Prof. Dr. habil. Daniel Gaigall
FH Aachen - University of Applied Sciences
Campus Jülich
Heinrich-Mußmann-Straße 1
52428 Jülich
Germany

Phone: +49 241 6009 54337
E-Mail: gaigall@fh-aachen.de

Curriculum Vitae

Personal information

Name:	Prof. Dr. habil. Daniel Gaigall
Address:	FH Aachen - University of Applied Sciences
	Campus Jülich
	Heinrich-Mußmann-Straße 1
	52428 Jülich
	Germany
Phone:	+49 241 6009 54337
E-Mail:	gaigall@fh-aachen.de
	gaigall@stochastik.uni-hannover.de
	daniel.gaigall@insurance.uni-hannover.de
Internet:	ResearchGate
	Mathematical Reviews
	zbMATH
	Mathematics Genealogy Project
	FH Aachen - University of Applied Sciences
	House of Insurance, University Hannover

Prof. Dr. habil. Daniel Gaigall
FH Aachen - University of Applied Sciences
Campus Jülich
Heinrich-Mußmann-Straße 1
52428 Jülich
Germany

Phone: +49 241 6009 54337
E-Mail: gaigall@fh-aachen.de

Education

Aug 2021 - Jun 2023:	Habilitation mathematics, Leibniz University Hannover
	Jun 2023: Habilitation conferred
Nov 2012 - Feb 2016:	Ph.D. mathematics, Leibniz University Hannover
	Feb 2016: Dr. rer. nat., grade 1.0 (or 4.0 in GPA)
Oct 2010 - Oct 2012:	Master mathematics, Leibniz University Hannover
	Oct 2012: M.Sc., grade 1.3 (or 3.7 in GPA)
Oct 2007 - Sept 2010:	Bachelor mathematics and physics, Leibniz University Hannover
	Sept 2010: B.Sc., grade 1.8 (or 3.3 in GPA)
Aug 2004 - July 2007:	High school, Hannover
	June 2007: Abitur, grade 1.1 (or 4.0 in GPA)

Independently raised peer-reviewed fundings

Nov 2012 - Feb 2016:	Ph.D. funding
	Hans-Böckler-Stiftung

Other fundings

Oct 2010 - Oct 2012:	M.Sc. funding
	Hans-Böckler-Stiftung
Oct 2007 - Sept 2010:	B.Sc. funding
	Hans-Böckler-Stiftung
Oct 2007 - Sept 2008:	B.Sc. funding
	Niedersachsenstipendium

Professorships

1. Appointed as Professor in Mathematics and Applied Mathematics (tenured) at the FH Aachen - University of Applied Sciences in March 2022

2. Appointed as Juniorprofessor in Mathematics with focus on Stochastics/Statistics (tenure track to Professor) at the University Koblenz in September 2021

Prof. Dr. habil. Daniel Gaigall
FH Aachen - University of Applied Sciences
Campus Jülich
Heinrich-Mußmann-Straße 1
52428 Jülich
Germany

Phone: +49 241 6009 54337
E-Mail: gaigall@fh-aachen.de

Professional experience

since Sept 2022:	Professor in Mathematics and Applied Mathematics
	Faculty of Technomathematics, FH Aachen - University of Applied Sciences
since Jun 2023:	Privatdozent
	Faculty of Mathematics and Physics, Leibniz University Hannover
Apr 2022 - Aug 2022:	Juniorprofessor in Mathematics with focus on Stochastics/Statistics
	Institute of Mathematics, University Koblenz
Apr 2019 - May 2023:	Adjunct lecturer
	Faculty of Mathematics and Physics, Leibniz University Hannover
Apr 2019 - Mar 2022:	Validator of the internal model
	Group Risk Management, Talanx HDI Group Hannover
Sept 2016 - Mar 2019:	Research associate
	Institute of Probability and Statistics, Leibniz University Hannover
Oct 2015 - Sept 2016:	Research associate
	Chair of Mathematical Statistics and Probability, University of Düsseldorf
Oct 2012 - Sept 2015:	Research associate
	Institute of Probability and Statistics, Leibniz University Hannover
Apr 2010 - July 2012:	Student assistant
	Institute of Probability and Statistics, Leibniz University Hannover
Feb 2010 - Mar 2010:	Internship
	Banking supervision, Bundesbank Hannover

Membership

- House of Insurance. *Leibniz University Hannover.*

Prof. Dr. habil. Daniel Gaigall
FH Aachen - University of Applied Sciences
Campus Jülich
Heinrich-Mußmann-Straße 1
52428 Jülich
Germany

Phone: +49 241 6009 54337
E-Mail: gaigall@fh-aachen.de

Research interests (selection)

- Statistics
  - Statistical tests
  - Confidence regions
  - Efficiencies
  - Goodness-of-fit
  - Design of experiments
  - Bootstrap procedures
  - Multivariate statistics
  - High dimensional statistics
  - Functional data
  - Machine learning
  - Extreme value theory
  - Regression analysis
  - Random effects
- Actuarial science and mathematical finance
  - Quantitative risk management
  - Monte-Carlo methods
  - Internal risk models
  - Valuation in life actuarial science
  - Modeling and validation in non-life actuarial science

Prof. Dr. habil. Daniel Gaigall
FH Aachen - University of Applied Sciences
Campus Jülich
Heinrich-Mußmann-Straße 1
52428 Jülich
Germany

Phone: +49 241 6009 54337
E-Mail: gaigall@fh-aachen.de

Professional skills (selection)

- Areas of business
  - Statistical consulting
  - Project management
  - Risk management
  - Internal risk models
  - Internal valuation models
  - Validation
  - Modeling
  - Life insurance
  - Non-life insurance
  - Economic Scenario Generator (ESG)
  - Biometric risks
  - Library administration
  - System administration
- Computer skills
  - Statistical programming language R
  - Document preparation system LaTeX
  - Microsoft Excel
  - Microsoft Office
  - Database management system MySQL
  - Microsoft Windows
  - Programming language C++
  - Linux
  - Apache HTTP Server
  - Computer algebra system Mathematica
  - Computer algebra systems Maxima
  - Financial software MUREX
  - Library software PS-BIBLIO

Prof. Dr. habil. Daniel Gaigall
FH Aachen - University of Applied Sciences
Campus Jülich
Heinrich-Mußmann-Straße 1
52428 Jülich
Germany

Phone: +49 241 6009 54337
E-Mail: gaigall@fh-aachen.de

Peer-reviewed journal publications

1. Gaigall, D. (2023). On the applicability of several tests to models with not identically distributed random effects. *Statistics 57*, 300–327.

2. Gaigall, D., Gerstenberg, J. (2023). Cramér-von-Mises tests for the distribution of the excess over a confidence level. *Journal of Nonparametric Statistics* 35, 529–561.

3. Baringhaus, L., Gaigall, D. (2023). A goodness-of-fit test for the compound Poisson exponential model. *Journal of Multivariate Analysis* 195, 105154.

4. Gaigall, D. (2023). Allocating and forecasting changes in risk. *Journal of Risk* 25, 1–24.

5. Ditzhaus, M., Gaigall, D. (2022). Testing marginal homogeneity in Hilbert spaces with applications to stock market returns. *TEST 31, 749–770.*

6. Gaigall, D., Gerstenberg, J., Trinh, T.T.H. (2022). Empirical process of concomitants for partly categorial data and applications in statistics. *Bernoulli 28, 803–829.*

7. Gaigall, D. (2021). Test for changes in the modeled solvency capital requirement of an internal risk model. *ASTIN Bulletin 51, 813–837.*

8. Gaigall, D. (2020). Hoeffding-Blum-Kiefer-Rosenblatt independence test statistic on partly not identically distributed data. *Communications in Statistics - Theory and Methods*, 1–23.

9. Gaigall, D. (2020). Testing marginal homogeneity of a continuous bivariate distribution with possibly incomplete paired data. *Metrika* 83, 437–465.

10. Gaigall, D. (2020). Rothman-Woodroofe symmetry test statistic revisited. *Computational Statistics & Data Analysis* 142, 1–12.

11. Baringhaus, L., Gaigall, D. (2019). On an asymptotic relative efficiency concept based on expected volumes of confidence regions. *Statistics* 53, 1396–1436.

12. Gaigall, D. (2019). On a new approach to the multi-sample goodness-of-fit problem. *Communications in Statistics - Simulation and Computation* 50, 2971–2989.

13. Ditzhaus, M., Gaigall, D. (2018). A consistent goodness-of-fit test for huge dimensional and functional data. *Journal of Nonparametric Statistics* 30, 834–859.

14. Baringhaus, L., Gaigall, D, Thiele, J.P. (2018). Statistical inference for L^2-distances to uniformity. *Computational Statistics & Data Analysis* 33, 1863–1896.

Prof. Dr. habil. Daniel Gaigall
FH Aachen - University of Applied Sciences
Campus Jülich
Heinrich-Mußmann-Straße 1
52428 Jülich
Germany

Phone: +49 241 6009 54337
E-Mail: gaigall@fh-aachen.de

15. Baringhaus, L., Gaigall, D. (2018). Efficiency comparison of the Wilcoxon tests in paired and independent survey samples. *Metrika* 81, 891–930.

16. Baringhaus, L., Gaigall, D. (2017). On Hotelling's T^2 test in a special paired sample case. *Communications in Statistics - Theory and Methods* 48, 1–11.

17. Baringhaus, L., Gaigall, D. (2017). Hotelling's T^2 tests in paired and independent survey samples - an efficiency comparison. *Journal of Multivariate Analysis* 144, 177–198.

18. Baringhaus, L., Gaigall, D. (2015). On an independence test approach to the goodness-of-fit problem. *Journal of Multivariate Analysis* 140, 193–208.

Published conference paper

- Gaigall, D. (2022). On Consistent Hypothesis Testing In General Hilbert Spaces. *Proceedings of the 4 th International Conference on Statistics: Theory and Applications (ICSTA'22) Prague, Czech Republic – July 28- 30, 2022 Paper No. 157.*

Published theses

- Gaigall, D. (2023). On selected problems in multivariate analysis. *Habilitation thesis. Gottfried Wilhelm Leibniz Universität Hannover.*

- Gaigall, D. (2016). Vergleich von statistischen Tests im verbundenen und unabhängigen Stichprobenfall. *Dissertation. Gottfried Wilhelm Leibniz Universität Hannover.*

Further theses

- Gaigall, D. (2012). Bootstrap- und Monte-Carlo-Verfahren für nichtparametrische Anpassungstests. *Master thesis. Gottfried Wilhelm Leibniz Universität Hannover.*

- Gaigall, D. (2010). Poisson-Approximation für ein Besetzungsproblem mit Kollisionen. *Bachelor thesis. Gottfried Wilhelm Leibniz Universität Hannover.*

Prof. Dr. habil. Daniel Gaigall
FH Aachen - University of Applied Sciences
Campus Jülich
Heinrich-Mußmann-Straße 1
52428 Jülich
Germany

Phone: +49 241 6009 54337
E-Mail: gaigall@fh-aachen.de

Presentations as invited speaker

1. CMStatistics 2023, Berlin, *Session: Model assessment*
2. StatMod 2023, Bucharest
3. CMStatistics 2022, London, *Session: Model assessment*
4. Seminar at the Otto-von-Guericke University Magdeburg in 2022, Magdeburg
5. CMStatistics 2021, London, *Session: Model assessment*
6. CMStatistics 2020, virtual, *Session: Model specification tests*
7. CMStatistics 2019, London, *Session: Model specification tests*
8. 4th conference of the International Society for Nonparametric Statistics 2018, Salerno, *Session: New developments in multivariate inference*
9. Seminar at the Karlsruhe Institute of Technology in 2018, Karlsruhe

Further presentations

1. 4th International Conference on Statistics: Theory and Applications, Prague
2. CMStatistics 2018, Pisa
3. CMStatistics 2016, Sevilla.
4. 12th German Probability and Statistics Days, Bochum
5. CMStatistics 2015, London
6. Ph.D. student meeting of the German Mathematical Society, Berlin
7. Ph.D. student meeting of the German Mathematical Society, Halle
8. 11th German Probability and Statistics Days, Ulm
9. Ph.D. student meeting of the German Mathematical Society, Göttingen

Prof. Dr. habil. Daniel Gaigall
FH Aachen - University of Applied Sciences
Campus Jülich
Heinrich-Mußmann-Straße 1
52428 Jülich
Germany

Phone: +49 241 6009 54337
E-Mail: gaigall@fh-aachen.de

Activities as a reviewer for peer-reviewed journals

1. Journal of Statistical Planning and Inference, Elsevier
2. Journal of Multivariate Analysis, Elsevier
3. Journal of Statistical Computation and Simulation, Taylor & Francis
4. Metrika, Springer
5. TEST, Springer
6. Annals of Actuarial Science, Cambridge University Press
7. Journal of Econometrics, Elsevier
8. Statistics, Taylor & Francis
9. Communications in Statistics - Simulation and Computation, Taylor & Francis
10. Journal of Nonparametric Statistics, Taylor & Francis
11. Statistics and Probability Letters, Elsevier
12. Conference Proceedings of the International Society of Nonparametric Statistics
13. Hacettepe Journal of Mathematics and Statistics, Hacettepe University Faculty of Science

Further activities as a reviewer

1. Mathematical Reviews, American Mathematical Society
2. National Science Foundation, Economics Program, United States government
3. Czech Science Foundation, Czech Republic
4. DAAD, Deutscher Akademischer Austauschdienst

Prof. Dr. habil. Daniel Gaigall
FH Aachen - University of Applied Sciences
Campus Jülich
Heinrich-Mußmann-Straße 1
52428 Jülich
Germany

Phone: +49 241 6009 54337
E-Mail: gaigall@fh-aachen.de

Read lectures and seminars

1. Lecture stochastics I. *FH Aachen - University of Applied Sciences.*
2. Lecture stochastics II. *FH Aachen - University of Applied Sciences.*
3. Lecture mathematical statistics I. *FH Aachen - University of Applied Sciences.*
4. Lecture statistical computing. *FH Aachen - University of Applied Sciences.*
5. Lecture combinatorial procedures in stochastics. *FH Aachen - University of Applied Sciences.*
6. Lecture statistical modeling. *University Koblenz.*
7. Lecture financial mathematics in continuous time. *Leibniz University Hannover.*
8. Lecture stochastic simulation. *Leibniz University Hannover.*
9. Lecture linear models in statistics. *Leibniz University Hannover.*
10. Lecture nonparametric testing procedures. *Leibniz University Hannover.*
11. Lecture actuarial mathematics I. *Leibniz University Hannover.*
12. Lecture actuarial mathematics II. *Leibniz University Hannover.*
13. Lecture probability and statistics A. *Leibniz University Hannover.*
14. Lecture probability and statistics B. *Leibniz University Hannover.*
15. Lecture probability and statistics for student teachers. *Leibniz University Hannover.*
16. Seminar advanced probability and statistics. *Leibniz University Hannover.*
17. Seminar Markov chains. *Leibniz University Hannover.*
18. Lecture combinatorial procedures in statistics. *Leibniz University Hannover.*

Prof. Dr. habil. Daniel Gaigall
FH Aachen - University of Applied Sciences
Campus Jülich
Heinrich-Mußmann-Straße 1
52428 Jülich
Germany

Phone: +49 241 6009 54337
E-Mail: gaigall@fh-aachen.de

Supervised Ph.D, bachelor's and master's theses

1. Model specification on Hilbert spaces. *Ph.D. thesis, FH Aachen - University of Applied Sciences.*
2. A test for Gaussianity in Hilbert spaces. *Master's thesis, Leibniz University Hannover.*
3. Modellierung von Exzessen mithilfe der verallgemeinerten Pareto-Verteilung. *Master's thesis, Leibniz University Hannover.*
4. Asymptotische Normalität von Support Vector Machines. *Master's thesis, Leibniz University Hannover.*
5. Konsistenz von Random Forests. *Master's thesis, Leibniz University Hannover.*
6. Unabhängigkeitstests bei teils diskreter und stetiger Merkmalsausprägung. *Master's thesis, Leibniz University Hannover.*
7. Konfidenzbänder für Verteilungsfunktionen. *Bachelor's thesis, Leibniz University Hannover.*
8. Testing for two states in a hidden Markov model. *Bachelor's thesis, Leibniz University Hannover.*
9. Erklärbarkeit künstlicher Intelligenz mit Shapley Additive Explanantions. *Bachelor's thesis, FH Aachen - University of Applied Sciences.*
10. The application of different resampling methods in statistics. *Bachelor's thesis, FH Aachen - University of Applied Sciences.*