Maria Grith

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Department of Econometrics
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Research Interests

Econometrics	Financial Econometrics, Time Series, Panel Data
Statistics	Nonparametric Methods, Functional Data Analysis, Machine Learning
Finance	Asset Pricing, Option pricing, Risk Management, Digital Finance

Academic Appointments

07.2017-present — **Assistant Professor**
Erasmus University Rotterdam, Econometric Institute

09.2016-06.2017
09.2015-02.2016 — **Hilda Geiringer Postdoctoral Fellow**
Humboldt University of Berlin, Ladislaus von Bortkiewicz Chair of Statistics

03.2016-08.2016 — **Postdoctoral Fellow of the Warren Center for Network and Data Sciences**
University of Pennsylvania, Department of Computer and Information Science

08.2014-08.2015 — **Caroline von Humboldt Postdoctoral Fellow**
Humboldt University of Berlin, Ladislaus von Bortkiewicz Chair of Statistics

03.2014-07.2014 — **Visiting Postdoctoral Scholar**
Singapore Management University, Lee Kong Chian School of Business

09.2013-02.2014 — **Postdoctoral Assistant**
Humboldt University of Berlin, Ladislaus von Bortkiewicz Chair of Statistics

Education

04.2008-08.2013 — **Doctorate in Economics** (*summa cum laude*)
Humboldt University of Berlin
Thesis: *Dynamics of Risk Attitudes*
Advisors: Wolfgang K. Härdle and Thorsten Hens

09.2005-03.2008 — **Master of Science**
Humboldt University of Berlin
Thesis: *Monetary and Fiscal Policy in a Two Country Model with Sticky Prices*
Advisor: Harald Uhlig

10.2000-01.2005 — **Bachelor equivalent in Economics**
West University of Timisoara
Specialization: *International Economic Relations*

Affiliations

2024-present	Institute for Digital Assets (IDA), Research Associate
2022-present	The Committee for Econometrics in the Association for Social Politics
2020-present	Erasmus School of Economics (ESE) Female Network, Coordinator
2017-present	Erasmus Research Institute of Management (ERIM), Associate Member
2017-2019	Tinbergen Institute (TI), Candidate Fellow
2015-2017	Berlin Economics Research Associates
2008-2017	Collaborative Research Center 649: Economic Risk, Berlin
2008-2017	Center for Applied Statistics and Economics, Humboldt University of Berlin

Publications and Working Papers

2024 **"Risk Premiums in the Bitcoin Market"** with Caio Almeida, Ratmir Miftachov, Zijin Wang. arXiv:2410.15195

2023 **"Functional Neural Tangent Kernel in Implied Volatility Forecasting: A Nonlinear Functional Autoregression Approach"** with Ying Chen and Hannah L. H. Lai. doi: 10.2139/ssrn.4547560, forthcoming in *Journal of Business & Economic Statistics*

2018 **"Functional Principal Component Analysis for Derivatives of Multivariate Curves"** with Heiko Wagner, Wolfgang K. Härdle and Alois Kneip. *Statistica Sinica* 28: 2469-2496

2017 **"Reference-Dependent Preferences and the Empirical Pricing Kernel Puzzle"** with Wolfgang K. Härdle and Volker Krätschmer, *Review of Finance* 21 (1): 269-298

2013 **"Shape Invariant Modeling of Pricing Kernels and Risk Aversion"** with Wolfgang K. Härdle and Juhyun Park. *Journal of Financial Econometrics* 11(2): 370-399

Work in Progress

"Spectral Factors in Corporate Bonds Market" with Twan R. Mulder and Patrick Verwijmeren

"Spectral Networks for Times Series with Scale-specific Factors Adjustment" with Petre Caraiani

"Oblique Trees for Forecasting Single-Stock Options Implied Volatility Surfaces" with Ying Chen and Hannah L. H. Lai

"Common Factors in Large Panels of Option Prices" with Paolo Santucci de Magistris, Aaron-Stefan Popa and Francesco Violante

"Group factors in single stock options" with Marina Khismatullina and Wendun Wang

"FuncBART: Bayesian Additive Regression Trees with Splits on Functional Covariates" with Eoghan O'Neill and Anastasija Tetereva

"The Block-Autoregressive Model in Non-Standard Bases" with Karel de Wit and Dick van Dijk

"Text Analysis of Public Communication Strategies during the COVID-19 Pandemic" with Great Wackerbauer, Robin Lumsdaine and Xiao Yu

Book Chapters

2011	**"Nonparametric Estimation of Risk-Neutral Densities"** (with Wolfgang K. Härdle and Melanie Schienle) in Jin-Chuan Duan, Wolfgang K. Härdle and James E. Gentle (Eds.), *Handbook of Computational Finance*. Springer Verlag, 277-305
2011	**"Parametric Estimation of Risk Neutral Density Functions"** (with Volker Krätschmer) in Jin-Chuan Duan, Wolfgang K. Härdle and James E. Gentle (Eds.), *Handbook of Computational Finance*. Springer Verlag, 253-275

Research Grants and Scholarships

2018 - 2022	Research grant: Sustainable Development Goals, Erasmus School of Economics
2015 - 2016	Research fellow grant of CRC 649 "Economic Risk", Humboldt University Berlin
04.2017	Trainee travel grant COST, European Cooperation in Science and Technology
01.2014-02.2014	HU travel grant: Strategic Partnership with Princeton University, HU Berlin
04.2012-03.2013	Leibniz Graduate Student travel grant, European Mathematical Society
08.2011	Elsevier travel award, Bernoulli Society Satellite Meeting, Dublin WSC
08.2008	Fellowship travel grant: 3rd Nobel Laureate Meeting in Economic Sciences
04.2007-06.2007	Erasmus study scholarship, Universitat Pompeu Fabra
09.2005-03.2006	Graduate studies abroad scholarship, Romanian Ministry of Education
09.2003-07.2004	Erasmus study scholarship, Saarland University

Service

Editorial Activity

2024-present	Member of the Editorial Board for Digital Finance

Referee Service

Journal of Financial Econometrics, Statistica Sinica, International Journal of Forecasting, Econometrics and Statistics, Journal of Empirical Finance, Economic Modelling, Journal of Data Science, Statistics, and Visualisation, Swiss Journal of Economics and Statistics

Departmental Service

2020-present	Department Representative for the Erasmus Data Service Center
2019 - 2023	Organizer of the external Seminars in Econometrics series
2018, 2019	Member of the recruitment committee for the Department of Econometrics

Academic Visits

04.2018	University of Pennsylvania, Economics Department
05.2017	University of Pennsylvania, Economics Department
05.2017-06.2017	Aarhus University, Department of Economics and Business Economics
10.2015-12.2015	University of Pennsylvania, Economics Department and CIS Department
09.2015	Singapore Management University, SKB Institute for Financial Economics
01.2014-02.2014	Princeton University, Operations Research and Financial Engineering
09.1012-12.2012	Princeton University, Bendheim Center for Finance
03.2012	Academia Sinica, Taipei
11.2011	University of Zurich, Institute for Banking and Finance
04.2010	Rutgers University, Department of Statistics and Biostatistics

Teaching Experience

Graduate level

Erasmus University Rotterdam

2017 - 2024 Master's thesis in Quantitative Finance (115 theses)

2017 - 2024 Financial Derivatives (Lecture), Winter

2018 - 2024 Financial Case Studies (Seminar), Winter

2019 Machine Learning (Reading Group), Summer

Bucharest University of Economic Studies

2018 - 2023 Financial Management (Short Course), Spring

2017 Introduction to Financial Derivatives (Short Course), Summer

Humboldt University of Berlin

2009, 2011, 2015 Multivariate Statistical Analysis I (Lecture), Winter

2010, 2012 Multivariate Statistical Analysis II (Lecture), Summer

2010, 2014 Statistics of Financial Markets I (Lecture and tutorial), Winter

2009, 2015 Statistics of Financial Markets II (Lecture), Summer

2015 Advanced Methods in Quantitative Finance (Lecture), Summer

2012, 2013 Numerical Introductory Course (Seminar), Winter

2011 Non- and Semiparametric Modeling (Lecture), Winter

Charles University Prague

2011 Introduction to Nonparametric Statistical Methods (Short course), Winter

Hertie School of Governance

2008 Applied Economic Analysis (Tutorial), Winter, Teaching assistant to Professor Henrik Enderlein

Undergraduate level

Erasmus University Rotterdam

2017 - 2024 Bachelor's thesis in Econometrics and Operations Research (75 theses)

2021 - 2023 Probability Theory, Spring

Humboldt University of Berlin

2011, 2008 Statistics I (Tutorial), Summer, Teaching assistant to Professor Brenda Lopez-Cabrera and to Dr. Sigbert Klinke

2008 Statistics II (Tutorial), Winter, Teaching assistant to Professor Ostap Okhrin

University of Havana

2014, 2015 Introduction to Financial Mathematics (Lecture and Tutorial), Summer Course

PhD level

2022 - 2024 *External supervisor*: Hannah L. H. Lai (National University of Singapore), Machine Learning in Functional Data, Main supervisor Ying Chen, (expected to defend in 2025)

2019 - 2023 *Co-supervision*: Karel de Wit (Erasmus University Rotterdam), Spectral Methods for Time Series, Supervisor Dick van Dijk, (not defended)

2024 *External referee*: Martin Hronec (Charles University in Prague), Asset Pricing and Portfolio Selection via Machine Learning, Supervisor Jozef Barunik, (expected to defend in 2025)

Conference Presentations and Invited Talks

2024	AI in Digital Finance, Online seminars, Institute of Digital Assets
	Statistics and Machine Learning in Finance, Seminar series, Oxford
	Financial Econometrics Meets Machine Learning, Online seminar series
	Frontiers of Functional Data Analysis, IMS/NUS, Singapore
	IAAE Annual Conference, Thessaloniki
	Society for Financial Econometrics (SoFiE) Annual conference, Rio de Janeiro
	Quantitative Finance and Financial Econometrics (QFFE), Marseille
	Frontiers in Decentralized Finance (DeFi) workshop, Vienna
	Financial Econometrics Conference (FEC), Toulouse
	Statistics and Data Science seminar at QMUL, Mathematical Sciences, London
	The Meeting of the Committee for Econometrics in Müggelsee, Berlin
2023	CFE/CSM, Berlin
	Seminar in Economics, University of Essex
	COMPSTAT, London
	Statistics of Machine Learning, Charles University, Prague
	IAAE Annual Conference, Oslo
	2nd Workshop on High-Dimensional Data Analysis, Madrid
2022	CFE/CSM, London
	Fifteenth Annual Risk Management Conference, Singapore
	The Meeting of the Committee for Econometrics, Hegne
	Mathematical Statistical Seminar, Weierstrass Institute, Berlin
2018	The 2nd International Conference on Econometrics and Statistics, Hong Kong
	China Meeting of the Econometric Society, Shanghai
	Symposium on Financial Engineering and Risk Management, Shanghai
	Netherlands Econometric Study Group, Amsterdam
	Erasmus Statistics Day, Rotterdam
2017	Economics, Econometrics & Finance Seminar, University of Groningen
2017	ERMAS, Babes-Bolyai University, Cluj-Napoca
	Brown Bag Seminar, Technical University Dresden
	Bucharest International Conference on Business Excellence, ASE Bucharest
	Vienna-Copenhagen Conference on Financial Econometrics, U. Vienna
2016	German Statistical Week, University of Augsburg
2015	Lunch Econometrics Seminar, University of Pennsylvania, Economics Dept.
2014	Computational and Financial Econometrics Conference, University of Pisa
	Jours fixe, Collaborative Research Center 649, Berlin
	NUS-Stanford Workshop in Quantitative Finance, NUS
2013	Princeton-Humboldt Conference, Princeton University
	Risk Preferences and Decisions under Uncertainty, CRC 649 Workshop, Berlin

2012	Texas A&M, Institute for Applied Mathematics and Computational Science
	Financial Engineering Seminar, Stevens Institute for Technology
	Wilks Statistics Seminar, Princeton University, ORFE
	Mathematical Finance Seminar, Columbia University, Department of Statistics
	Fall Seminar, Rutgers University, Department of Statistics and Biostatistics
	Fall Seminar, Indiana University Bloomington, Economics Department
	Märkische Schweiz Summer School on Statistics in Finance and Insurance
	Berlin-Dortmund Workshop, Financial Risk Measurement, Kloster Dürbeck
	National Taiwan University, Graduate Institute of Statistics
	National Chiao Tung University, Institute of Statistics
2011	Humboldt-Princeton Conference, Humboldt University of Berlin
	Statistical Analysis of Financial Data Workshop, Opatija, Croatia
	German Statistical Week, Leipzig University
	Dynamic Statistical Models, ISI-satellite meeting, University of Copenhagen
	Pricing Kernel Puzzle Workshop, University of Konstanz
	Frontiers of Finance Conference, University of Warwick
2010	Symposium on Computational Finance, National University of Singapore
2009	Romanian-German Symposium on Mathematics, University of Sibiu

Scientific Events Organized

2024	Financial Econometrics meets Machine Learning (FinEML), Lugano
2023	Financial Econometrics meets Machine Learning (FinEML), Rotterdam
2019	Machine Learning for Economics and Econometrics, EI Workshop, Rotterdam
2018	Machine Learning and Causal Inference, EI Workshop, Rotterdam
2016	Hilda Geiringer Lecture, Collaborative Research Center 649, Berlin
2013	Field Days 2013: Experiments Outside the Lab, IZA/WZB Workshop, Berlin
	Risk Preferences and Decisions under Uncertainty, CRC 649 Workshop, Berlin
2011	Humboldt-Princeton Conference, Humboldt University of Berlin
2010	Distinguished Lecture Series, Humboldt University of Berlin
2008	Hermann Otto Hirschfeld Lecture, Humboldt University of Berlin

Workshops and Trainings

2015	OMI-SoFiE Financial Econometrics Spring School, Brussels
2013	Oberwolfach Workshop, Mathematical Statistics of Partially Identified Objects
2012	OMI-SoFiE Financial Econometrics Summer School, Oxford
2009	Oberwolfach Seminar, Semiparametric and Nonparametric Regression
2007	Junior Workshop in Macroeconomics, Choosing and Processing Information
2007	Barcelona LeeX Experimental Economics Summer School in Macroeconomics

Languages

Romanian (native), English (fluent), German (fluent), French (intermediate)

References

Prof. Caio Almeida
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