hagenberg, Austria, 2006b.

B. Buchberger, M. Affenzeller, A. Ferscha, M. Haller, T. Jebelean, E. Klement, P. Paule, G. Pomberger, W. Schreiner, R. Stubenrauch, R. Wagner, G. Weiß, and W. Windsteiger, editors. *Hagenberg Research*, 2009. Springer Dordrecht Heidelberg London New York. ISBN 978-3-642-02126-8. URL `http://www.springer.com/computer/swe/book/978-3-642-02126-8`.

B. Buchberger, T. Jebelean, T. Kutsia, A. Maletzky, and W. Windsteiger. Theorema 2.0: Computer-Assisted Natural-Style Mathematics. *JFR*, 9(1):149–185, 2016. URL `http://dx.doi.org/10.6092/issn.1972-5787/4568`.

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[1]`http://www.risc.jku.at/publications/`
[2]`http://www.risc.jku.at/conferences/20YRISC2008/`
[3]`http://www.risc.jku.at/about/extension/`

D. M. Cerna, M. Seidl, W. Schreiner, W. Windsteiger, and A. Biere. Aiding an Introduction to Formal Reasoning Within a First-Year Logic Course for CS Majors Using a Mobile Self-Study App. In ACM, editor, *ITICSE 2020*, pages 1–7, 2020a.

D. M. Cerna, M. Seidl, W. Schreiner, W. Windsteiger, and A. Biere. Computational Logic in the First Semester of Computer Science: An Experience Report. In Springer, editor, *CSEDU 2020*, pages 1–8, 2020b.

E. M. Clarke, A. S. Gavlovski, K. Sutner, and W. Windsteiger. Analytica V: Towards the Mordell-Weil Theorem. In A. Bigatti and S. Ranise, editors, *Proceedings of Calculemus'06*, pages 35–50, 2006.

T. Jebelean, B. Buchberger, T. Kutsia, N. Popov, W. Schreiner, and W. Windsteiger. Automated Reasoning. In B. Buchberger, M. Affenzeller, A. Ferscha, M. Haller, T. Jebelean, E. Klement, P. Paule, G. Pomberger, W. Schreiner, R. Stubenrauch, R. Wagner, G. Weiß, and W. Windsteiger, editors, *Hagenberg Research*, pages 63–101. Springer Dordrecht Heidelberg London New York, 2009. ISBN 978-3-642-02126-8. URL http://www.springer.com/computer/programming/book/978-3-642-02126-8.

M. Kauers, M. Kerber, R. Miner, and W. Windsteiger, editors. *Towards Mechanized Mathematical Assistants*, volume 4573 of *Lecture Notes in Computer Science*, Heidelberg, 2007a. Springer. ISBN 0302-9743 (ISSN). URL http://www.springeronline.com/978-3-540-73083-5. Proceedings of Calculemus 2007 and MKM 2007.

M. Kauers, M. Kerber, R. Miner, and W. Windsteiger. Calculemus/MKM 2007 – Work in Progress. RISC Report Series 07-06, Research Institute for Symbolic Computation (RISC), Johannes Kepler University of Linz, Schloss Hagenberg, 4232 Hagenberg, Austria, 2007b.

M. Kerber and W. Windsteiger. Using Theorema in the Formalization of Theoretical Economics, July 22 2011. Contributed talk at CICM 2011.

M. Kerber, C. Rowat, and W. Windsteiger. Using Theorema in the Formalization of Theoretical Economics. In J. H. Davenport, W. M. Farmer, F. Rabe, and J. Urban, editors, *Intelligent Computer Mathematics*, volume 6824 of *Lecture Notes in Artificial Intelligence (LNAI)*, pages 58–73. Springer, 2011. ISBN 0302-9743 (ISSN). URL http://dx.doi.org/10.1007/978-3-642-22673-1_5.

M. Kerber, C. Lange, C. Rowat, and W. Windsteiger. Developing an Auction Theory Toolbox. In M. Kerber, C. Lange, and C. Rowat, editors, *AISB 2013*, pages 1–4, 2013. URL http://www.cs.bham.ac.uk/research/projects/formare/events/aisb2013/proceedings.php.

P. Kügler and W. Windsteiger. *Algorithmische Methoden – Zahlen, Vektoren, Polynome*. Reihe: Mathematik kompakt. Birkhäuser Basel Boston Berlin, 1st edition, December 2008. ISBN 978-3-7643-8434-0. URL http://www.risc.uni-linz.ac.at/publications/books/AlgorithmischeMethoden/.

P. Kügler and W. Windsteiger. *Algorithmische Methoden – Funktionen, Matrizen, Multivariate Polynome*. Reihe: Mathematik kompakt. Birkhäuser Basel Boston Berlin, 1st edition, May 2012. ISBN 978-3-7643-8515-6. URL http://www.risc.jku.at/publications/books/AlgorithmischeMethoden/.

C. Lange, M. B. Caminati, M. Kerber, T. Mossakowski, C. Rowat, M. Wenzel, and W. Windsteiger. A Qualitative Comparison of the Suitability of Four Theorem Provers for Basic Auction Theory. In J. Carette, editor, *Conference on Intelligent Computer Mathematics (CICM 2013)*, volume 7961 of *Lecture Notes in Artificial Intelligence (LNAI)*, pages 200–215. Springer, 2013. ISBN 978-3-642-39319-8.

A. Maletzky and W. Windsteiger. The Formalization of Vickrey Auctions: A Comparison of Two Approaches in Isabelle and Theorema. In H. Geuvers, M. England, O. Hasan, F. Rabe, and O. Teschke, editors, *Intelligent Computer Mathematics: 10th International Conference, CICM 2017, Edinburgh, UK, July 17-21*, volume 10383 of *Lecture Notes in Computer Science*, pages 25–39. Springer, 2017. URL https://link.springer.com/chapter/10.1007/978-3-319-62075-6_3. doi 10.1007/978-3-319-62075-6_3.

G. Mayrhofer, S. Saminger, and W. Windsteiger. CreaComp: Computer-Supported Experiments and Automated Proving in Learning and Teaching Mathematics. In E. Milkova, editor, *Proceedings of ICTMT8*, 2007a. ISBN 978-80-7041-285-5. 5 pages, distributed on CD.

G. Mayrhofer, S. Saminger, and W. Windsteiger. CreaComp: Experimental Formal Mathematics for the Classroom. In S. Li, D. Wang, and J.-Z. Zhang, editors, *Symbolic Computation and Education*, pages 94–114, Singapore, New Jersey, 2007b. World Scientific Publishing Co. ISBN 978-981-277-599-3. URL http://www.worldscibooks.com/socialsci/6642.html.

W. Windsteiger. An Implementation of Rational Functions in PCL. Technical Report RISC-Linz Series 90-56, Univ. Linz, RISC, Linz, Austria, 1990a.

W. Windsteiger. An Approach to Object-Oriented Programming in C. Technical Report RISC-Linz Series 90-57, Univ. Linz, RISC, Linz, Austria, 1990b.

W. Windsteiger. Gröbner Bases: A Characterization by Syzygy Completeness and an Implementation. Master's thesis, RISC-Linz, University of Linz, Austria, 1992.

W. Windsteiger. GRÖBNER-IO: An Input/Output Libray for GRÖBNER. Technical Report in preparation, RISC-Linz, University of Linz, 1993a.

W. Windsteiger. Using GRÖBNER as a "Black Box". Technical Report 71, RISC-Linz, University of Linz, 1993b.

W. Windsteiger. GRÖBNER: A Library for Computing Gröbner Bases based on SACLIB. Talk given at the conference "Gröbner and Related Topics" in Dagstuhl, Germany, January 10-14 1994. URL http://www.risc.uni-linz.ac.at/people/wwindste/publications.html.

W. Windsteiger. Eine Einführung zur Methode der Gröbner Basen, September 26 1995a. Contributed talk at Treffen der ÖMG, Leoben, Austria.

W. Windsteiger. Mathematisches Problemlösen im Netz, July 5 1995b. Contributed talk at Telemedia'95, Hagenberg, Austria.

W. Windsteiger. Building Up Hierarchical Mathematical Domains Using Functors in THEOREMA. In A. Armando and T. Jebelean, editors, *Electronic Notes in Theoretical Computer Science*, volume 23-3, pages 83–102. Elsevier, 1999a. Calculemus 99 Workshop, Trento, Italy.

W. Windsteiger. THEOREMA: Overview on Using the System and Details on Composing Hierarchical Knowledge Bases. *School on Logic and Computation*, 1999b.

W. Windsteiger. Theorema: Ein Rahmen fuer Mathematik, Algorithmik und Didaktik. RISC Report Series 01-22, Research Institute for Symbolic Computation (RISC), Johannes Kepler University Linz, Schloss Hagenberg, 4232 Hagenberg, Austria, November 2001a. Course for mathematics teachers given in the frame of the "Tag der Mathematik 2001" at the University of Linz, November 23, 2001. In German.

W. Windsteiger. On a Solution of the Mutilated Checkerboard Problem using the Theorema Set Theory Prover. In S. Linton and R. Sebastiani, editors, *Proceedings of the Calculemus 2001 Symposium*, pages 28–47, 2001b.

W. Windsteiger. On a Solution of the Mutilated Checkerboard Problem using the Theorema Set Theory Prover, June 21 2001c. Contributed talk at Calculemus'2001, Siena, Italy.

W. Windsteiger. *A Set Theory Prover in Theorema: Implementation and Practical Applications*. PhD thesis, RISC Institute, May 2001d.

W. Windsteiger. A Set Theory Prover in *Theorema*. Technical Report 7, RISC, February 2001e. Talk given at the CAL'01 workshop, Las Palmas, Gran Canaria, February 20, 2001. Also available as SFB report 01-23.

W. Windsteiger. A Set Theory Prover in *Theorema*. In R. Moreno-Diaz, B. Buchberger, and J. Freire, editors, *Computer Aided Systems Theory*, number 2178 in LNCS, pages 525–539. Springer, 2001f. Proceedings of EUROCAST 2001 (8th International Conference on Computer Aided Systems Theory – Formal Methods and Tools for Computer Science), ISBN 3-540-42959.

W. Windsteiger. An Automated Prover for Set Theory in Theorema, June 5 2002a. Contributed talk at Calculemus'2002, Marseille, France.

W. Windsteiger. An Automated Prover for Zermelo-Fraenkel Set Theory in Theorema, October 20 2002b. Contributed talk at LMCS'02, Hagenberg, Austria.

W. Windsteiger. The Theorema System, September 27 2002c. Contributed talk at Calculemus Autumn School, Pisa, Italy.

W. Windsteiger. An Automated Prover for Set Theory in Theorema. In O. Caprotti and V. Sorge, editors, *Calculemus 2002, 10th Symposium on the Integration of Symbolic Computation and Mechanized Reasoning: Work in Progress Papers*, pages 56–67, Marseille, France, June 2002d. ISBN 1427-4447 (ISSN). Seki-Report Series Nr. SR-02-04, Universität des Saarlandes.

W. Windsteiger. An Automated Prover for Zermelo-Fraenkel Set Theory in Theorema. In K. Nakagawa, editor, *Logic, Mathematics and Computer Science: Interactions (LMCS 2002)*, pages 266–280, RISC, Schloss Hagenberg, Austria, October 2002e. ISBN 3-902276-03-7. Symposium in Honor of Bruno Buchberger's 60th Birthday, RISC-report Series Nr. 02-60.

W. Windsteiger. Formalizing Mathematics / Computer-supported Mathematics, April 25 2003a. Contributed talk at SFB Statusseminar, Strobl, Austria.

W. Windsteiger. Exploring an Algorithm for Polynomial Interpolation in the Theorema System, September 12 2003b. Contributed talk at Calculemus'2003, Rome, Italy.

W. Windsteiger. An Automated Prover for Set Theory in Theorema, May 26 2003c. Contributed talk at Omega-Theorema Workshop, Hagenberg, Austria.

W. Windsteiger. Mathematica. In J. Grabmeier, E. Kaltofen, and V. Weispfenning, editors, *Computer Algebra Handbook: Foundations, Applications, Systems*, pages 314–320. Springer, 2003d. ISBN 3-540-65466-6.

W. Windsteiger. Exploring an Algorithm for Polynomial Interpolation in the Theorema System. In T. Hardin and R. Rioboo, editors, *Proceedings of the Calculemus 2003 Symposium*, pages 130–136, Rome Italy, September 2003e. Aracne Editrice S.R.L. ISBN 88-7999-545-6.

W. Windsteiger. Symbolic Solution Techniques for the Elastoplasticity Problem, March 31 2005a. Contributed talk at SFB Statusseminar 2005.

W. Windsteiger. CreaComp: Neue Möglichkeiten im e-learning für Mathematik, 22. April 2005b. Invited colloquium talk at Research Net Upper Austria: Brennpunkt Forschung.

W. Windsteiger. Theorema: A System for Mathematical Theory Exploration, April 26 2005c. Invited colloquium talk at Institute for Algebra, Charles University Prague.

W. Windsteiger. An Automated Theorem Prover for Set Theory within the Theorema System, April 25 2005d. Invited colloquium talk at Institute for Algebra, Charles University Prague.

W. Windsteiger. The CreaComp Project: Theorema for Computer-supported Teaching and Learning of Mathematics, November 14 2005e. URL `http://www.ags.uni-sb.de/~omega/workshops/TheoremaOmega05/`. Contributed talk at Theorema-Ultra-Omega'05 Workshop.

W. Windsteiger. Wie erfinde ich mathematische Algorithmen? Wie beweise ich mathematische Algorithmen? RISC Report Series 05-18, Research Institute for Symbolic Computation (RISC), Johannes Kepler University of Linz, Schloss Hagenberg, 4232 Hagenberg, Austria, December 2005f. Presentation slides for a presentation given at Schwerpunktfach Mathematik, Europagymnasium Auhof, December 15, 2005.

W. Windsteiger. An Automated Prover for Zermelo-Fraenkel Set Theory in Theorema. *JSC*, 41(3-4): 435–470, 2006a. URL `http://authors.elsevier.com/sd/article/S0747717105001495`.

W. Windsteiger. The Theorema System, February 20 2006b. Invited colloquium talk at Carnegie Mellon University, Computer Science seminar.

W. Windsteiger. Computer-supported Proving in ZF Set Theory with the Theorema System, March 2 2006c. Invited colloquium talk at Carnegie Mellon University, Math Logic seminar.

W. Windsteiger. Introduction to Theorema: An Example of a Formal Math System, March 6 2006d. Contributed talk at Special Semester on Gröbner Bases: Workshop on Formal Gröbner Bases Theory. RICAM, Linz.

W. Windsteiger. Introduction to the Gröbner Bases Method, April 28 2006e. Talk given in the frame of the seminar "Fast SAT Solvers and Practical Decision Procedures". Invited colloquium talk at Carnegie Mellon University, Computer Science Deptartment.

W. Windsteiger. Analytica V: Towards the Mordell-Weil Theorem, July 9 2006f. Contributed talk at Calculemus'06.

W. Windsteiger. Towards Computer-Supported Proving in Maths Education, June 21 2007a. URL `http://matserv.pmmf.hu/cadgme/`. Contributed talk at First Central- and Eastern European Conference on Computer Algebra- and Dynamic Geometry Systems in Mathematics Education (CADGME'07).

W. Windsteiger. CreaComp: Computer-Supported Experiments and Automated Proving in Learning and Teaching Mathematics, July 3 2007b. URL `http://www.ictmt8.org/ictmt8/`. Contributed talk at 8th International Conference on Technology in Mathematics Teaching (ICTMT8).

W. Windsteiger. Stimulating Students' Creativity Through Computer-Supported Experiments and Automated Theorem Proving. In E. Velikova and A. Andzans, editors, *Promoting Creativity for all Students in Mathematics Education*, pages 351–357, 2008a. ISBN 978-954-712-420-2. Proceedings of Discussion Group 9, the 11th International Congress on Mathematical Education (ICME 11), Monterrey, Mexico, July 7–13.

W. Windsteiger. Theorema: Automated Theorem Proving Meets Teaching of Mathematics, July 9 2008b. Contributed talk at International Congress on Mathematical Education, ICME 11, JEM Workshop.

W. Windsteiger. Theorema: A System for Computer-Supported Theorem Proving and Theory Development based on Mathematica, November 14 2009. URL `http://www.wolfram.com/services/seminars/mideastconf2009/`. Invited talk at Middle East Mathematica Conference 2009.

W. Windsteiger. Theorema 2: Some Design Considerations for the Re-Implementation of the Theorema System, August 5 2010. URL `http://www.risc.jku.at/about/conferences/ciao2010/`. Contributed talk at CIAO 2010 Workshop.

W. Windsteiger. Using Theorema in the Formalization of Theoretical Economics, April 5 2011. Contributed talk at CIAO 2011.

W. Windsteiger. Theorema 2.0: Current Status of the Implementation, April 18 2012a. URL `http://www.chalmers.se/cse/EN/organization/divisions/software-technology/ciao-workshop`. Contributed talk at CIAO 2012.

W. Windsteiger. Theorema 2.0: A Graphical User Interface for a Mathematical Assistant System. In J. Davenport, J. Jeuring, C. Lange, and P. Libbrecht, editors, *24th OpenMath Workshop, 7th Workshop on Mathematical User Interfaces (MathUI), and Intelligent Computer Mathematics Work in Progress*, number 921 in CEUR Workshop Proceedings, pages 73–81, Aachen, 2012b. ISBN 1613-0073 (ISSN). URL `http://ceur-ws.org/Vol-921/`.

W. Windsteiger. Theorema 2.0: A Graphical User Interface for a Mathematical Assistant System, July 11 2012c. URL `http://www.informatik.uni-bremen.de/uitp12/`. Contributed talk at UITP 2012.

W. Windsteiger. Theorema 2.0: Automated and Interactive Theorem Proving in Math Education, June 10 2013a. Contributed talk at CSASC'2013, Koper, Slovenia.

W. Windsteiger. Theorema 2.0: An Open-Source Mathematical Assistant System for Automated and Interactive Reasoning, October 24 2013b. URL `http://pas2013.cc4cm.org/`. Invited talk at PAS'2013: Second International Seminar on Program Verification, Automated Debugging and Symbolic Computation.

W. Windsteiger. Theorema 2.0 Towards Computer-Supported "Natural-Style Mathematics", December 15 2015. Contributed talk at Workshop on Algebra, Geometry and Proofs in Symbolic Computation at Fields Institute, Toronto, Canada.

W. Windsteiger. Theorema 2.0: A Tool for Formalizing Mathematics, January 7 2016. URL `http://jointmathematicsmeetings.org/jmm`. Contributed talk at Joint Mathematical Meeting of the AMS: Mathematical Information in the Digital Age of Science.

W. Windsteiger. The Formalization of Vickrey Auctions: A Comparison of Two Approaches in Isabelle and Theorema, July 18 2017a. URL `http://cicm-conference.org/2017/cicm.php`. Contributed talk at Conference for Intelligent Computer Mathematics (CICM).

W. Windsteiger. Representation and Management of Mathematics in Theorema 2.0, September 12 2017b. URL `http://oemg-dmv-2017.sbg.ac.at/`. Contributed talk at Minisymposium From Information to Knowledge Management, ÖMG Congress and DMV Annual Meeting.

W. Windsteiger. Theorema 2.0: A Brief Tutorial, September 23 2017c. URL `https://synasc.ro/2017/`. Invited Tutorial. Invited talk at SYNASC 2017.

W. Windsteiger. Theorema 2.0: A Brief Tutorial. In T. Jebelean and D. Zaharie, editors, *Proceedings of SYNASC 2017*, IEEE Explore, pages 1–3, 2017d.

W. Windsteiger. Automated Theorem Proving in the Classroom, September 2021a. Invited talk at 13th International Conference on Automated Deduction in Geometry (ADG).

W. Windsteiger. Automated Theorem Proving in the Classroom. In P. Janicic, editor, *Proceedings Automated Deduction in Geometry (ADG 2021)*, volume 352 of *Electronic Proceedings in Theoretical Computer Science (EPTCS)*, pages 54–63, 2021b. URL `http://dx.doi.org/10.4204/EPTCS.352.6`. Extended abstract.

W. Windsteiger. Automated Theorem Proving in the Classroom. RISC Report Series 21-15, Research Institute for Symbolic Computation (RISC), Johannes Kepler University Linz, Altenberger Straße 69, 4040 Linz, Austria, August 2021c. Extended version of keynote talk at ADG 2021 conference.

W. Windsteiger and B. Buchberger. GRÖBNER: A Library for Computing Gröbner Bases based on SACLIB. Technical Report 72, RISC-Linz, University of Linz, 1993.

W. Windsteiger, B. Buchberger, and M. Rosenkranz. Theorema. In F. Wiedijk, editor, *The Seventeen Provers of the World*, volume 3600 of *Lecture Notes in Artificial Intelligence (LNAI)*, pages 96–107. Springer Berlin Heidelberg New York, 2006. ISBN 3-540-30704-4. URL `http://link.springer.com/book/10.1007/11542384`.