Curriculum Vitae – Peter Nicholas Krämer

Institut für Numerische Simulation
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Research interests

Uncertainty quantification, Bayesian statistics, probabilistic numerics

Education

2016– **MSc Mathematics**, University of Bonn
Thesis: Gaussian Processes and Uncertainty Quantification
Thesis supervisor: Priv.-Doz. Dr. Christian Rieger
Current grade average: 1.1 (∼ First class honors, GPA: 4.0)
Expected graduation: May 2019

2013–16 **BSc Mathematics in Business and Economics**, University of Mannheim
Thesis: Numerisches Lösen von Eigenwertproblemen (German; English title: Numerical Solution of Eigenvalue Problems)
Thesis supervisor: Prof. Dr. Oliver Kolb
Final grade: 2.0 (∼ Upper second class honors, GPA: 3.0)

Research and Teaching Experience

2017– **Part-time research assistant**, Institute for Numerical Simulation, University of Bonn
Area: scattered data approximation, radial basis functions, programming
Topics: localised bases for kernel spaces, divergence-free radial basis function kernels, meshfree methods for partial differential equations on surfaces
Supervisor: Priv.-Doz. Dr. Christian Rieger

2017 **Tutor**, Analysis for Computer Scientists, University of Bonn
Exercise classes and marking of ∼25 exercise sheets (both weekly), marking of the final exams

2016 **Tutor**, Linear Algebra II, University of Mannheim
Exercise classes and marking of ∼25 exercise sheets (both weekly)

2015–16 **Tutor**, Linear Algebra I, University of Mannheim
Exercise classes and marking of ∼25 exercise sheets (both weekly)

Programming Skills

2017– **Python:** programming language of choice since starting MSc; used at work at the Institute for Numerical Simulation; used for numerical simulations in MSc thesis

2015– **C/C++:** programming course in C as part of BSc degree; used in various lectures in Bonn; used for work at the Institute for Numerical Simulation

2014– **MATLAB:** programming language of choice during BSc; used for numerical simulations in BSc thesis

2014– **R:** used for statistics and econometrics lectures during undergraduate studies

Language Skills

2010–13 **Spanish:** 3 years of Spanish at school (∼B1)

2004– **English:** 8 years of English at school, English lectures in Mannheim, MSc degree in English (∼C1/C2)

1994– **German:** native speaker

Attended Events

2018 Winter school on hierarchical matrices, Kiel University, Kiel, February 26 – March 2

2018 Minicourse on the Navier-Stokes equations, Institute of Mathematics of the Czech Academy of Sciences, Prague, February 12–16

2017 Summer school on mathematical modeling in the life sciences, Centro De Giorgi, Pisa, September 13–15

Talks

2018 Gaussian process approximations in Bayesian inverse problems, post-graduate seminar, Institute for Numerical Simulation, University of Bonn

2018 Stochastic collocation for partial differential equations with random coefficients, graduate seminar "High-Dimensional Approximation and Uncertainty Quantification", University of Bonn (graded; see below)

2018 H2Lib – A short introduction, post-graduate seminar, Institute for Numerical Simulation, University of Bonn

2018 Geodesic regression on Riemannian manifolds, graduate seminar "Shape Spaces and Shape Representations", University of Bonn (graded; see below)

2017 Robust optimization and sparse inverse covariance selection, graduate seminar "Numerical Methods in Statistical Simulation and Machine Learning", University of Bonn (graded; see below)

Graduate Courses and Grades Received

Numerics: Scientific Computing I (1.0), Numerical Algorithms (1.0), Numerical Simulation: Optimal Control and Reinforcement Learning (1.0), Practical Lab in Computational Finance (1.0), Numerical Methods in Uncertainty Quantification (1.0), Optimisation (1.7, in Mannheim)

Probability: Introduction to Stochastic Analysis (1.0), Stochastic Simulation (2.3, in Mannheim), Financial Mathematics (2.0, in Mannheim)

Analysis: Functional Analysis and Partial Differential Equations (2.0), Nonlinear Partial Differential Equations II (1.0), Global Analysis (2.7), Dynamical Systems (1.3, in Mannheim), Functional Analysis (1.0, in Mannheim)

Graduate Seminars: Numerical Methods in Statistical Simulation and Machine Learning (1.0), Shape Spaces and Shape Representations (1.0), High-Dimensional Approximation and Uncertainty Quantification (1.0)

Internships

2015 **Consultancy**, Performance Improvement & Transformation, avantum consult AG, Düsseldorf, June – August

2015 **Accountancy/Consultancy**, Financial Reporting, RINKE Treuhand GmbH Wirtschaftsprüfungsgesellschaft Steuerberatungsgesellschaft, Wuppertal, June – July

Memberships

2017– Society for Industrial and Applied Mathematics (SIAM)

Academic References

Priv.-Doz. Dr. Christian Rieger
Institute for Numerical Simulation
University of Bonn
rieger@ins.uni-bonn.de

Prof. Thomas Hangelbroek
Department of Mathematics
University of Hawai'i at Mānoa
hangelbr@math.hawaii.edu