

# Curriculum vitae of Mario Ullrich

Institute of Analysis  
Johannes Kepler University Linz  
Altenberger Str. 69  
4040 Linz, Austria

Tel.: (+43) 732 2468 4014  
E-mail: mario.ullrich@jku.at

## Personal data

Name Dr. Mario Ullrich  
Born March 3, 1987 in Mühlhausen, Germany  
Citizenship German

## Education

12/12 Ph.D. in Mathematics (Dr. rer. nat.),  
Friedrich Schiller University Jena, Germany.  
Thesis: “Rapid mixing of Swendsen-Wang dynamics in two dimensions”  
(*summa cum laude*)  
Advisor: Erich Novak  
Supported by: DFG Research Training Group (1523/1)  
“Quantum and Gravitational Fields”

07/09 Dipl.-Math. in Mathematics,  
Friedrich Schiller University Jena, Germany.  
Thesis: “Explicit error bounds and comparison of Importance  
sampling and the Metropolis algorithm” (in German)

07/05 Abitur,  
Seiler-Gymnasium in Schlotheim, Germany.

## Professional experience

03/19– Assistant Professor (Universitätsassistent) at JKU Linz, Austria  
(permanent position)

- 10/18–03/19 Interim Professor (Vertretungsprofessor-W3) for “Theoretical Numerics” at Friedrich Schiller University Jena, Germany
- 03/15–09/18 Assistant Professor (Universitätsassistent) at JKU Linz, Austria
- 01/13–02/15 Post-Doc (wiss. Mitarbeiter) at FSU Jena, Germany
- 09/12–12/12 Postdoctoral fellowship at Università Roma Tre, Rome.  
Supported by: ERC Advanced Grant 228032  
“Phase transitions in random evolutions  
of large-scale structures” (PTRELSS)
- 09/09–08/12 Ph.D. student at Friedrich Schiller University Jena, Germany.  
Supported by: DFG Research Training Group 1523/1  
“Quantum and Gravitational Fields”
- 10/07–06/09 Undergraduate teaching assistant in probability theory  
Friedrich Schiller University Jena, Germany.

## Awards and honors

- 2020 Plenary speaker at *International Conference on “Function Spaces and Applications” (FSA-2020)*, Apolda/Thür., Germany, September 2020
- 2020 Plenary speaker at “*14th International Conference in Monte Carlo & Quasi-Monte Carlo Methods in Scientific Computing (MCQMC 2020)*” at Oxford University, UK, August 2020
- 2019 *Journal of Complexity Best Paper Award*  
for the article “The curse of dimensionality for numerical integration on general domains” (*J. Complexity* 50 (2019), 25–42)
- 2017 Invited speaker at *LMS Durham Research Symposium “Markov Processes, Mixing Times and Cutoff”* at the Durham University, UK, July 2017
- 2017 Semi-plenary speaker at the *Information-based Complexity workshop* at the FoCM 2017 conference, Barcelona, July 17–19, 2017
- 2016 Invited speaker at “*Approximate Counting, Markov Chains and Phase Transitions*” workshop at the Simons Institute for the Theory of Computing, Berkeley, February 22–26, 2016
- 2015 *Joseph F. Traub Information-Based Complexity Young Researcher Award*
- 2013 *Promotionspreis des Dekans* of the Friedrich Schiller University

## Teaching activities

### Special courses:

- WS 19/20 *Approximation theory and Machine learning* (JKU, Linz, seminar)  
SS 19 *High-dimensional numerical approximation* (JKU Linz, MSc seminar)  
WS 18/19 *Modern applications of harmonic analysis* (FSU Jena, seminar)  
WS 18/19 *Complexity theory for continuous problems* (FSU Jena, lecture)  
SS 18 *Information-based complexity* (JKU Linz, lecture)  
WS 17/18 *High-dimensional numerical integration* (JKU Linz, lecture)  
WS 17/18 *Discrepancy and numerical integration* (JKU Linz, seminar)  
SS 17 *Modern applications of harmonic analysis* (JKU Linz, seminar)  
WS 16/17 *Levin's discrepancy bound for lattices* (JKU Linz, research seminar)  
SS 16 *Modern methods in Approximation theory* (JKU Linz, lecture)  
SS 16 *Optimal algorithms for numerical integration* (JKU Linz, seminar)

### Basic courses:

- WS 19/20 *Mathematics for Artificial Intelligence 1* (JKU Linz, lecture):
- designed for distance learning (live streaming, recording, online service)
  - implemented with L. Del Chicca (Linz School of education)
- SS 19 *Mathematics for Biological Chemists 2* (JKU Linz, lecture)  
WS 18/19 *Harmonic analysis* (FSU Jena, lecture)  
SS 18 *Analysis 2* (JKU Linz, lecture)  
WS 17/18 *Analysis 1* (JKU Linz, lecture)  
SS 17 *Classical harmonic analysis* (JKU Linz, lecture)  
WS 16/17 *Complex analysis* (JKU Linz, lecture & exercise)  
SS 16 *Analysis 2* (JKU Linz, exercise)  
WS 15/16 *Analysis 1* (JKU Linz, exercise)  
WS 14/15 *Numerical analysis* (FSU Jena, exercise)  
SS 14 *Analysis 1 for physicists* (FSU Jena, exercise)  
SS 14 *Analysis 1 for teacher* (FSU Jena, exercise)

- SS 13      *Basics in math. analysis for computer science* (FSU Jena, exercise)  
 WS 12/13   *Mathematics for Chemistry* (FSU Jena, exercise)  
 SS 11      *Analysis 2 for physicists* (FSU Jena, exercise)  
 SS 11      *Monte Carlo methods* (FSU Jena, seminar, advisor: E. Novak)  
 SS 09      *Mathematical statistics* (FSU Jena, tutorial)  
 WS 08/09   *Probability theory for Computer Science* (FSU Jena, exercise)  
 WS 07/08   *Elementary probability theory and statistics* (FSU Jena, tutorial)

## Full Publication List

### Online archives:

- MathSciNet: [www.ams.org/mathscinet/search/author.html?mrauthid=1023200](http://www.ams.org/mathscinet/search/author.html?mrauthid=1023200)
- ArXiv:        [www.arxiv.org/find/math/1/au:+Ullrich\\_M/0/1/0/all/0/1](http://www.arxiv.org/find/math/1/au:+Ullrich_M/0/1/0/all/0/1)

### Theses:

2. *Rapid mixing of Swendsen-Wang dynamics in two dimensions*,  
Dissertation, 2012, Jena (cf. the paper [9])
1. *Explicit error bounds and comparison of Importance sampling and the Metropolis algorithm* (in German), Diploma thesis, 2009, Jena

### Submitted manuscripts:

6. On the fixed volume discrepancy of the Fibonacci sets in the integral norms (with V.N. Temlyakov). Submitted, arXiv:1908.04658.
5. Function values are enough for  $L_2$ -approximation (with D. Krieg). Submitted, arXiv:1905.02516
4. On the power of random information (with A. Hinrichs, D. Krieg, E. Novak and J. Prochno). Submitted, arXiv:1903.00681.
3. Deterministic constructions of high-dimensional sets with small dispersion (with J. Vybíral). Submitted, arXiv:1901.06702.
2. Random sections of ellipsoids and the power of random information (with A. Hinrichs, D. Krieg, E. Novak and J. Prochno). Submitted, arXiv:1901.06639.
1. Numerical performance of optimized Frolov lattices in tensor product reproducing kernel Sobolev spaces (with C. Kacwin, J. Oettershagen and T. Ullrich). Submitted, arXiv:1802.08666.

## Refereed journal papers:

27. On a multi-dimensional Poissonian pair correlation concept and uniform distribution (with A. Hinrichs, L. Kaltenböck, G. Larcher and W. Stockinger). *Monatsh. Math.* 190 (2019), no. 2, 333–352, DOI:10.1007/s00605-019-01267-9, arXiv:1809.05672.
26. The minimal  $k$ -dispersion of point sets in high-dimensions (with A. Hinrichs, J. Prochno and J. Vybíral). *J. Complexity* 51 (2019), 68–78, DOI:10.1016/j.jco.2018.10.001, arXiv:1807.01492.
25. A note on the dispersion of admissible lattices. *Discrete Appl. Math.* 257 (2019), 385–387, DOI:10.1016/j.dam.2018.08.032, arXiv:1710.08694.
24. The curse of dimensionality for numerical integration on general domains (with A. Hinrichs and J. Prochno). *J. Complexity* 50 (2019), 25–42, DOI:10.1016/j.jco.2018.08.003, arXiv:1804.03957.
23. Comparison of hit-and-run, slice sampling and random walk Metropolis (with Daniel Rudolf). *J. Appl. Probab.* 55 (2018), no. 4, 1186–1202, DOI:10.1017/jpr.2018.78, arXiv:1505.00579.
22. Lattice rules with random  $n$  achieve nearly the optimal  $\mathcal{O}(n^{-\alpha-1/2})$  error independently of the dimension (with P. Kritzer, F. Y. Kuo and D. Nuyens). *J. Approx. Theory* 240 (2019), 96–113, DOI:10.1016/j.jat.2018.09.011, arXiv:1706.04502.
21. Digital net properties of a polynomial analogue of Frolov’s construction (with J. Dick, F. Pillichshammer, K. Suzuki and T. Yoshiki). *Finite Fields Appl.* 51 (2018), 325–350, DOI:10.1016/j.ffa.2018.02.004, arXiv:1712.06831.
20. Reproducing Kernels of Sobolev Spaces on  $\mathbb{R}^d$  and Applications to Embedding Constants and Tractability (with E. Novak, H. Woźniakowski and S. Zhang). *Analysis and Applications* 16 (2018), no. 5, 693–715, DOI:10.1142/S0219530518500094, arXiv:1709.02568.
19. An upper bound on the minimal dispersion (with J. Vybíral). *J. Complexity* 45 (2018), 120–126, DOI:10.1016/j.jco.2017.11.003, arXiv:171006754.
18. Lattice based integration algorithms: Kronecker sequences and rank-1 lattices (with J. Dick, F. Pillichshammer, K. Suzuki and T. Yoshiki).

- Ann. Mat. Pura Appl. (4)* 197 (2018), no. 1, 109–126,  
DOI:10.1007/s10231-017-0670-3, arXiv:1608.08687.
17. A lower bound for the dispersion on the torus.  
*Math. Comput. Simulation* 143 (2018), 186–190,  
DOI:10.1016/j.matcom.2015.12.005, arXiv:1510.04617.
  16. A Monte Carlo method for integration of multivariate smooth functions.  
*SIAM J. Numer. Anal.* 55 (2017), no. 3, 1188–1200,  
DOI:10.1137/16M1075557, arXiv:1604.06008.
  15. Product rules are optimal for numerical integration in classical smoothness spaces (with A. Hinrichs, E. Novak and H. Woźniakowski).  
*J. Complexity* 38 (2017), 39–49,  
DOI:10.1016/j.jco.2016.09.001, arXiv:1604.00261.
  14. Complexity of oscillatory integrals on the real line (with E. Novak, H. Woźniakowski and S. Zhang).  
*Adv. Comput. Math.* 43 (2017), 537–553,  
DOI:10.1007/s10444-016-9496-6, arXiv:1511.05414.
  13. Change of variable in spaces of mixed smoothness and numerical integration of multivariate functions on the unit cube (with V. K. Nguyen and T. Ullrich).  
*Constr. Appr.* 46 (2017), 69–108,  
DOI:10.1007/s00365-017-9371-9, arXiv:1511.02036.
  12. The role of Frolov’s cubature formula for functions with bounded mixed derivative (with Tino Ullrich).  
*SIAM J. Numer. Anal.* 54 (2016), no. 2, 969–993,  
DOI:10.1137/15M1014814, arXiv:1503.08846.
  11. On “Upper error bounds for quadrature formulas on function classes” by K. K. Frolov. In: R. Cools and D. Nuyens (Eds): *Monte Carlo and Quasi-Monte Carlo Methods*, Springer Proceedings in Mathematics & Statistics, Vol. 163 (2016), 571–582,  
DOI:10.1007/978-3-319-33507-0\_31, arXiv:1404.5457.
  10. Complexity of Oscillatory Integration for Univariate Sobolev Spaces (with Erich Novak and Henryk Woźniakowski).  
*J. Complexity* 31 (2014), no. 1, 15–41,  
DOI:10.1016/j.jco.2014.07.001, arXiv:1311.1528.
  9. Rapid mixing of Swendsen-Wang dynamics in two dimensions.  
*Dissertationes Math.* 502 (2014), 64 pp.,  
DOI:10.4064/dm502-0-1, arXiv:1212.4908.
  8. On weak tractability of the Clenshaw-Curtis Smolyak algorithm (with Aicke Hinrichs and Erich Novak).

- J. Approx. Theory* 183 (2014), 31–44,  
DOI:10.1016/j.jat.2014.03.012, arXiv:1301.4055.
7. Structure and eigenvalues of heat-bath Markov chains (with Martin Dyer and Catherine Greenhill).  
*Linear Algebra Appl.* 454 (2014), 57–71,  
DOI:10.1016/j.laa.2014.04.018, arXiv:1309.0360.
  6. The Curse of Dimensionality for Numerical Integration of Smooth Functions II (with Aicke Hinrichs, Erich Novak and Henryk Woźniakowski).  
*J. Complexity* 30 (2014), no. 2, 117–143,  
DOI:10.1016/j.jco.2013.10.007, arXiv:1304.3372.
  5. The Curse of Dimensionality for Numerical Integration of Smooth Functions (with Aicke Hinrichs, Erich Novak and Henryk Woźniakowski).  
*Math. Comp.* 83 (2014), no. 290, 2853–2863,  
DOI:10.1090/S0025-5718-2014-02855-X, arXiv:1211.0871.
  4. Swendsen-Wang is faster than single-bond dynamics.  
*SIAM J. Discrete Math.* 28 (2014), no. 1, 37–48,  
DOI:10.1137/120864003, arXiv:1201.5793.
  3. Positivity of hit-and-run and related algorithms (with Daniel Rudolf).  
*Electron. Commun. Probab.* 18 (2013), no. 49, 1–8,  
DOI:10.1214/ECP.v18-2507, arXiv:1212.4512.
  2. Comparison of Swendsen-Wang and Heat-Bath Dynamics.  
*Random Structures Algorithms* 42 (2013), no. 4, 520–535,  
DOI:10.1002/rsa.20431, arXiv:1105.3665.
  1. Exact Sampling for the Ising Model at all Temperatures.  
*Monte Carlo Methods Appl.*, 223–233, De Gruyter Proc. Math, De Gruyter, Berlin, 2013, arXiv:1012.3944.

### **Preprints and others:**

2. Heat-bath Markov chains have no negative eigenvalues (with Catherine Greenhill). *Preprint*, arXiv:1301.4055v1.
1. Rapid mixing of Swendsen-Wang and single-bond dynamics in two dimensions. *Preprint*, arXiv:1202.6321.

### **Invited scientific visits**

- ESI Program “Optimal Point Configurations on Manifolds”, Erwin Schrödinger Institute, Vienna, Austria, Jan 2021

- Dagstuhl Seminar 19341 on “Algorithms and Complexity for Continuous Problems”, Schloss Dagstuhl, Leibniz Center for Informatics, Germany, Aug 2019
- Workshop: “Challenges in optimal recovery and hyperbolic cross approximation”, Newton Institute for Mathematical Sciences, Cambridge, UK, Feb 2019
- University of Passau (invited by T. Müller-Gronbach), Germany, Jan 2019
- University of Osnabrück (invited by Michael Gnewuch), Germany, Dec 2018
- Special semester: “Multivariate Algorithms and their Foundations in Number Theory”, Johann Radon Institute for Computational and Applied Mathematics (RICAM), Austrian Academy of Sciences, Linz, Austria, Oct–Dec 2018
- Mini-conference “High-dimensional approximation and discretization”, Laboratory of High-Dimensional Approximation and Applications, Lomonosov Moscow State University, Moscow, Russia, Sep 2018
- Closing workshop of the “Graduiertenkolleg 1523”, Germany, March 2018
- ESI Program “Tractability of High Dimensional Problems and Discrepancy”, Erwin Schrödinger Institute, Vienna, Austria, Sep–Oct 2018
- Oberwolfach Workshop 1706c on “Perspectives in High-dimensional Probability and Convexity”, Germany, Feb 2017
- Workshop in Discrepancy Theory, Villa Cipressi, Varenna, June 2016
- Hausdorff Center for Mathematics (invited by Tino Ullrich), Bonn, Germany, Mar 2016
- Dagstuhl Seminar 15391 on “Algorithms and Complexity for Continuous Problems”, Schloss Dagstuhl, Leibniz Center for Informatics, Germany, Sep 2015
- University of Geneva (invited by Ioan Manolescu), Switzerland, May 2015
- Conference on “Information-based complexity”, Banach Center, Bedlewo, Poland, Apr 2015
- IBC workshop at “Foundations of Computational Mathematics conference” (FoCM 2014), Montevideo, Uruguay, Dec 2014
- ESI Programm “Minimal Energy Point Sets, Lattices, and Designs”, Erwin Schrödinger Institute, Vienna, Austria, Oct 2014
- Hausdorff Center for Mathematics (invited by Tino Ullrich), Bonn, Germany, Apr 2014
- Workshop: “Discrepancy, Numerical Integration and Hyperbolic Cross Approximation”, Hausdorff Center for Mathematics, Bonn, Germany, Sep 2013
- Dagstuhl Seminar 12391 on “Algorithms and Complexity for Continuous Problems”, Schloss Dagstuhl, Leibniz Center for Informatics, Germany, Sep 2012
- University of Roma Tre (invited by Fabio Martinelli), Rome, Italy, May 2012



- Hausdorff Trimester Program “Analysis and Numerics for High Dimensional Problems”, Hausdorff Institute, Bonn, Germany, June/July 2011

## Selected talks

- Dagstuhl Seminar “Algorithms and Complexity for Continuous Problems”, Schloss Dagstuhl, Leibniz Center for Informatics, Germany, Aug 2019  
Talk: *Discrepancy, Dispersion and Fixed Volume Discrepancy*
- Workshop: “Challenges in optimal recovery and hyperbolic cross approximation”, Newton Institute for Mathematical Sciences, Cambridge, UK, Feb 2019  
Talk: *Deterministic constructions of point sets with small dispersion*
- Special semester: “Multivariate Algorithms and their Foundations in Number Theory”, RICAM, Austrian Academy of Sciences, Linz, Austria, Nov 2018  
Talk: *Deterministic constructions of point sets with small dispersion*
- Ninth International Conference on Numerical Methods and Applications “NMA’18”, Borovets, Bulgaria, Aug 2018  
Talk: *Integration of Smooth Functions using Random Point Sets*
- Monte Carlo and Quasi-Monte Carlo Methods “MCQMC 2018”, Rennes, France, Jul 2018  
Talk: *The inverse of the dispersion depends logarithmically on the dimension*
- ESI Program “Tractability of High Dimensional Problems and Discrepancy”, Vienna, Oct 2017  
Talk: *The inverse of the dispersion depends logarithmically on the dimension*
- New Perspectives in Function spaces and Applications “NPFSA 2017”, Bedlewo, Poland, Sep 2017,  
Talk: *Monte Carlo methods for numerical integration*
- Foundations of Computational Mathematics “FoCM 2017”,  
*Semi-plenary talk*, Barcelona, Spain, July 2017  
Talk: *Optimal algorithms for numerical integration: a (personal) survey*
- IBC on the 70th anniversary of Henryk Woźniakowski, Bedlewo, Poland, August 2016  
Talk: *Product rules are optimal for classical smoothness spaces*
- Workshop in Discrepancy Theory, Villa Cipressi, Varenna, June 2016  
Talk: *Product rules are optimal for classical smoothness spaces*
- Research seminar “Mathematics of Computation”, HCM Bonn, Mar 2016  
Talk: *On a Monte Carlo method for smooth functions*

- International Congress on Industrial and Appl. Math. “ICIAM 2015”,  
Beijing, China, Aug 2015  
Talk: *A universal cubature formula for functions with mixed smoothness*
- IMACS Seminar on Monte Carlo Methods “MCM 2015”,  
Linz, July 2015  
Talk: *A universal cubature rule for functions with bounded mixed derivative*
- Mathematical Physics seminar of S. Smirnov and I. Manolescu,  
University of Geneva, Switzerland, May 2015  
Talk: *Dynamics for the random-cluster model on the square lattice*
- Conference on Information-based Complexity “IBC 2015”,  
Bedlewo, Poland, Apr 2015  
Talk: *Numerical integration of functions with bounded mixed derivative*
- Workshop “Approximation Methods and Function Spaces”,  
Hasenwinkel, Mar 2015  
Talk: *Numerical integration of functions with bounded mixed derivative*
- Foundations of Computational Mathematics “FoCM 2014”,  
Montevideo, Uruguay, Dec 2014  
Talk: *Numerical integration of functions with mixed smoothness*
- ESI Program “Minimal Energy Point Sets, Lattices, and Designs”,  
Vienna, Oct 2014  
Talk: *Frolov cubature in Besov spaces with mixed smoothness*
- Research seminar “Mathematics of Computation”, HCM Bonn, Apr 2014  
Talk: *On integration in Sobolev spaces using Frolov’s method*
- Monte Carlo and Quasi-Monte Carlo Methods “MCQMC 2014”,  
Leuven, Belgium, Apr 2014  
Talk: *Complexity of Oscillatory Integration*
- Random Structures and Algorithms Conference "RSA 2013",  
Poznań, Poland, Aug 2013  
Talk: *Rapid mixing for the non-critical random-cluster model on the lattice*
- German-Polish Joint Conference on Probability and Mathematical Statistics,  
Toruń, Poland, June 2013  
Talk: *Rapid mixing of Swendsen-Wang for the two-dimensional Ising model*
- Evaluation of research training group 1523/1, Jena, Dec 2012,  
Talk: *Rapid mixing of the Swendsen-Wang process for the two-dimensional Ising model*

- Dagstuhl Seminar “Algorithms and Complexity for Continuous Problems”, Schloss Dagstuhl, Leibniz Center for Informatics, Germany, Sep 2012  
Talk: *A rapidly mixing Markov chain for the two-dimensional Ising model*
- Probability seminar, University of Roma Tre, Rome, May 2012  
Talk: *Rapid mixing of the Swendsen-Wang process for the 2d Ising model at all temperatures*
- Annual meeting: research training group 1523, Oppurg, Mar 2012  
Talk: *Rapid mixing of Swendsen-Wang for 2d Ising model at all temperatures*
- Monte Carlo and Quasi-Monte Carlo Methods “MCQMC 2012”, Sydney, Feb 2012  
Talk: *Tight mixing bounds at the Potts transition point for single-bond dynamics on the torus*
- IMACS Seminar on Monte Carlo Methods “MCM 2011”, Borovets, Bulgaria, Aug 2011  
Talk: *Swendsen-Wang beats Heat-bath*
- Workshop on High-Dimensional Approximation “HDA 2011”, Hausdorff Institute, Bonn, June 2011  
Talk: *Swendsen-Wang beats Heat-bath*
- Series of talks on “Algorithms for the Ising model”, Jena, Oct–Dec 2009
- Math. Seminar, Matheon, Berlin, Jan 2009  
Talk: *Vergleich von Importance-Sampling und dem Metropolis-Algorithmus*

## Students

- Stefan Stockinger - Bachelor, 2019, JKU Linz
- Lukas Weissinger - Bachelor, 2019, JKU Linz
- Julian Hofstadler - Bachelor, 2019, JKU Linz
- Mathias Sonnleitner - Master, jointly with Prof. A. Hinrichs, 2019, JKU Linz
- Sebastian Falkensteiner - Master, jointly with Prof. Dr. A. Hinrichs, 2016, JKU Linz
- David Krieg - Master, jointly with Prof. Dr. E. Novak, 2016, FSU Jena
- David Krieg - Bachelor, jointly with Prof. Dr. E. Novak, 2014, FSU Jena

- Florian Blöthner - Diplom, jointly with Prof. Dr. E. Novak, 2011, FSU Jena

## Scientific community service

- Organization:
- “Discretization” section of the conference "Approximation Theory and Applications" (dedicated to the 100th anniversary of S.B. Stechkin) at Steklov Institute of Mathematics, Moscow, Russia (August 2020)
  - Conference “Approximation and Geometry in High Dimensions 2020”, Banach Center, Bedlewo, Poland
  - Special session “Dispersion and Applications” at “MCQMC 2018”, Rennes, France
  - Co-organization of the “Joint Austrian-Czech Analysis Seminar 2018”, Traunkirchen, Austria
  - Special session “Integration, Approximation and Discrepancy” at “ICIAM 2015”, Beijing, China
  - Special session “Tractability of integration and approximation” with A. Hinrichs at “MCQMC 2014”, Leuven, Belgium
- Administration:
- Responsible for design and implementation of the new “Math for Artificial Intelligence” courses at JKU Linz (Feb 2019 –)
  - Member of the appointment committee for “Numerical Analysis” at JKU Linz (2019 –)
  - Contact person (“Mentor”) for first year students in mathematics at JKU Linz (Oct 2017 –)
  - Responsible for IT of the Institute of Analysis at JKU Linz (Mar 2016 – Nov 2019)
  - Mid-level staff representative of the Institute of Analysis in the *Institutsversammlung* at JKU Linz (Jan 2016 –)
  - Member of the appointment committee for “Mathematical optimization” at FSU Jena (2015)
- Referee for:
- Ann. Inst. Henri Poincaré Probab. Stat., Applied Numerical Mathematics, Bulletin of the Brazilian Mathematical Society, Communications in Mathematical Physics, Constructive Approximation, Electronic Communications in Probability, J. Approximation Theory, J. Complexity, J. Mathematical Finance, J. Statis-

tical Physics, Mathematics and Computers in Simulation, Mathematika, Probability Theory and Related Fields, Random Structures and Algorithms, SIAM J. Discrete Math., SIAM J. Numer. Anal.

- Proceedings: Curves and Surfaces, Dagstuhl, FOCS, MCM, MCQMC, RANDOM, SLOAN80, SODA, STOC
- Awards: IBC Young Researcher Award 2016-2018, J. Complexity Best Paper Award 2016

## Miscellaneous

Co-authors: Josef Dick (Sydney, AU), Martin Dyer (Leeds, UK), Catherine Greenhill (Sydney, AU), Aicke Hinrichs (Linz, AT), Christopher Kacwin (Bonn, DE), Lisa Kaltenböck (Linz, AT), David Krieg (Linz, AT), Peter Kritzer (Linz, AT), Frances Y. Kuo (Sydney, AU), Gerhard Larcher (Linz, AT), Van Kien Nguyen (Bonn, DE), Dirk Nuyens (Leuven, BE), Erich Novak (Jena, DE), Jens Oettershagen (Bonn, DE), Friedrich Pillichshammer (Linz, AT), Joscha Prochno (Graz, AT), Daniel Rudolf (Göttingen, DE), Wolfgang Stockinger (Oxford, UK), Kosuke Suzuki (Hiroshima, JPN), Vladimir N. Temlyakov (South Carolina, US) Tino Ullrich (Bonn, DE), Jan Vybíral (Prag, CZ), Henryk Woźniakowski (New York, USA; Warsaw, PL), Takehito Yoshiki (Kyoto, JPN), Shun Zhang (Hefei, China)

Languages: German (native speaker), english (good)

Computer skills: Matlab (good), Geogebra (good), Excel (good), C++ (basic), R (basic)

Linz, December 3, 2019