

**Professor for Stochastics**

Department for Artificial Intelligence & Human  
Interfaces (AIHI)  
University of Salzburg  
Hellbrunner Strasse 34  
5020 Salzburg, Austria

Tel: +43 662 8044-5326  
hp: [www.trutschnig.net](http://www.trutschnig.net)  
E-mail: [wolfgang@trutschnig.net](mailto:wolfgang@trutschnig.net)

**Director IDA Lab Salzburg**

hp: [www.plus.ac.at/ida-lab/](http://www.plus.ac.at/ida-lab/)

**Co-managing Director correlate analytics gmbh**

hp: [www.correlate.at](http://www.correlate.at)

PROFILES

[Google scholar profile](#)  
Scopus Author ID: 25652347200  
ORCID: 0000-0002-7131-1944  
[zbMATH entry](#)

PERSONAL  
INFORMATION

Date of Birth: 14.01.1977  
Place of Birth: Lienz, Tirol (Austria)  
Citizenship: Austria

RESEARCH  
INTERESTS

**Probability Theory & Mathematical Statistics, Fractals, Analysis**

- Copulas and Dependence Modeling
- Multivariate and Nonparametric Statistics
- Dynamical Systems (in discrete time) and their interplay with number theory
- Fractals, Singular Functions and Iterated Function Systems
- Markov Operators and Kernels
- Lineability, spaceability, algebraability, latticeability

**Applied Statistics & Data Science**

- Probabilistic fundamentals of Machine Learning
- Forecasting and Regression Techniques
- Feature Selection
- Dependence Modeling of processes
- Automatic Reporting with R and Miktex (knitr, Sweave)
- Interactive Dashboards with R-shiny, interactive graphics with plotly

PEER-REVIEWED  
JOURNAL  
PUBLICATIONS -  
MATHEMATICS  
(SORTED BY  
ACCEPTANCE DATE)

- [48] J. Carmona Tapia, J. Fernández Sánchez, J.B. Seoane-Sepúlveda, **W. Trutschnig**: Lineability, Spaceability, and Latticeability of subsets of  $C([0, 1])$  and Sobolev Spaces, *Revista de la Real Academia de Ciencias Exactas, Físicas y Naturales. Serie A. Matemáticas* **116**, 113 (2022), doi:10.1007/s13398-022-01256-y
- [47] F. Griessenberger, R.R. Junker, **W. Trutschnig**: On a multivariate copula-based dependence measure and its estimation, *Electronic Journal of Statistics* **16**, 2206–2251 (2022), doi:10.1214/22-EJS2005
- [46] J. Fernández-Sánchez, D.L. Rodríguez-Vidanes, J.B. Seoane-Sepúlveda, **W. Trutschnig**: Lineability and  $K$ -linear discontinuous functions, to appear in *Linear Algebra and its Applications* (2022)
- [45] T. Kasper, S. Fuchs, **W. Trutschnig**: On convergence of associative copulas and related results, *Dependence Modeling* **9**, 307-326 (2021), doi:10.1515/demo-2021-0114
- [44] J. Fernández Sánchez, **W. Trutschnig**, M. Tschimpke: Markov product invariance in classes of bivariate copulas characterized by univariate functions, *Journal of Mathematical Analysis and Applications* **501**(2), 125185 (2021), doi:10.1016/j.jmaa.2021.125184
- [43] T. Mroz, S. Fuchs, **W. Trutschnig**: How simplifying and flexible is the simplifying assumption in pair-copula constructions - analytic answers in dimension three and a glimpse beyond, *Electronic Journal of Statistics* **15**(1), 1951-1992 (2021), doi:10.1214/21-EJS1832

- [42] F. Griessenberger, J. Fernández Sánchez, **W. Trutschnig**: Some properties of double shuffles of bivariate copulas and (extreme) copulas invariant with respect to Lüroth double shuffles, *Fuzzy Sets and Systems* **428**, 102-120 (2022), doi:10.1016/j.fss.2021.02.014
- [41] T. Kasper, S. Fuchs, **W. Trutschnig**: On weak conditional convergence of bivariate Archimedean and Extreme Value copulas, and consequences to nonparametric estimation, *Bernoulli* **27**(4), 2217-2240 (2021), doi:10.3150/20-BEJ1306
- [40] F. Durante, J. Fernández Sánchez, **W. Trutschnig**, M. Úbeda-Flores: On the size of subclasses of quasi-copulas and their Dedekind-MacNeille completion, *Mathematics* **8**(12), 2238 (2020), doi:10.3390/math8122238
- [39] S. Fuchs, **W. Trutschnig**: On quantile-based co-risk measures and their estimation, *Dependence Modeling* **8**, 396-416 (2020), doi:10.1515/demo-2020-0021
- [38] F. Durante, J. Fernández Sánchez, C. Ignazzi, **W. Trutschnig**: On extremal problems for pairs of uniformly distributed sequences and integrals with respect to copula measures, *Uniform Distribution Theory* **15**(2), 99-112 (2020), doi:10.2478/udt-2020-0013
- [37] J. Fernández Sánchez, J.B. Seoane-Sepúlveda, **W. Trutschnig**: Lineability, algebrability, and sequences of random variables, *Mathematische Nachrichten* **295**(5), 861-875 (2022) doi:10.1002/mana.202000102
- [36] J. Fernández Sánchez, D.L. Rodríguez-Vidanes, J.B. Seoane-Sepúlveda, **W. Trutschnig**: Lineability, differentiable functions and special derivatives, *Banach Journal of Mathematical Analysis* **15**, 18 (2021), doi:10.1007/s43037-020-00103-9
- [35] L. Bernal-González, J. Fernández Sánchez, J.B. Seoane-Sepúlveda, **W. Trutschnig**: Highly tempering infinite matrices II: From divergence to convergence via Toeplitz-Silverman matrices, *Revista de la Real Academia de Ciencias Exactas, Físicas y Naturales. Serie A. Matemáticas* **114**, 202 (2020), doi:10.1007/s13398-020-00934-z
- [34] R.R. Junker, F. Griessenberger, **W. Trutschnig**: Estimating scale-invariant directed dependence of bivariate distributions, *Computational Statistics and Data Analysis* **153**, 107058 (2021), doi:10.1016/j.csda.2020.107058
- [33] J. Fernández Sánchez, D.L. Rodríguez-Vidanes, J.B. Seoane-Sepúlveda, **W. Trutschnig**: Lineability and integrability in the sense of Riemann, Lebesgue, Denjoy, and Khintchine, *Journal of Mathematical Analysis and Applications* **492**(1), 124433 (2020), doi:10.1016/j.jmaa.2020.124433
- [32] N. Kamnitui, **W. Trutschnig**: On some properties of reflected maxmin copulas, *Fuzzy Sets and Systems* **393**, 53-74 (2020), doi:10.1016/j.fss.2019.07.007
- [31] J. Fernández Sánchez, **W. Trutschnig**: Nested square roots of 2 revisited, *American Mathematical Monthly* **127**(4), 344-351 (2020), doi:10.1080/00029890.2020.1707059
- [30] T. Mroz, **W. Trutschnig**: A sharp inequality for Kendall's  $\tau$  and Spearman's  $\rho$  of Extreme-Value Copulas, *Dependence Modeling* **6**, 369-376 (2018), doi:10.1515/demo-2018-0021
- [29] N. Kamnitui, Ch. Genest, P. Jaworski, **W. Trutschnig**: On the size of the class of bivariate extreme-value copulas with a fixed value of Spearman's rho or Kendall's tau, *Journal of Mathematical Analysis and Applications* **472**(1), 920-936 (2019), doi:10.1016/j.jmaa.2018.11.057
- [28] F. Durante, J. Fernández Sánchez, **W. Trutschnig**: Spatially homogeneous copulas, *Annals of the Institute of Statistical Mathematics* **72**(2), 607-626 (2020), doi:10.1007/s10463-018-0703-8
- [27] M. Coblenz, O. Grothe, M. Schreyer, **W. Trutschnig**: On the Length of Copula Level Curves, *Journal of Multivariate Analysis* **167**, 347-365 (2018), doi:10.1016/j.jmva.2018.06.001
- [26] N. Kamnitui, J. Fernández Sánchez, **W. Trutschnig**: Maximum asymmetry of copulas revisited, *Dependence Modeling* **6**(1), 47-62 (2018), doi:10.1515/demo-2018-0003
- [25] J. Fernández Sánchez, **W. Trutschnig**: A note on singularity of a recently introduced family of Minkowski's question-mark functions, *Comptes rendus Mathématique* **355**(9), 956-959 (2017), doi:10.1016/j.crma.2017.09.009

- [24] F. Durante, J. Fernández Sánchez, **W. Trutschnig**: Baire category results for quasi-copulas, *Dependence Modeling* **4**, 215–223 (2016), doi:10.1515/demo-2016-0012
- [23] **W. Trutschnig**, M. Schreyer, J. Fernández Sánchez: Mass distributions of two-dimensional extreme-value copulas and related results, *Extremes* **19**, 405–427 (2016), doi:10.1007/s10687-016-0249-1
- [22] M. Schreyer, R. Paulin, **W. Trutschnig**: On the exact region determined by Kendall’s tau and Spearman’s rho, *Journal of the Royal Statistical Society: Series B (Statistical Methodology)* **79** (2), 613–633 (2017), doi:10.1111/rssb.12181
- [21] J. Fernández Sánchez, **W. Trutschnig**: Singularity aspects of Archimedean copulas, *Journal of Mathematical Analysis and Applications* **432**, 103–113 (2015), doi:10.1016/j.jmaa.2015.06.036
- [20] F. Durante, J. Fernández Sánchez, **W. Trutschnig**: A typical copula is singular, *Journal of Mathematical Analysis and Applications* **430**, 517–527 (2015), doi:10.1016/j.jmaa.2015.05.009
- [19] F. Durante, J. Fernández Sánchez, **W. Trutschnig**: Baire category results for exchangeable copulas, *Fuzzy Sets and Systems* **284**, 146–151 (2016), doi:10.1016/j.fss.2015.04.010
- [18] F. Durante, J. Fernández Sánchez, **W. Trutschnig**: Solution to an open problem about a transformation on the space of copulas, *Dependence Modeling* **2**, 65–72 (2014), doi:10.2478/demo-2014-0005
- [17] F. Durante, J. Fernández Sánchez, **W. Trutschnig**: On the singular components of a copula, *Journal of Applied Probability* **52**, 1175–1182 (2015), doi:10.1239/jap/1450802760
- [16] F. Durante, J. Fernández Sánchez, **W. Trutschnig**: Multivariate copulas with hairpin support, *Journal of Multivariate Analysis* **130**, 323–334 (2014), doi:10.1016/j.jmva.2014.06.009
- [15] J. Fernández Sánchez, **W. Trutschnig**: Conditioning based metrics on the space of multivariate copulas and their interrelation with uniform and levelwise convergence and Iterated Function Systems, *Journal of Theoretical Probability* **28**, 1311–1336 (2015), doi:10.1007/s10959-014-0541-4
- [14] J. Fernández Sánchez, **W. Trutschnig**: Some members of the class of (quasi-)copulas with given diagonal from the Markov kernel perspective, *Communications in Statistics - Theory and Methods* **45**, 1508–1526 (2016), doi:10.1080/03610926.2013.864856
- [13] **W. Trutschnig**, J. Fernández Sánchez: Copulas with continuous, strictly increasing singular conditional distribution functions, *Journal of Mathematical Analysis and Applications* **410**, 1014–1027 (2014), doi:10.1016/j.jmaa.2013.09.032
- [12] F. Durante, J. Fernández Sánchez, **W. Trutschnig**: On the interrelation between Dempster-Shafer Belief Structures and their Belief Cumulative Distribution Functions, *Knowledge-Based Systems* **52**, 107–113 (2013), doi:10.1016/j.knosys.2013.07.012
- [11] E. de Amo, M. Díaz Carrillo, J. Fernández Sánchez, **W. Trutschnig**: Some results on homeomorphisms between fractal supports of copulas, *Nonlinear Analysis Series A: Theory, Methods & Applications* **85**, 132–144 (2013), doi:10.1016/j.na.2013.02.027
- [10] **W. Trutschnig**: On Cesáro convergence of iterates of the Star Product of Copulas, *Statistics and Probability Letters* **83**, 357–365 (2013), doi:10.1016/j.spl.2012.09.025
- [9] **W. Trutschnig**, J. Fernández Sánchez: Some results on shuffles of two-dimensional copulas, *Journal of Statistical Planning and Inference* **143**, 251–260 (2013), doi:10.1016/j.jspi.2012.07.017
- [8] **W. Trutschnig**, J. Fernández Sánchez: Idempotent and multivariate copulas with fractal support, *Journal of Statistical Planning and Inference* **142**, 3086–3096 (2012), doi:10.1016/j.jspi.2012.06.012
- [7] **W. Trutschnig**: Some results on the convergence of (quasi-) copulas, *Fuzzy Sets and Systems* **191**, 113–121 (2012), doi:10.1016/j.fss.2011.06.013
- [6] **W. Trutschnig**: On a strong metric on the space of copulas and its induced dependence measure, *Journal of Mathematical Analysis and Applications* **384**, 690–705 (2011), doi:10.1016/j.jmaa.2011.06.013

- [5] A. Colubi, G. González-Rodríguez, M.A. Gil, **W. Trutschnig**: Nonparametric criteria for supervised classification of fuzzy data, *International Journal of Approximate Reasoning* **52**, Issue 9, 1272-1282 (2011), doi:10.1016/j.ijar.2011.05.007
- [4] **W. Trutschnig**: Characterization of the sendigraph-convergence of fuzzy vectors by means of their  $L_p$ - and levelwise convergence, *Fuzzy Sets and Systems* **161** (8), 1064-1077 (2010), doi:10.1016/j.fss.2009.07.005
- [3] **W. Trutschnig**, G. González-Rodríguez, A. Colubi, M.A. Gil: A new family of metrics for compact, convex (fuzzy) sets based on a generalized concept of mid and spread, *Information Sciences* **179**, 3964-3972 (2009), doi:10.1016/j.ins.2009.06.023
- [2] G. González-Rodríguez, A. Colubi, **W. Trutschnig**: Simulation of fuzzy random variables, *Information Sciences* **179**, 642-653 (2009), doi:10.1016/j.ins.2008.10.018
- [1] **W. Trutschnig**: A strong consistency result for fuzzy relative frequencies interpreted as estimator for the fuzzy-valued probability, *Fuzzy Sets and Systems* **159**, 259-269 (2008), doi:10.1016/j.fss.2007.05.017

PEER-REVIEWED  
JOURNAL  
PUBLICATIONS -  
INTERDISCIPLINARY

- [20] M.J. Mair, M. Mitterer, P. Gattinger, J.M. Berger, **W. Trutschnig**, A.C. Bathke, M. Gansterer, A.S. Berghoff, S. Laengle, L. Gottmann, T. Buratti, H. Haslacher, W.W. Lamm, M. Raderer, S. Tobudic, T. Fuereder, R. Valenta, D. Fong, M. Preusser: Enhanced SARS-CoV-2 breakthrough infections in patients with hematologic and solid cancers due to Omicron, to appear in *Cancer Cell* (2022), doi:10.1016/j.ccell.2022.04.003
- [19] M.J. Mair, J.M. Berger, M. Mitterer, M. Gansterer, A.C. Bathke, **W. Trutschnig**, A.S. Berghoff, T. Perkmann, H. Haslacher, W.W. Lamm, M. Raderer, S. Tobudic, T. Fuereder, T. Buratti, D. Fong, M. Preusser: Third dose of SARS-CoV-2 vaccination in hematological patients and health care workers: humoral immune responses and adverse events - a retrospective cohort study, *The European Journal of Cancer* **165**, 184-194 (2022), doi:10.1016/j.ejca.2022.01.019
- [18] E. Gfrerer, D. Laina, G. Danae, M. Gibernau, R. Fuchs, M. Happ, T. Tolasch, **W. Trutschnig**, A.C. Hörger, H.P. Comes, S. Dötterl: Floral scents of a deceptive plant are hyperdiverse and under population-specific phenotypic selection, *Frontiers in Plant Science, section Functional Plant Ecology* **12**, 1910 (2021), doi:10.3389/fpls.2021.719092
- [17] J.M. Berger, M. Gansterer, **W. Trutschnig**, A.C. Bathke, R. Strassl, W. Lamm, M. Raderer, M. Preusser, A.S. Berghoff: SARS-CoV-2 screening in cancer outpatients during the second wave of the COVID-19 pandemic: conclusions for crisis response at a high-volume oncology center, *Wiener klinische Wochenschrift* **19**, 1-6 (2021), doi:10.1007/s00508-021-01927-7
- [16] S. Aspalter, W. Senker, C. Radl, H. Stefanits, M. Aichholzer, K. Hießböck, C. Leitner, N. Stroh, **W. Trutschnig**, A. Gruber: Accidental dural tears in minimally invasive spinal surgery for degenerative lumbar spine disease, *Frontiers in Surgery, section Neurosurgery* **8**, 226 (2021), doi:10.3389/fsurg.2021.708243
- [15] J. von Schleinitz, M. Graf, **W. Trutschnig**, A. Schröder: VASP: An autoencoder-based approach for multivariate anomaly detection and robust time series prediction with application in motorsport, *Engineering Applications of Artificial Intelligence* **104**, 104354 (2021), doi:10.1016/j.engappai.2021.104354
- [14] W. Senker, H. Stefanits, M. Gmeiner, **W. Trutschnig**, Ch. Radl, A. Gruber: The Influence of Smoking in Minimally Invasive Spinal Fusion Surgery, *Open Medicine* **16**(1), 198-206 (2021), doi:10.1515/med-2021-0223
- [13] M. Wagner, A.C. Bathke, S.C. Cary, T.G.A. Green; R.R. Junker, **W. Trutschnig**, U. Ruprecht: Myco- and photobiont associations in crustose lichens in the McMurdo Dry Valleys (Antarctica) reveal high differentiation along an elevational gradient, *Polar biology* **43**, 1967-1988 (2020), doi:10.1200/JCO.20.01442
- [12] A.S. Berghoff, M. Gansterer, A.C. Bathke, **W. Trutschnig**, P. Hungerländer, J. Berger, J. Kreminger, A. Starzer, R. Schmidt, W. Lamm, M. Raderer, A. Gottlieb, N. Mauser, M. Preusser: SARS-CoV-2 testing in 1016 consecutive cancer patients treated at a tertiary care hospital during the COVID-19 pandemic, *Journal of Clinical Oncology* **38**(30), 3547-3554 (2020), doi:10.1200/JCO.20.01442

- [11] R.R. Junker, M. Hanusch, X. He, V. Ruiz-Hernández, J.C. Otto, S. Kraushaar, K. Bauch, F. Griessenberger, L.-M. Ohler, **W. Trutschnig**: Ödenwinkel: An Alpine platform for observational and experimental research on the emergence of multidiversity and ecosystem complexity, *Web Ecology* **20**, 95-106 (2020), doi:10.5194/we-20-95-2020
- [10] R. Schuster, M.L. Schreyer, T. Kaiser, T. Berger, J.P. Klein, S. Moritz, A.R. Laireiter, **W. Trutschnig**: Effects of intense assessment on statistical power in randomized controlled trials: Simulation study on depression, *Internet Interventions* **20**, 100313 (2020), doi:10.1016/j.invent.2020.100313
- [9] W. Senker, H. Stefanits, M. Gmeiner, **W. Trutschnig**, Ch. Radl, A. Gruber: The Influence of Age on the Peri- and Postoperative Clinical Course in Patients Undergoing Minimally Invasive Transforaminal Lumbar Interbody Fusion Techniques of the Lumbar Spine, *Clinical Neurology and Neurosurgery* **182**, 25-31 (2019), doi:10.1016/j.clineuro.2019.04.025
- [8] W. Senker, H. Stefanits, M. Gmeiner, **W. Trutschnig**, Ch. Radl, A. Gruber: The Impact of Type 2 Diabetes on the Peri- and Postoperative Outcomes of Minimally Invasive Fusion Techniques in the Lumbar Spine, to appear in *Journal of Neurosurgical Sciences*, 2018 JUL 17 (2018), doi:10.23736/S0390-5616.18.04467-3
- [7] J.H. Parkinson, R. Kutil, J. Kuppler, R.R. Junker, **W. Trutschnig**, A.C. Bathke: A Fast and Robust Way to Estimate Overlap of Niches, and Draw Inference, *International Journal of Biostatistics* **14**(2) (2018), doi:10.1515/ijb-2017-0028
- [6] W. Senker, H. Stefanits, M. Gmeiner, **W. Trutschnig**, I. Weinfurter, A. Gruber: Does obesity affect peri- and postoperative morbidity and complication rates after minimal access spinal technologies (MAST) in surgery for lumbar degenerative disc disease?, *World Neurosurgery*, **111**, e374–e385 (2018), doi:10.1016/j.wneu.2017.12.075
- [5] J. Kuppler, M. Höfers, **W. Trutschnig**, A.C. Bathke, J. Eiben, C.C Daehler, R. Junker: Exotic flower visitors exploit large floral trait spaces resulting in asymmetric resource partitioning with native visitors, *Functional Ecology* **31**(12), 2244–2254 (2017), doi:10.1111/1365-2435.12932
- [4] M. Wagner, **W. Trutschnig**, A.C. Bathke, U. Ruprecht: A first approach to calculate BIOCLIM variables and climate zones for Antarctica, *Theoretical and Applied Climatology* **131**, 1397–1415 (2018) doi:10.1007/s00704-017-2053-5
- [3] S. Pittner, B. Ehrenfellner, A. Zissler, V. Racher, **W. Trutschnig**, A.C. Bathke, A.M. Sängler, W. Stoiber, P. Steinbacher, F.C. Monticelli: First application of a protein based approach for time since death estimation, *International Journal of Legal Medicine* **131**(2), 479–483 (2017), doi:10.1007/s00414-016-1459-4
- [2] R.R. Junker, J. Kuppler, A.C. Bathke, M.L. Schreyer, **W. Trutschnig**: Dynamic range boxes - A robust non-parametric approach to quantify size and overlap of  $n$ -dimensional hypervolumes, *Methods in Ecology and Evolution* **7**(12), 1503–1513 (2016), doi:10.1111/2041-210X.12611
- [1] P. Ranacher, R. Brunauer, **W. Trutschnig**, S. Van der Spek, S. Reich: Why GPS makes distances bigger than they are, *International Journal of Geographical Information Science* **30**, 316-333 (2016), doi:10.1080/13658816.2015.1086924  
(open access, 9.000 reads in the period October 2015 - January 2016)

SUBMITTED FOR  
PUBLICATION -  
MATHEMATICS

- [3] F. Griessenberger, **W. Trutschnig**: Maximal asymmetry of bivariate copulas and consequences to measures of dependence
- [2] T. Mroz, J. Fernández Sánchez, S. Fuchs, **W. Trutschnig**: On distributions with fixed marginals maximizing the joint or the prior default probability, estimation, and related results, preprint on arXiv
- [1] L. Bernal-González, J. Fernández Sánchez, J.B. Seoane-Sepúlveda, **W. Trutschnig**: On special partitions of  $[0, 1]$  and consequences to lineability and algebrability of the family of absolutely continuous, nowhere monotonic functions

- SUBMITTED FOR PUBLICATION - INTERDISCIPLINARY
- [3] F. Griessenberger, **W. Trutschnig**, R.R. Junker: qad: An R-package to detect asymmetric and directed dependence in bivariate samples
- [2] W. Senker, H. Stefanits, M. Gmeiner, **W. Trutschnig**, J. Franke, A. Gruber: Nonsteroidal anti-inflammatory drugs (NSAID) do not increase blood loss or the incidence of post-operative epidural hematomas when using minimally invasive fusion techniques in the degenerative lumbar spine
- [1] W. Senker, H. Stefanits, M. Gmeiner, **W. Trutschnig**, Ch. Radl, A. Gruber: MAY - The Peri- and Postoperative Morbidity Rate of Minimally Invasive Fusion Techniques of the Lumbar Spine in Older Patients
- BOOKS AND BOOK CHAPTERS
- [8] F. Griessenberger, **W. Trutschnig**: Estimating Asymmetric Dependence via Empirical Checkerboard Copulas, in A. Pollice, N. Salvati, S. Spagnolo (Eds) *Book of Short Papers SIS 2020*, pp. 304–309 (2020), [link to pdf](#)
- [7] **W. Trutschnig**: Complete dependence everywhere?, in M. Úbeda Flores, E. de Amo Artero, F. Durante, J. Fernández Sánchez (Eds) *Copulas and Dependence Models with Applications - Contributions in Honor of Roger B. Nelsen*, pp. 225-240, Springer (2017), doi:10.1007/978-3-319-64221-5
- [6] F. Durante, J. Fernández Sánchez, **W. Trutschnig**: Singular copulas, Oberwolfach Reports, 2015(20), 40-43, doi:10.4171/OWR/2015/20
- [5] **W. Trutschnig**, J. Fernández Sánchez: Some consequences of the Markov kernel perspective of copulas, in K. Glau, M. Scherer, R. Zagst (Eds) *Innovations in Quantitative Risk Management*, Springer Proceedings in Mathematics & Statistics, Volume 99, pp. 393-409, Springer Berlin/Heidelberg (2014), doi:10.1007/978-3-319-09114-3\_23
- [4] **W. Trutschnig**: Some smoothing properties of the Star Product of copulas, in: R. Kruse et al. (Eds) *Synergies of Soft Computing and Statistics for Intelligent Data Analysis*, Series: Advances in Intelligent and Soft Computing, Volume 190, Part 4, pp. 349-357, Springer Berlin/Heidelberg (2013), doi:10.1007/978-3-642-33042-1\_38
- [3] **W. Trutschnig**: Idempotent copulas with fractal support, in: S. Greco et al. (Eds) *Communications in Computer and Information Science*, Series: Advances in Computational Intelligence, Volume 298, Part 3, pp. 161-170, Springer Berlin/Heidelberg (2012), doi:10.1007/978-3-642-31715-6\_18
- [2] C. Borgelt, G. González-Rodríguez, **W. Trutschnig**, M.A. Lubiano, M.A. Gil, P. Grzegorzewski, O. Hryniewicz (Eds): *Combining Soft Computing and Statistical Methods in Data Analysis*, Series: Advances in Intelligent and Soft Computing, Vol. 77, Springer Berlin/Heidelberg (2010), doi:10.1007/978-3-642-14746-3
- [1] M.A. Lubiano, **W. Trutschnig**: ANOVA for fuzzy random variables Using the R-package SAFD in: C. Borgelt et al. (Eds): *Combining Soft Computing and Statistical Methods in Data Analysis*, Series: Advances in Intelligent and Soft Computing, Vol. 77, pp. 449-456, Springer Berlin/Heidelberg (2010), doi:10.1007/978-3-642-14746-3\_56
- SHORTLIST POSITIONS
- Full professorship §99 UG ‘Statistics’ at the University of Klagenfurt, 1<sup>st</sup> place (11/2019), not invited to negotiations
  - Associate professorship ‘Statistics’ at the University of Bozen, 2<sup>nd</sup> place (10/2017)
  - Full professorship §98 UG ‘Applied Statistics’ at the Technical University Graz, 3<sup>rd</sup> place (02/2017)
- HONORS
- Gambrinus Fellowship of the Technical University of Dortmund (DE); collaboration partner: Prof. Dr. Karl Friedrich Siburg (06/2019)
  - Winner of the University of Salzburg’s Kurt-Zopf-Förderpreis 2018 (for the paper [22])
  - Winner of the University of Salzburg’s Excellence in Teaching Award (category: best lecture); for the course ‘Fractals and Chance’ (05/2017)

- Winner of the Austrian Statistical Association's price for dissertations in Mathematical Statistics (2007)
- Excellence Scholarship of the Vienna University of Technology (1996-1999, 2002)

#### EDITORIAL WORK

- Associate Editor for Biometrical Journal
- Associate Editor for Econometrics and Statistics (EcoSta)
- Guest Co-editor for the Dependence Modeling Special Issue for the Salzburg workshop on Dependence Models & Copulas
- Editorial Advisory Board member of Dependence Modeling (appointed for the period 2018-01-01 till 2021-12-31)
- Editorial Board member of Fuzzy Sets and Systems
- Editorial Board member of Austrian Journal of Statistics

#### REFEREE

Applied Mathematics Letters; Austrian Journal of Statistics; Bernoulli; Canadian Journal of Statistics; Chaos, Solitons & Fractals; Communications in Statistics; Computational Statistics and Data Analysis; Computers and Mathematics with Applications; Dependence Modeling; Econometrics; Electronic Journal of Statistics; European Actuarial Journal; European Journal of Operational Research; Extremes; Fuzzy Sets and Systems; IEEE Transactions on Fuzzy Systems; Information Sciences; International Journal of Approximate Reasoning; International Journal of Geographical Information Science; International Journal of Uncertainty; Journal of Mathematical Analysis and Applications; Journal of Multivariate Analysis; Journal of Statistical Planning and Inference; Journal of the American Statistical Association; Knowledge-Based Systems; Kybernetika; Letters in Biomathematics; Mathematical Reviews; Mechanical Systems and Signal Processing; Metrika; Risks; Soft Computing; Statistics & Probability Letters; TEST

#### SCIENTIFIC COMMITTEES

- Co-Chair of the specialized team on Dependence Models and Copulas within the ERCIM Workgroup on Computational and Methodological Statistics (together with Fabrizio Durante and Ivan Kojadinovic)
- Management committee member (rep. Austria) of the ICT COST Action IC1408 CRoNoS (Computationally-intensive methods for the robust analysis of non-standard data)
- Local Co-Organizer of the 10th International Workshop on Simulation and Statistics, September 02-06 2019, Salzburg, Austria
- Chair of the Austrian Stochastic Days 2017 (as satellite meeting of the ÖMG-DMV congress 2017), September 12-13, Salzburg, Austria
- Organizer of the session *Recent advances in dependence modelling and optimization* at the Workshop on Copulas and Their Applications celebrating the 75th birthday of Roger B. Nelsen, July 03-05, 2017, Almería, Spain
- Co-Organizer of the sessions *Dependence models and copulas I-IV* at the CMStatistics 2016, December 09-11 2016, Seville, Spain (together with Fabrizio Durante)
- Chair of the Salzburg Workshop on Dependence Models and Copulas, September 19-22 2016, Salzburg, Austria
- Co-Organizer of the session *Data Analysis with Dependence Models* at the SMPS 2016, September 12-14 2016, Rome, Italy (together with Fabrizio Durante)
- Co-Organizer of the sessions *Dependence models and copulas I-III* at the CMStatistics 2015, December 12-14 2015, London, UK (together with Fabrizio Durante)
- Organizer of the session *Copulas* at the Österreichische Statistiktage 2015, October 21-23 2015, Vienna, Austria
- Co-Organizer of the sessions *Dependence models and copulas: Theory* and *Dependence models and copulas: Applications* at the ERCIM 2014, December 6-8 2014, Pisa, Italy (together with Fabrizio Durante)

- Co-Organizer of the sessions *Mathematical Aspects of Copulas I + II, Dependence Models in Environmental Sciences* at the [ERCIM 2013](#), December 14-16 2013, Senate House, University of London, London, UK (together with Fabrizio Durante)
- Organizer of the sessions *Copulas I-III* at the [ERCIM 2012](#), December 1-3 2012, Conference Centre, Oviedo, Spain
- Co-Chair of the Fifth International Conference on Soft Methods in Probability and Statistics [SMPS 2010](#), September 28 - October 1 2010, Oviedo/Mieres, Spain
- Organizer of the session *Statistics with fuzzy or incomplete data* at the [ERCIM 2009](#), October 29-31 2009, Grand Resort Hotel, Limassol, Cyprus

INVITED TALKS  
(SINCE 2015)

- *Forecasting täglicher Verkaufszahlen in Supermärkten: mögliche Methodik, der Einfluss von Promotionen und Kannibalismus-Effekte*, at the [17th Predictive Analytics Konferenz](#), October 12-13 2021, Vienna, Austria
- *Stochastic (dynamical and topological) aspects of copulas*, at the [Oberseminar Analysis, Mathematische Physik & Dynamische Systeme @TU Dortmund](#), June 29 2021, via zoom
- *Quantifying And Estimating Asymmetric Dependence*, at the [10th International Workshop on Simulation and Statistics](#), September 02-06 2019, Salzburg, Austria
- *Quantifying asymmetric dependence with the R-package qad*, at the [Symposium: Ecology — Geomorphology — Statistics](#), March 28-29 2019, Salzburg, Austria (*keynote speaker*)
- *The Markov product of copulas revisited*, at the [CMStatistics 2018 \(ERCIM 2018\)](#), December 14-16 2018, Pisa, Italy
- *On the interrelation between Kendall's  $\tau$  and Spearman's  $\rho$* , at the [International Statistics Festival Ulm](#), September 17-18 2018, University of Ulm, Germany
- *Stochastic, dynamical and topological aspects of copulas*, at the [7th Austrian Stochastics Days](#), September 13-14 2018, Vienna University of Economics and Business, Austria (*keynote speaker*)
- *Complete dependence everywhere?*, at the [Workshop on Copulas and Their Applications celebrating the 75th birthday of Roger B. Nelsen](#), July 03-05, 2017, Almería, Spain
- *Complete dependence everywhere?*, [Vienna University of Technology](#), May 08 2017, Vienna, Austria
- *Three copula-based optimization problems and an excursion*, at the [CMStatistics 2016](#), December 09-11 2016, Seville, Spain
- *On sharp inequalities between Kendall's  $\tau$  and Spearman's  $\rho$* , at the [CMStatistics 2015](#), December 12 2015, London, UK

TEACHING  
EXPERIENCE

**University of Salzburg**, Salzburg, Austria

*Full/Associate/Assistant Professor*

since 10/2013

- (Mathematical) Statistics (Lecture and Exercise for Bachelor Students in Mathematics, 2+1h, 5th Semester), 7 times
- Fractals and Chance (Lecture for Bachelor/Master Students of Mathematics, 2h), 3 times
- Applied (mathematical) Statistics (Lecture and exercise for Bachelor Students in Mathematics, 2h, 6th semester), 4 times
- PhD Seminar Statistics (for PhD Students in Mathematics, 1h), together with Arne Bathke, 14 times
- (Elementary) Regression Methods & Computational Statistics (Lecture for Master Students in Data Science, 2h), 3 times
- Dependence Modelling (Lecture and Exercise for Master and PhD Students in Mathematics, 3h), 2 times
- Markov Processes in discrete time (Lecture for Master Students in Mathematics, 2h)
- Introduction to Ergodic Theory (Lecture for Bachelor/Master Students of Mathematics, 2h)
- Research Seminar Stochastics (Seminar for Master and PhD Students in Mathematics, 1-2h)



- Statistics, Visualization and More Using R (Seminar/Computer Lab for Master- and PhD Students in Psychology and Master Students in Data Science, 2h), 4 times
- Introductory statistics for earth scientists (Lecture and exercise for Bachelor Students in Geology, 2h), 2 times
- Interpreting and Presenting Statistical Analyses (Seminar for Master Students in Data Science, 2h), together with Arne Bathke, 2 times
- Case Studies (Seminar for Master Students in Data Science, 2h), together with Nikolaus Augsten, Arne Bathke and Roland Kwitt, 2 times
- R Introduction via Applied Statistics (Seminar/Computer Lab for PhD Students in Psychology, 2h), together with Walter Gruber, 3 times
- Scientific Computing with Matlab and R (Lecture/Exercise for Bachelor Students in Mathematics, 3h), together with Lothar Banz, 3 times
- Introduction to Data Science (Lecture/exercise for Master Students Data Science, 1h), together with Nikolaus Augsten, Arne Bathke, Christian Borgelt, and Roland Kwitt, 2 times
- R for advanced users (Seminar/Computer Lab for PhD Students in Psychology, 2h), together with Walter Gruber, 2 times
- Mathematical Software R/Matlab/Mathematica (Lecture for Bachelor Students in Mathematics, 3h), together with Lothar Banz and Andreas Schröder, 2 times
- Automatic reporting with knitR (training and further education for employees of University Salzburg, 1h)
- (Basic) Mathematics for Neuroscientists (for PhD students of the DK Imaging the Mind, 1h)
- Refresher course Applied Statistics (training and further education for employees of University Salzburg, 1h)
- Stochastic modeling (Exercise for Students of Mathematics, 4th Semester, 2h), 2 times
- Mathematics I and Mathematics II (Exercise for Students of Material Sciences, 2h)

**European Centre for Soft Computing**, Mieres, Spain

*Lecturer*

2010 - 2012

- Introduction to R (Seminar/Lecture)
- R Computer Lab

**Vienna University of Technology**, Vienna, Austria

*Teaching assistant*

1999 - 2008

- Measure and Probability Theory (Exercise), 3 times
- Applied Statistics for Mathematicians (Exercise), 3 times
- Introduction to Probability Theory and Statistics (Exercise), 3 times
- Mathematics 1-3 for Electrical Engineers (Exercise), 3 times
- Introduction to Probability Theory and Statistics for Computer Scientists (Exercise), 3 times

SUPERVISION  
(PHD)

**University of Salzburg**, Salzburg, Austria

- Nicolas Dietrich (PhD student in Mathematics), since 07/2021
- Marco Tschimpke (PhD student in Mathematics), since 01/2021
- Thimo Kasper (PhD student in Mathematics), since 05/2019
- Florian Griessenberger (PhD student in Mathematics), since 11/2018
- Thomas Mroz (part-time PhD student in Mathematics), since 10/2015
- Julian von Schleinitz (PhD student in Data Science, co-supervision): *Machine Learning based Data Analysis at the Limit of Driving Dynamics*, finished 02/2022
- Noppadon Kamnitui: *Special Classes of Copulas and their Properties*, finished 10/2019
- Manuela Schreyer: *Some new results in copula theory*, finished 10/2018

SUPERVISION  
(MASTER)

**University of Salzburg**, Salzburg, Austria

- Anna-Lena Graf (Master student in Data Science), since 03/2022
- Alexander Roßmann (Master student in Mathematics): *On weak conditional convergence of copulas and related concepts*, finished 10/2020

- Nina Marie Schmitzberger (Master student in Mathematics, in collaboration with BMW group): *Dependence Modelling and Association Rule Mining for Dynamic Error Classification in the Automotive Industry*, finished 04/2021
- Marco Tschimpke (Master student in Mathematics): *Markov product invariance in classes of bivariate copulas characterized by univariate functions*, finished 12/2020
- Lukas Klaffenböck (Master student in Mathematics): *The consistency of the CART-Algorithm and a special case of random forests*, finished 12/2020
- Iris Rammelmüller (Master student in Mathematics, in collaboration with Noemi Castelletti from HelmholtzZentrum münchen): *Biological-Based Models of Carcinogenesis in the Lung from Radiation in the Eldorado cohort*, finished 09/2020
- Klemens Kurtz (Master student in Data Science, in collaboration with KTM Innovation GmbH): *Sensor failure prediction on MotoGP motorcycles*, finished 09/2020
- Simone Müller (Master student in Data Science): *Nightclub detection with image classification using convolutional neural networks*, finished 09/2019
- Marcel Steger (Master student in Data Science, in collaboration with Porsche Informatik): *Methods for Feature Selection*, finished 08/2019
- Florian Griessenberger (Master student in Mathematics): *Measure-theoretic properties of copulas & Quantification of dependence*, finished 10/2018
- Guido Friesacher (Master student in Mathematics): *Analyzing log-returns using Copulas*, finished 10/2016
- Eva Andrea Eder (student teacher in Mathematics/Biology): *Fraktale - Von der Natur inspiriert und durch die Mathematik in die heutige Zeit integriert*, finished 05/2016

#### European Centre for Soft Computing, Mieres, Spain

- Julia Lastra: *Teoría de Cópulas - Cópulas con soporte fractal*, within the Master in Advanced Mathematics (University of Almería), finished 09/2013, together with Enrique de Amo Artero
- Héctor Fernández Martínez: *Product demand prediction*, within the Master in Soft Computing and Intelligent Data Analysis, finished 07/2010, together with Ana Colubi

#### SUPERVISION (BACHELOR)

#### University of Salzburg, Salzburg, Austria

- Lea Maislinger (Bachelor student in Mathematics), *Prognosemodelle für Zeitreihen aus dem Automobilssektor*, finished 10/2021
- Stefanie Schmerbauch (Bachelor student in Mathematics): *Knowing X, knowing Y? Über asymmetrische Abhängigkeit von Zufallsvariablen*, finished 09/2021
- Martin Geroldinger (Bachelor student in Mathematics): *Zeitreihenanalysen und Prognosen: Theorie und Anwendung*, finished 09/2020
- Wanda Lauth (Bachelor student in Mathematics): *Gemischte Lineare Modelle: Theorie und Anwendung zur Beschreibung der Arbeitsmoral*, finished 01/2020
- Selina Miller (Bachelor student in Mathematics): *Regression: eine Anwendung zu 'Time Since Death Estimation' und mathematische Resultate zur Kernel-Regression*, finished 09/2019
- Florian Günther (Bachelor student in Mathematics): *Spieltheorie und Nash-Gleichgewicht*, finished 08/2019
- Nina Marie Schmitzberger (Bachelor student in Mathematics): *Visualisieren von Daten in R mit ggplot2, lineare und nichtparametrische Regression und deren Anwendung in der 'Carotisstudie'*: finished 08/2018
- Jakob Schmollgruber (Bachelor student in Mathematics): *Markov Ketten und Random Walk*, finished 01/2017
- Philipp Schwartenbeck (Bachelor student in Mathematics): *Frequentist and Bayesian parameter estimation*, finished 12/2016
- Gianna Liehr (Bachelor student in Mathematics): *Julia Mengen*, finished 11/2016
- Victoria Racher (Bachelor student in Mathematics): *Eine Anwendung multipler linearer Regression und Grundzüge der Bayes Statistik auf 'Time Since Death Estimation'*, finished 09/2016
- Lukas Helminger (Bachelor student in Mathematics): *Maximierung der Masse des Graphen/Endographen einer nicht fallenden Transformation innerhalb der Klasse der Copulae*, finished 08/2016

- Florian Griessenberger (Bachelor student in Mathematics): *Parametrische und nichtparametrische Regression und ihre Anwendung*, finished 07/2016
- Sebastian Heintze (Bachelor student in Mathematics): *Periodische Punkte und chaotische Eigenschaften von Funktionen*, finished 06/2016

SERVICE TO THE  
UNIVERSITY

- Deputy head of the department for Artificial Intelligence & Human Interaction (AIHI), since 2022
- Workgroup leader of the Data Science, Statistics and Stochastics group, department for AIHI, since 2022
- Member of the working group on quality development in teaching (AG QE Studium und Lehre), University of Salzburg, 2018-2019
- Member of the Curricularkommission for Bachelor AI, University of Salzburg, since 2022
- Member of the Curricularkommission for Mathematics, University of Salzburg, 2016 - 2019
- Member of the Curricularkommission for Data Science, University of Salzburg, 2016 - 2021
- Deputy-chairman of the appointment committee for the §99 full professorship (Stiftungsprofessur) for Data Science at the University Salzburg, 2017/2018
- Jury member for the University of Salzburg's Excellence in Teaching Award (2018)
- Referee for the Marie Andessner Preise für Diplom- und Masterarbeiten 2017
- Coaching for female students (Bachelor Mathematics), together with Bettina Sereinig
- Active member of the Math2School-Team
- Core faculty member of the Data Science Salzburg initiative

SOFTWARE

**R-packages:**

- **qmd**: A multivariate copula-based dependence measure (together with Florian Griessenberger and Robert R. Junker)
- **qad**: A copula-based measure for quantifying asymmetry in dependence and associations (together with Florian Griessenberger and Robert R. Junker)
- **Chaos game**: Plot fractal words in dimension two and three (together with Manuela Schreyer)
- **dynRB**: Calculate niche size and overlap using dynamic range boxes (together with Manuela Schreyer, Robert R. Junker, Jonas Kuppler, Arne Bathke)

THIRD-PARTY  
FUNDING

**ProSA - Prozessanalyse Ultraschallanzeigen**, University of Salzburg, Salzburg, Austria

*Project leader*

2021 -

- Development of statistical/machine learning methods for process optimization
- Supervision of 1 PhD student in Data Science/Statistics (for 3 years)
- Funded by **AMAG**

**Chaos Game (Talente: Praktika für Schülerinnen und Schüler 2020)**, University of Salzburg, Salzburg, Austria

*Supervisor*

2020

- Improving the R-package ChaosGame
- Funded by Österreichische Forschungsförderungsgesellschaft mbH

**IDA Lab Salzburg (Lab for Intelligent Data Analytics)**, University of Salzburg, Salzburg, Austria

*Director*

2020 -

- Establishment of a research center with several research teams (lead by 6 postdocs, for 5 years)
- Funded by Land Salzburg (within the WISS 2025)
- Applied research in statistics and machine learning

**Sensor failure prediction on MotoGP motorcycles**, University of Salzburg, Salzburg, Austria

*Project leader*

2019 -

- Predictive Maintenance MotoGP sensors
- Funded by **KTM Innovation GmbH**

- Wohnbaudatenbank (Analyse und GUI)**, University of Salzburg, Salzburg, Austria  
*Project leader (together with Arne Bathke)* 2019 -
- Data analytics Wohnbaudaten
  - Funded by the province of Salzburg (im Rahmen der Wohnbauforschungsmittel)
- KFZ**, University of Salzburg, Salzburg, Austria  
*Project leader (together with Roland Kwitt)* 2019 -
- Basic research in statistics and machine learning
  - Supervision of 2 fulltime PhD students in Data Science (for 3 years)
  - Funded by Porsche Informatik and Land Salzburg (within the WISS 2025)
- Successional Generation of Functional Multidiversity**, University of Salzburg, Salzburg, Austria  
*Cooperation partner of START price winner Robert R. Junker* 2018 -
- Responsible for the development of statistical methods for the quantification of asymmetric dependence and the supervision of 1 PhD student (for 3 years)
  - Der Standard article on the project (in German)
- Data Analytics in Industrial Environments**, University of Salzburg, Salzburg, Austria  
*Project leader (together with Roland Kwitt)* 2018
- Data Science: Production of the Future, Smart Sales and Customer Analytics
  - For Siemens Austria, Vienna, Austria
- Forecasting material requirements**, University of Salzburg, Salzburg, Austria  
*Project leader* 2018
- Forecasting techniques, merging of different data sources
  - For HAI - Hammerer Aluminium Industries, Ranshofen, Austria
- Data Science Endowed Professorship**, University of Salzburg, Salzburg, Austria  
*Co-applicant (together with Arne Bathke)* 2018 - 2023
- Data Science Endowed Professorship (5 years) at the University of Salzburg, funded by the province of Salzburg, the City of Salzburg and the Federation of Austrian Industries
- NIRS Analysis**, University of Salzburg, Salzburg, Austria  
*Project leader* 2017
- Analysis Near Infrared Spectroscopy (NIRS) data
  - For Universitätsklinik für Anästhesiologie, perioperative Medizin und allgemeine Intensivmedizin, Salzburg, Austria
- Analysis questionnaire data Diacerin for EBS**, University of Salzburg, Salzburg, Austria  
*Project leader* 2016
- Statistical testing for positive treatment effects
  - For Prof. Dr. Johann Bauer/EB-Haus Austria
- Prozessdatenanalyse Walzenproduktion**, University of Salzburg, Salzburg, Austria  
*Assistant project leader* 2015
- Detection of possible factors relevant for product quality
  - Development of an R-shiny app to simplify data analysis for experts
  - For Eisenwerk Sulzau-Werfen
- SIMOP II project**, European Centre for Soft Computing, Mieres, Spain  
*Project leader* 2012 - 2013
- In collaboration with a regional Spanish supermarket chain
  - Analysis/quantification of the effect of product offers to sales numbers of related products

- SIMOP I project**, European Centre for Soft Computing, Mieres, Spain  
*Project leader* 2011 - 2012
- In collaboration with a regional Spanish supermarket chain
  - Optimization of the delivery system of an Asturian supermarket chain based on the forecasting of daily sales numbers of products during offer and non-offer periods
- Cajacash-project**, European Centre for Soft Computing, Mieres, Spain  
*Operating project member* 2010
- In collaboration with cajastur (Asturian savings bank)
  - Forecasting daily withdrawn amounts at cash machines (ATMs) to improve the cash delivery system
- MICINN-project**, European Centre for Soft Computing, Mieres, Spain  
*Project leader* (since 2011) 2010 - 2012
- Project of the Spanish ministry for research and innovation
  - Basic research on flexible (linear) regression models for imprecise data
- CORRELATE.AT PROJECTS (INCOMPLETE LIST) **IPTV pattern detection**  
 For A1 2019
- Pattern detection in and classification of IPTV data
  - Graphical illustration of the main results
- HR-Analytics**  
 For ÖBB 2018
- Statistical data analysis concerning ten predefined hypotheses
  - Graphical illustration of the main results
- Statistical Data Analysis in Medicine**  
 For Landeskrankenhaus Amstetten 2016 - 2017
- Statistical data analysis concerning MAST in obese patients
- Confirmed by customer**  
 For T-Mobile Austria 2015
- Hexagonal binning and aggregation of speed measurements by customers
  - Illustration of the results
- Breitbandanalyse Bundesland Salzburg (together with SBR-net Consulting AG)**  
 For the province of Salzburg, Austria 2015
- Analysis of the status quo
  - Collection, cleaning and aggregation of all relevant data sources on a 100 × 100 meter grid
- Analysis CTU Data**  
 For Specure (as subcontractor in their project with Czech Telecommunication Office) 2015
- Plausibility checking, heavy user filtering, data aggregation and visualization
  - Implementation in R and SQL
- Opening Hours Illustration**  
 For Stadtgemeinde Baden, Austria 2015
- Analysis of the collected data and summarization of the most important findings in pretty and easy to interpret graphics
  - Publication of the results in the Baden Passion magazine

CONSULTING &  
FREELANCE  
EXPERIENCE  
(INCOMPLETE LIST)

**A1 Telekom Austria, Vienna, Austria**

2008 - 2012

- Assistance and support in the development of automated reports for ticket flows
- Data mining radius data
- Simulation and Backtesting Voice/mobile broadband with selectable geographical parameters, Implementation in R
- Development of a Q-Voice sampling plan for Austria based on the geographical distribution of the population, Implementation in R
- Data mining Scanner-data
- Assistance and support in the development of automated mag backbone reports via Sweave
- Assistance and support in the development of automated TEMS reports for all mag countries

**Allianz Insurance Austria, Vienna, Austria**

2006 - 2010

- Development of a forecasting model for losses caused by hail based on POH grid-data from ZAMG Austria, Implementation in R
- Geographical (meteorological) risk-zoning of Austria concerning natural hazards, Implementation in R
- Development of a stochastic model for flood damages given right-censored historical data, Implementation in SAS and R
- Analysis of the interrelation of empirical flood damages and the Austrian HORA project (HOchwasser Risikozonierung Austria)

EDUCATION

**University of Salzburg & Vienna University of Technology**

PD, Habilitation in Mathematics, May 2018

- Thesis title: *New perspectives and recent results in dependence modeling and copulas*

PhD, Mathematics, April 2006 (with distinction)

- Thesis title: *Fuzzy Probability Distributions*
- Adviser: Prof. Dr. R. Viertl

MSc, Mathematics, September 2001 (summa cum laude)

- Thesis title: *Iterated Function Systems and Chaos Game*
- Adviser: Prof. Dr. M. Blümlinger

APPOINTMENTS

**University of Salzburg, Salzburg, Austria**

*Full Professor*

since 12/2020

- Department of Mathematics
- Basic research, applied projects and teaching in the field of probability theory and statistics

*Associate Professor*

07/2018 - 11/2020

- Department of Mathematics
- Basic research, applied projects and teaching in the field of probability theory and statistics

*Assistant Professor (with qualification agreement)*

10/2014 - 06/2018

- Department of Mathematics
- Basic research, applied projects and teaching in the field of probability theory and statistics

*Univ.Ass. Postdoc*

10/2013 - 09/2014

- Department of Mathematics
- Basic research and teaching in the field of probability theory and statistics

**European Centre for Soft Computing**, Mieres, Spain

*Associate Researcher* 01/2011 - 07/2013

- Research Unit for Intelligent Data Analysis
- Basic research in the field of probability theory and statistics: copulas, dependence measures and statistics with imprecise data
- Applied research in statistics/data mining: applied projects with local companies, with emphasis on forecasting problems

*Postdoc Researcher* 07/2008 - 12/2010

- Research Unit for Intelligent Data Analysis
- Basic research in the field of probability theory and statistics: copulas, dependence measures and statistics with imprecise data
- Applied research in statistics/data mining: applied projects with local companies, with emphasis on forecasting problems

**Vienna University of Technology**, Vienna, Austria

*Postdoc Research Assistant* 01/2006 - 06/2008

- Institute for Statistics and Probability Theory
- Research project: Decision-making based on imprecise information, supported by the National Bank of Austria

**National Bank of Austria**, Vienna, Austria

*Employee* (part-time, 28 hours/week) 02/2004 - 12/2005

- Balance of Payments Division, Department of Statistics
- Financial Statistics Quality Control

**Hutchison H3G ‘Drei’**, Vienna, Austria

*Employee* (part-time, 20 hours/week) 09/2003 - 01/2004

- Department for Regulatory Affairs
- Invoicing and Reporting

**University of Vienna**, Vienna, Austria

*Research Assistant* (partially part-time) 11/2001 - 08/2003

- Institute for Mathematics
- Research in Ergodic Theory

LANGUAGE SKILLS Fluent in German and English  
Intermediate in Spanish  
School level in Latin