Curriculum Vitae

Personal Data

Full name	Yi Zhang
Date of birth	12.12.1988
Place of birth	Changzhou, Jiangsu Province, China
Nationality	Chinese
Marital Status	Single

Contact

E-mail	yi.zhang@ricam.oeaw.ac.at
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Research Interests

Computer Algebra, Computational Algebraic Geometry, Ore Algebras, Gröbner Bases, Algorithmic Combinatorics and Experimental Mathematics

Education

09/2013 – 02/2017	Ph.D. in Mathematics with distinction, Institute for Algebra, Johannes Kepler University Linz, Austria. (Co-supervisors: Prof. Manuel Kauers and Prof. Ziming Li)
09/2011 – 07/2016	Ph.D. in Applied Mathematics, Key Laboratory of Mathematics Mechanization, Academy of Mathematics and Systems Science, University of Academy of Sciences, Beijing, China. (Co-supervisors: Prof. Manuel Kauers and Prof. Ziming Li)
09/2007 – 07/2011	B.Sc. in Mathematics, School of Mathematical Sciences, Soochow University, Suzhou, China.

I also studied as a Ph.D. student in Research Institute for Symbolic Computation, Johannes Kepler University Linz from 09/2013 to 06/2015 under the supervision of Prof. Manuel Kauers.

Work Experience

03/2017 – 02/2018 Postdoc researcher, Johann Radon Institute for Computational and Applied Mathematics (RICAM), Austrian Acedemy of Sciences. (Supervisor: Dr. Christoph Koutschan)

Visiting Experience

May 2017 Visiting scholar, Department of Mathematics , Kobe University, Japan. (Host researcher: Prof. Nobuki Takayama)

Awards

07/2016 ACM Distinguished Student Author Award at ISSAC'16, SIGSAM, Association for Computing Machinery.

09/2009 – 07/2010 The Second Prize Scholarship of Soochow University, Suzhou, China.

09/2008 – 07/2009 The First Prize Scholarship of Soochow University, Suzhou, China.

09/2007 – 07/2008 The First Prize Scholarship of Soochow University, Suzhou, China.

09/2007 – 07/2008 The Zhu Jingwen Scholarship of Soochow University, Suzhou, China.

09/2007 – 07/2008 The Merit Student of Soochow Universtiy, Suzhou, China.

PhD Thesis

- Yi Zhang. *Univarite Contraction and Multivariate Desingularization of Ore Ideals*. PhD thesis, Institute for Algebra, Johannes Kepler University Linz, 2017.

Publications

- Yi Zhang. *Contraction of Ore Ideals with Applications*. In *Proceedings of the 2016 International Symposium on Symbolic and Algebraic Computation*, pp. 413-420, ACM Press, 2016. DOI:10.1145/2930889.2930890. (ACM Distinguished Student Author Awards)

- Manuel Kauers, Ziming Li and Yi Zhang. *Apparent Singularities of D-finite Systems*, 2017. arXiv:705.00838, submitted to Journal of Symbolic Computation.

- Thieu Vo Ngoc and Yi Zhang. *Laurent Series Solutions of Algebraic Ordinary Differential Equations*, 2017.
- Yi Zhang. *Desingularization in the q-Weyl Algebra*, 2017. (in preparation)
- Lin Jiu, Christoph Koutschan, Satoshi Kuriki, Nobuki Takayama, Akimichi Takemura, Yi Zhang. *Euler Characteristic Method for the Largest Eigenvalue of a Random Matrix*, 2017. (work in progress)

Research Notes

- Yi Zhang. *Testing q-shift Equivalence of Polynomials*, July, 2017.
- Yi Zhang. *Integer Vectors of a Fundamental Parallelepiped*, 2016.
- Ziming Li and Yi Zhang. *A Note on Gröbner Bases of Ore Polynomials over a PID*, 2016. https://yzhang1616.github.io/GB.pdf

Software

- qDesingularization.m, a Mathematica package for computing desingularized operators and the q-Weyl closure of a given q-difference operator in the first q-Weyl algebra. It is based on joint work with Dr. Christoph Koutschan. The package requires the availability of Koutschan's package HolonomicFunctions.m and Kauer's pacakge Singular.m. For a description of the usage of the package, see the Example.nb notebook.
- KamkeODEs.mw, A Maple worksheet for checking the maximal comparability and noncriticality of algebraic ordinary differential equations in Kample's collection. It is based on joint work with Dr. Thieu Vo Ngoc. The worksheet requires the availability of the Maple package KamkeODEs.mpl.

Talks

6. *Apparent Singularities of D-finite Systems.* Contributed talk at ACA'17 (the 23rd Conference on Applications of Computer Algebra), Jerusalem College of Technology, Jerusalem, Israel, July, 2017.
5. *Contraction of Linear Difference and Differential Operators.* Contributed talk at ISSAC'16 (the 41st International Symposium on Symbolic and Algebraic Computation), Wilfrid Laurier University, Waterloo, Canada, July, 2016.
4. *Contraction of Linear Difference and Differential Operators.* Invited talk at the seminar of Center for Combinatorics, Nankai University, Tianjin, China, June, 2016.
3. *An Algorithm for Contraction of an Ore Ideal.* Invited talk at the seminar of Institute of Discrete Mathematics and Geometry, Vienna University of Technology, Vienna, Austria, October, 2015.

2. *The Restriction Problem for D-finite Functions.* Contributed talk at the Workshop on Computational and Algebraic Methods in Statistics, The University of Tokyo, Tokyo, Japan, March, 2015.

1. *An Algorithm for Decomposing Multivariate Hypergeometric Terms.* Contributed talk at CM'13 (the 5th National Conference of Computer Mathematics), Jilin University, Changchun, China, August, 2013.

Peer-Reviewing Activities

For each journal and conference the number of completed reviews in given in parentheses.

- International Symposiums on Symbolic and Algebraic Computation (1)
- Journal of Symbolic Computation (2)

Further Skills

- Programming Language: C, Matlab, Maple, Mathematica, Macaulay2 and Sage
- Spoken Language: Chinese (native), English (fluent), German (basic)