

Contact and Personal Data

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Education

since 2014	Doctoral Student, Universität Bremen (Prof. Emily J. King)
2012–2014	MSc in Mathematics, Technische Universität Berlin
2009–2012	BSc in Cognitive Science, Universität Osnabrück
2009–2011	BSc in Mathematics and Computer Science, Universität Osnabrück
2008–2009	Studies in Mathematics, Technische Universität Wien

Academic Working Experience

since 2014	Research Assistant, Universität Bremen (Prof. Emily J. King)
2012-2014	Student Research Assistant, Technische Universität Berlin (Prof. Gitta Kutyniok)

Publications

1. L.-A. Duflot, R. Reisenhofer, B. Tamadazte, N. Andreff and A. Krupa.
Wavelet and Shearlet-based Image Representations for Visual Servoing.
To appear in The International Journal of Robotics Research.
2. K. Haleh, J. Abdolrahim, S. Dahlke, R. Reisenhofer and T. Siyavash.
Seismic Channel Edge Detection Using 3D Shearlets - A Study on Synthetic and Real Channelized 3D Seismic Data.
To appear in Geophysical Prospecting.
3. L. Bungert, D. A. Coomes, M. Ehrhardt, J. Rasch, R. Reisenhofer and C. Schönlieb.
Blind Image Fusion for Hyperspectral Imaging with the Directional Total Variation.
Inverse Problems, vol. 34(4), 044003, 2018.
4. R. Reisenhofer, S. Bosse, G. Kutyniok and T. Wiegand.
A Haar Wavelet-Based Perceptual Similarity Index for Image Quality Assessment.
Signal Processing: Image Communication, vol. 61, 33–43, 2018.
5. R. Reisenhofer, E. J. King and J. Kiefer.
Shearlet-Based Detection of Flame Fronts.
Experiments in Fluids, vol. 57(3), 41:1–41:14, 2016.
6. G. Kutyniok, W.-Q Lim and R. Reisenhofer.
ShearLab 3D: Faithful Digital Shearlet Transforms based on Compactly Supported Shearlets.
ACM Transactions on Mathematical Software, vol. 42(1), 5:1–5:42, 2016.
7. E. J. King, R. Reisenhofer, J. Kiefer, W.-Q Lim, Z. Li and G. Heygster.
Shearlet-Based Edge Detection: Flame Fronts and Tidal Flats.
Applications of Digital Image Processing XXXVIII (Andrew G. Tescher, ed.), SPIE Conference Series, vol. 9599, 2015.

Talks

1. *Blind Image Fusion for Hyperspectral Imaging with Directional Total Variation.*
GAMM Jahrestagung 2018. Munich (March 2018).
2. *A Simple Model for Assessing Perceptual Image Quality.*
Colloquium of the Institute of Cognitive Science. Universität Osnabrück (October 2017).
3. *Super-resolution for hyperspectral remote sensing images with parallel level sets.*
Applied Inverse Problems 2017. Hangzhou, China (May 2017).
4. *Wavelet and Shearlet-Based Image Representations for Visual Servoing.*
38th Northern German Colloquium on Applied Analysis and Numerical Mathematics. Hamburg University of Technology (May 2017).
5. *Multiscale Image Representations for Ultrasound Visual Servoing.*
GAMM Jahrestagung 2017. Weimar (March 2017).
6. *Edge, Ridge and Blob Detection with Symmetric Molecules.*
NWC Seminar. Norbert Wiener Center, University of Maryland, College Park, MD, USA (February 2017).
7. *A Haar Wavelet-Based Similarity Measure for Image Quality Assessment.*
Laboratory for Computational Vision Group Seminar. New York University, NYC, USA (January 2017).
8. *Edge, Ridge and Blob Detection with Symmetric Molecules.*
AFG Group Seminar. TU Berlin (January 2017).
9. *A Haar Wavelet-Based Similarity Measure for Image Quality Assessment.*
Applied Functional Analysis Group Reunion 2016. TU Berlin (August 2016).
10. *A Haar Wavelet-Based Similarity Measure for Image Quality Assessment.*
Workshop on Mathematical Imaging and Emerging Modalities. Universität Osnabrück (June 2016).
11. *Complex Shearlet-Based Detection of Flame Fronts.*
First Applied Mathematics Symposium Münster. Universität Münster (September 2015).
12. *Digital Shearlet Transforms and their Applications.*
Oberseminar, Applied Analysis Group. Universität Osnabrück (May 2015).
13. *Complex Shearlet Transform and Applications to Edge and Line Detection.*
36th Northern German Colloquium on Applied Analysis and Numerical Mathematics. Jacobs University, Bremen (April 2015).
14. *The Complex Shearlet Transform and Applications to Image Quality Assessment and Edge Detection.*
Rainbow Course. Interdisciplinary College 2015, Günne at Lake Möhne (March 2015).

Teaching Experience

Spring 2017	Analysis II (Tutor)
March 2016	Spring school lecture series “Mathematical Transforms and Sparsity: Harmonic Analysis and its Applications” at Interdisciplinary College 2016 (4 lectures, joint with Emily J. King)

Poster Presentations

1. *Image Processing via Harmonic Analysis – Perceptual Image Quality Assessment, Visual Servoing and Feature Detection*. GAMM Jahrestagung 2018, Munich (March 2018).
2. *Edge, Ridge and Blob Detection with Symmetric Molecules*. GAMM-MSIP Workshop on Mathematical Signal Processing and Data Analysis, Bremen (September 2017).
3. *Edge, Ridge and Blob Detection with Symmetric Molecules*. GAMM Jahrestagung 2017, Weimar (March 2017).
4. *Edge, Ridge and Blob Detection with Symmetric Molecules*. February Fourier Talks 2017, University of Maryland, College Park, MD, USA (February 2017).
5. *Complex Shearlet-Based Edge and Ridge Detection*. Winter School on Advances in Mathematics of Signal Processing, Hausdorff Research Institute for Mathematics, Bonn (January 2016).
6. *The Complex Shearlet Transform and Applications to Image Quality Assessment and Edge Detection* (joint with S. Bosse, E. J. King and G. Kutyniok). Interdisciplinary College 2015, Günne at Lake Möhne (March 2015).
7. *ShearLab 3D: Faithful Digital Shearlet Transforms based on Compactly Supported Shearlets* (joint with G. Kutyniok and W.-Q Lim). Matheon Workshop 2013 Compressed Sensing and its Applications, TU Berlin (December 2013).
8. *ShearLab 3D: Faithful Digital Shearlet Transforms based on Compactly Supported Shearlets* (joint with G. Kutyniok and W.-Q Lim). GAMM Workshop Advances in Mathematical Image Processing (AIP), Annweiler am Trifels (October 2013).
9. *ShearLab 3D: Faithful Digital Shearlet Transforms based on Compactly Supported Shearlets* (joint with G. Kutyniok and W.-Q Lim). CIMPA 2013 New Trends in Applied Harmonic Analysis, Mar del Plata, Argentina (August 2013).
10. *Localizing Filamentary Structures in 2D Point Clouds Using Beamlet-Based Approximation Networks* (joint with G. Kutyniok and J. Lemvig). Interdisciplinary College 2012, Günne at Lake Möhne (March 2012).

Awards and Grants

2017	DAAD Kongressreisen Stipendium (Travel grant for the Applied Inverse Problems 2017 conference in Hangzhou, China.)
2017	Best Poster Award, February Fourier Talks 2017.
2015	GAMM Junior Fellow (Deputy Speaker of the GAMM Juniors in 2017 and Speaker in 2018).
2012–2014	Berlin Mathematical School (BMS), Phase I Student.
2009	Landesstipendium Niedersachsen.
2008	Fourth place in MIROSOT FIRA Robosoccer World Cup with team Leonding Micros, Qingdao, China.
2007	Fred Margulies Award (Sponsored by the IFAC Austria).

Invited Research Visits

2017	Norbert Wiener Center for Harmonic Analysis and Applications, University of Maryland, College Park, MD, USA (Jan 30 to Feb 24)
2016	FEMTO-ST Institute/AS2M Department, Besançon, France (Sep 12 to Sep 16)
2016	Hausdorff Trimester Program Mathematics of Signal Processing, Hausdorff Institute, Bonn, Germany (Jan 10 to Jan 22)
2015	Panorama of Mathematics Conference, Hausdorff Center for Mathematics, Bonn, Germany (Oct 20 to Oct 23)

Organization of Meetings and Workshops

2018	GAMM Young Researchers' Minisymposium "Mathematical Theory of Deep Learning" (joint with P. Petersen). GAMM Jahrestagung 2019, Vienna, Austria (March 19).
2017	GAMM Juniors Fall Meeting (joint with M. Todt). TU Wien, Vienna, Austria (Sep 27 to Sep 29).
2017	Workshop "Mathematical Signal Processing and Data Analysis" (joint with E. J. King, Y. Cordero and F. Weilandt). Universität Bremen, Bremen (Sep 18 to Sep 20).

Membership in Professional Societies

- Gesellschaft für Angewandte Mathematik und Mechanik (GAMM)
 - GAMM Juniors (Deputy Speaker in 2017, Speaker in 2018)
 - GAMM Activity Group on Mathematical Signal- and Image Processing

Reviewing Work

- International Journal of Wavelets, Multiresolution and Information Processing (World Scientific)
- Journal of Mathematical Imaging and Vision (Springer)
- Multidimensional Systems and Signal Processing (Springer)
- International Journal of Aerospace Engineering (Hindawi)

Skills

Computation	MATLAB, Java, C#, C, C++, Python
Languages	German, English (fluent)