

Maximilian A. März

Curriculum Vitae

Applied Functional Analysis Group
Technische Universität Berlin
✉ maerz@math.tu-berlin.de

Education

- since 05/2016 **PhD Student**, Technical University Berlin.
Advisor: Prof. Dr. Gitta Kutyniok
- 04/2013 – 05/2016 **Studies in Mathematics (M. Sc.)**, Technical University Berlin.
Final grade: 1.0
- 08/2014 – 06/2015 **Exchange Student**, Emory University, Atlanta.
Course work, research project about Quantitative Susceptibility Mapping
- 10/2009 – 09/2012 **Studies in Mathematics (B. Sc.)**, University of Konstanz.
Final grade: 1.0 with distinction
- 10/2007 – 03/2008 **Early Enrollment at TU Kaiserslautern**, Kaiserslautern.
Studies in mathematics while being still at school
- 09/1999 – 06/2008 **Kreisgymnasium Hochschwarzwald**, Titisee-Neustadt.
Higher education entrance qualification, Final Grade: 1.1

Professional Experience

- since 05/2016 **Scientific Employee**, Technical University Berlin.
Applied Functional Analysis Group
- 10/2015 – 05/2016 **Student Research Assistant**, TU Berlin.
Applied Functional Analysis Group
- 10/2013 – 05/2016 **Student Teaching Assistant**, TU Berlin.
Tutor, Analysis I and II for Engineers
- 10/2012 – 03/2013 **Internship at Reinsurance Company Munich Re**, Munich.
Corporate Pricing and IT
- 10/2011 – 08/2012 **Student Teaching Assistant**, University of Konstanz.
Tutor, Analysis I and II
- 09/2008 – 07/2009 **Civilian Service**, Freiburg.
Radiology section of a hospital

List of Publications

- T. A. Bubba, G. Kutyniok, M. Lassas, M. März, et al. “Learning The Invisible: A Hybrid Deep Learning-Shearlet Framework for Limited Angle Computed Tomography”. arXiv preprint: 1811.04602. 2018
- C. Lazarus, M. März, and P. Weiss. “Correcting the ADC effects in MR image reconstruction”. Submitted. 2018
- G. Kutyniok, M. Genzel, and M. März. “ ℓ^1 -Analysis Minimization and Generalized (Co-)Sparsity: When Does Recovery Succeed?” arXiv preprint: 1710.04952. 2017

- H. Boche, G. Caire, R. Calderbank, M. März, et al., eds. *Compressed Sensing and its Applications. Second International MATHEON Conference 2015*. Applied and Numerical Harmonic Analysis. Birkhäuser-Springer, 2017
- G. Kutyniok, J. Ma, and M. März. “Mathematical Methods in Medical Image Processing”. In: *Quantification of Biophysical Parameters by Medical Imaging*. Ed. by I. Sack and T. Schäffter. Springer, 2017
- T. A. Bubba, M. März, Z. Purisha, M. Lassas, et al. “Shearlet-based regularization in sparse dynamic tomography”. In: *Wavelets and Sparsity XVII, Proc. SPIE 10394*. Ed. by Y. M. Lu, D. Van De Ville, and M. Papadakis. 2017
- J. Ma, M. März, S. Funk, J. Schulz-Menger, et al. “Shearlet-based Compressed Sensing for fast 3D cardiac MR imaging using iterative reweighting”. In: *Phys. Med. Biol* (to appear)
- J. Ma and M. März. “A multilevel based reweighting algorithm with joint regularizers for sparse recovery”. arXiv preprint: 1604.06941. 2016
- M. März and L. Ruthotto. “Combined Background Field Removal and Reconstruction for Quantitative Susceptibility Mapping”. In: *Bildverarbeitung für die Medizin 2016*. Ed. by T. Tolxdorff, T. M. Deserno, H. Handels, and H.-P. Meinzer. Springer Vieweg, 2016, pp. 8–13

Theses

- *Compressed Sensing using Block Sampling Strategies and the Analysis Formulation*. Master’s Thesis, Supervisor: Prof. Dr. Gitta Kutyniok. 2016
- *Abbildungsgrade und Anwendung auf nichtlineare Gleichungen*. Bachelor’s Thesis, Supervisor: Prof. Dr. Robert Denk. 2012

Honors and Awards

- 11/2016 **Award “Best Presentation”**.
Dies Mathematics, TU Berlin
- 10/2014 **Acceptance at Berlin Mathematical School**.
Graduate school for mathematics
- 03/2014 **Fulbright Grant**.
Travel scholarship for exchange year at Emory University, Atlanta
- since 04/2013 **ReMember**.
Student loyalty program for talented interns at Munich Re

Invited Talks

- 11/2018 **5th International Workshop on Compressed Sensing Theory and its Applications to Radar, Sonar and Remote Sensing**, Siegen, Germany.
- 06/2018 **OSA Imaging and Applied Optics Congress**, Orlando, USA.
- 06/2018 **Workshop in Microlocal Analysis**, London, UK.
- 03/2018 **Joint Annual Meeting of DMV-GAMM**, Munich, Germany.
- 11/2017 **Seminar Mathématiques de l’apprentissage**, Toulouse, France.

- 10/2017 **CMO-BIRS Workshop on Mathematical Advances in Electron Microscopy**, Oaxaca, Mexico.
- 12/2017 **Inverse Days**, Kuopio, Finland.
- 03/2015 **Scientific Computing Seminar at Emory University**, Atlanta, USA.

Scientific Talks and Workshops

- 03/2018 **Oberwolfach Workshop on Applied Harmonic Analysis and Data Processing**, Oberwolfach, Germany.
Invited participant
- 02/2018 **Rhein-Ruhr-Workshop**, Bestwig, Germany.
Conference presentation
- 06/2017 **Signal Processing with Adaptive Sparse Structured Representations**, Lisbon, Portugal.
Conference participant
- 07/2016 **CoSIP Colloquium**, Aachen, Germany.
Short presentation
- 03/2016 **Joint Annual Meeting of DMV-GAMM**, Braunschweig, Germany.
Conference presentation
- 03/2016 **Bildverarbeitung für die Medizin**, Berlin, Germany.
Conference presentation

Research Visits

- 22/05 – 01/06/2018 **Institut de Mathématiques de Toulouse**.
Invited by Claire Boyer
- 05/03 – 16/03/2018 **Institut de Mathématiques de Toulouse**.
Invited by Pierre Weiss
- 06/11 – 23/11/2017 **Institut de Mathématiques de Toulouse**.
Invited by Pierre Weiss
- 28/04 – 04/05/2017 **Institut de Mathématiques de Toulouse**.
Invited by Pierre Weiss
- 04/03 – 01/05/2017 **Department of Mathematics, University of Helsinki**.
Invited by Samuli Siltanen
- 21/02 – 04/03/2017 **Institut de Mathématiques de Toulouse**.
Invited by Pierre Weiss
- 04/01 – 16/01/2017 **Institut de Mathématiques de Toulouse**.
Invited by Pierre Weiss
- 11/12 – 18/12/2016 **Department of Mathematics, University of Helsinki**.
Invited by Samuli Siltanen
- 04/10 – 14/10/2016 **Institut de Mathématiques de Toulouse**.
Invited by Pierre Weiss

Academic Activities

- 29/11 – 01/12/2017 **Organizer of CoSIP Intense Course on Deep Learning.**
Organization of a winter school together with Gitta Kutyniok and Rudolf Mathar
- 07/12 – 09/12/2016 **Organizer of CoSIP Winter Retreat.**
Organization of a workshop together with Holger Boche, Gitta Kutyniok and Rudolf Mathar
- Ongoing **Review Work.**
IEEE Transactions on Information Theory
SIAM Journal on Imaging Sciences
Acta Applicandae Mathematicae

Extra Curricular Activities

- 10/2010 – 03/2013 **Student Council**, University of Konstanz.
Administrative work
- 10/2011 – 10/2012 **Student Representative**, University of Konstanz.
Various commissions of the mathematical faculty
- 03/2012 – 07/2012 **Appointment Committee**, University of Konstanz.
Stochastics professorship

Teaching Experience

- Winter Term 2016/17 **Differential Equations for Engineers**, TU Berlin.
Tutor
- Summer Term 2016 **Functional Analysis I**, TU Berlin.
Tutor for lecture of Prof. Gitta Kutyniok
- Winter Term 2014/15 **Analysis II for Engineers**, TU Berlin.
Tutor
- Summer Term 2014 **Analysis II for Engineers**, TU Berlin.
Tutor
- Winter Term 2013/14 **Analysis I for Engineers**, TU Berlin.
Tutor
- Summer Term 2012 **Analysis II**, University of Konstanz.
Tutor for lecture of Prof. Reinhard Racke
- Winter Term 2011/12 **Analysis I**, University of Konstanz.
Tutor for lecture of Prof. Reinhard Racke

Languages

- English **Fluent** (TOEFL 113)
- Latin **Proficiency certificate** (1.0)
- French **Good knowledge**