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Thomas Nagler

Research

Dependence modeling

Copulas, vine copulas, dependence in functional data, conditional dependence

Non- and semiparametric inference

Kernel and spline methods for function estimation, asymptotic theory

Computational statistics

High-performance scientific computing, statistical software

Education

2014 – present **PhD in Mathematical Statistics**, *TU Munich*.
- Supervisor: Prof. Claudia Czado, Ph.D.

2012 – 2014 **MSc Mathematical Finance and Actuarial Sciences**, *TU Munich*.
- Passed with high distinction
- Semester abroad at KU Leuven, Belgium
- Master's Thesis: "Kernel Methods for Vine Copula Estimation"

2009 – 2012 **BSc Mathematics**, *TU Munich*.
- Bachelor's thesis: "A Global Games Model for Currency Crises"

Teaching experience

Winter 2017 Seminar "Functional data analysis", TU Munich

Winter 2016 Seminar "Mathematical introduction to neural networks", TU Munich

Winter 2015 Seminar "Nonparametric statistical methods", TU Munich

2014 – present Supervision of Master's theses (5 finished, 0 current)

Research visits

Nov 2015 with Irène Gijbels and Gerda Claeskens

Department of Mathematics and Faculty of Economics and Business, KU Leuven, Leuven

Service to the community

Organized workshop "Nonparametric Copula Day", TU München, Jun 2015

Reviewed for: *Journal of the Royal Statistical Society: Series C*, *Statistica Sinica*, *Computational Statistics & Data Analysis*, *Statistics & Probability Letters*, *Computational Statistics*, *Hydrology and Earth System Sciences* , *Information Sciences*

Additional qualifications

Languages	German (mother tongue), English (fluent), Dutch (basics)
Programming	R (expert), C++ (solid), SAS, MATLAB, Python (basics)

Publications

Journal articles

Nagler, T. (2017). kdecopula: An R Package for the Kernel Estimation of Copula Densities. *Journal of Statistical Software (to appear)*.

Nagler, T., Schellhase, C., and Czado, C. (2017). Nonparametric estimation of simplified vine copula models: comparison of methods. *Dependence Modeling, 5:99–120*.

Nagler, T. and Czado, C. (2016). Evading the curse of dimensionality in nonparametric density estimation with simplified vine copulas. *Journal of Multivariate Analysis*, 151:69 – 89.

Preprints

Nagler, T. (2017a). Asymptotic analysis of the continuous convolution kernel density estimator. *arXiv:1705.05431*.

Nagler, T. (2017b). A generic approach to nonparametric function estimation with mixed data. *arXiv:1704.07457*.

Schallhorn, N., Kraus, D., Nagler, T., and Czado, C. (2017). D-vine quantile regression with discrete variables. *arXiv:1705.08310*.

Vatter, T. and Nagler, T. (2016). Generalized additive models for pair-copula constructions. *arXiv:1608.01593*.

Theses

Nagler, T. (2014). Kernel methods for vine copula estimation. *Master's thesis, Technical University of Munich*.

Other

Nagler, T. (2017). Comment on "A coupled stochastic rainfall-evapotranspiration model for hydrological impact analysis" by Minh Tu Pham et al. *Interactive comment on Hydrol. Earth Syst. Sci. Discuss.*.

Software

Nagler, T. and Vatter, T. (2017). *vinecopulib: a C++ library for vine copula modeling*. version 0.0.3, url: `https://github.com/vinecopulib/vinecopulib`.

Schepsmeier, U., Stoeber, J., Brechmann, E. C., Graeler, B., Nagler, T., and Erhardt, T. (2017). *VineCopula: Statistical Inference of Vine Copulas*. R package version 2.1.1, url: `https://github.com/tnagler/VineCopula`.

Nagler, T. (2017a). *kdecopula: Kernel Smoothing for Bivariate Copula Densities*. R package version 0.9.0, url: `https://github.com/tnagler/kdecopula`.

Nagler, T. (2017b). *kdevine: Multivariate Kernel Density Estimation with Vine Copulas*. R package version 0.4.1, url: `https://github.com/tnagler/kdevine`

Talks

May 2017 *Generalized additive models for pair-copula constructions*, Recent Developments in Dependence Modelling with Applications in Finance and Insurance, Aegina

April 2017 *Generalized additive models for pair-copula constructions*, Innovations in Insurance, Risk- and Asset Management, Munich

Sep 2016 *VineCopula: An R package (not just) for inference of vine copula models*, Salzburg Workshop on Dependence Models & Copulas, Salzburg

Jul 2016 *Evading the curse of dimensionality in nonparametric density estimation with simplified vine copulas*, Institutskolloquium des Instituts fÃijr Statistik, Ludwig-Maximilians-Universität München, Munich

May 2016 *Generalized additive models for pair-copula constructions*, Dependence Modeling in Finance, Insurance and Environmental Science, Munich

Mar 2016 *Evading the curse of dimensionality in nonparametric density estimation with simplified vines*, 12th German Probability and Statistics Days 2016, Bochum

Dec 2015 *Evading the curse of dimensionality in nonparametric density estimation with simplified vines*, 8th International Conference of the ERCIM WG on Computational and Methodological Statistics, London

Nov 2015 *Evading the curse of dimensionality in nonparametric density estimation with simplified vines*, CenStat Seminar, Universiteit Hasselt, Hasselt

Jun 2015 *Evading the curse of dimensionality in nonparametric density estimation with simplified vines*, Nonparametric Copula Day, Munich

Munich, June 29, 2017