

SEBASTIAN WEINGÄRTNER, PH.D.

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Faculty of Applied Science
Delft University of Technology
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DATE OF BIRTH May 28th, 1991
NATIONALITY Germany

ACADEMIC APPOINTMENTS

07/2019 **DELFT UNIVERSITY OF TECHNOLOGY** *Delft, The Netherlands*
- **Assistant Professor**, Tenure-track at the Department of Imaging Physics

EDUCATION

06/2017 **STANFORD UNIVERSITY** *Stanford, CA, USA*
- 12/2019 **HHMI Life Sciences Research Foundation Fellow** with Prof. Tirin Moore,
Ph.D. at the Department of Neurobiology
• Convolutional sparse signal processing for closed loop neuroscience

06/2016 **UNIVERSITY OF MINNESOTA** *Minneapolis, MN, USA*
- 05/2017 **Post-Doc** with Prof. Mehmet Akçakaya, Ph.D. at the Center for Magnetic Resonance
Research
• Functional viability imaging using magnetic resonance imaging

03/2015 **RUPRECHT-KARLS-UNIVERSITY HEIDELBERG** *Mannheim, Germany*
- 06/2016 **Post-Doc** with Prof. Dr. rer. nat. Lothar R. Schad at the lab for Computer Assisted
Clinical Medicine
• Quantitative and volumetric cardiac magnetic resonance imaging

01/2011 **HARVARD MEDICAL SCHOOL** *Boston, MA, USA*
- 04/2014 **RUPRECHT-KARLS-UNIVERSITY HEIDELBERG** *Mannheim, Germany*
Dr. sc. hum. (equivalent Ph.D.) with Prof. Reza Nezafat, Ph.D. and Prof. Dr.
rer. nat. Lothar R. Schad jointly at the Cardiac MR Center and the lab for Computer
Assisted Clinical Medicine
• Quantitative myocardial tissue characterization using MRI: Development, im-
plementation and mathematical analysis of novel imaging and reconstruction
methods

10/2006 **JULIUS-MAXIMILIANS-UNIVERSITÄT,** *Würzburg, Germany*
- 01/2011 **Dipl.-Inform. (equivalent M.Sc. in Computer Science),**
Grade: »very good«, best grade in every exam
• *Master-Thesis*: “Networked Control Systems in Medical Applications at the
Example of Hormonal Contraception”

SELECTED HONORS AND AWARDS

03/2019 Best Paper Award Finalist, *IEEE Brain Initiative*
06/2018 Best Abstract Award, *Cardiac MR Study Group, International Society for Magnetic
Resonance in Medicine*
06/2018 Junior Fellow, *International Society for Magnetic Resonance in Medicine*
10/2017 SMRA Trainee Award, *Society for Magnetic Resonance Angiography*

- 09/2017 - 09/2020 Life Sciences Research Foundation Fellowship (24 awardees are chosen out of over 1000 applications across all fields of life sciences by a board comprised of 25 distinguished researchers, including 9 Nobel laureates), *Life Sciences Research Foundation, Howard Hughes Medical Institute*
- 03/2017 Inventor Recognition, *University of Minnesota*
- 07/2016 Romius Research Award, *Roche GmbH*
- 01/2016 Regional Scholarship Award, *Society for Cardiovascular Magnetic Resonance*
- 11/2015 2nd Price Gorter Award, *German Society for Medical Physics*
- 02/2015 Outstanding Teacher Award, *ISMRM/SCMR Joint Workshop*
- 05/2013 - 06/2018 Multiple Summa and Magna Cum Laude Abstract Awards, *International Society for Magnetic Resonance in Medicine*
- 05/2013 2nd Price Stefan Fischer Award (Pulse-Programming), *Philips Healthcare*
- 11/2012 Semi-Finalist W.S. Moore Young Investigator Award (top six translational papers), *International Society for Magnetic Resonance in Medicine*
- 10/2011 - 11/2015 Travel-Grants, *ISMRM, ESMRMB and Graduate-Academy Heidelberg, German Academic Exchange Service*
- 07/2011 VDI-Award (Best graduate of the faculty for Math and Computer Science), *University of Würzburg*
- 01/2011 - 03/2014 Doctoral Fellowship (one of eleven annually awarded full-scholarships), *Deutsche Telekom-Stiftung*
- 01/2011 Youngest German Diploma graduate (equivalent M.Sc.) and first student in southern Germany to graduate parallel to high-school, *University of Würzburg*
- 06/2010 Distinction for excellence during high school, *German Mathematical Society and German Physical Society*
- 06/2010 Jack-Steinberger-Award (best high school graduate), *Bad Kissingen*
- 10/2008 - 01/2011 Undergraduate Fellowship (youngest recipient to date), *Konrad-Adenauer-Stiftung*
- 10/2006 - 01/2011 Admission to a support program for gifted students: Undergraduate studies parallel to high-school, *Karg-Stiftung*

INVITED TALKS

- 02/2019 “Basic Pulse Sequences for MR Imaging”, 22nd Annual Meeting of the SCMR, Bellevue, WA, USA
- 06/2018 “Sparse signal processing for efficient online processing of neuronal recordings”, Cortical Processing Laboratory, University College London, London, UK
- 06/2018 “From Fast to Functional: Recent trends in Quantitative CMR”, London CMR, CMR Committee UK, London, UK
- 03/2017 “Improving patient comfort in quantitative T1 Mapping”, Barts Heart Centre, University College London, London, UK
- 03/2017 “Image acceleration in quantitative cardiac MRI”, Division of Imaging Sciences and Biomedical Engineering, Kings College London, London, UK
- 02/2017 “Image Formation: From Spins to Images”, 20th Annual Meeting of the SCMR, Washington, DC, USA
- 12/2016 “What’s new in quantitative cardiac MRI”, National Metrology Institute of Germany (PTB), Berlin, Germany

- 12/2016 “Dynamic viability imaging of the heart”, Experimental and Clinical Research Center, Charité-Medical University Berlin, Berlin, Germany
- 04/2016 “Quantitative myocardial tissue characterization”, University Medical Center Göttingen, University of Göttingen, Göttingen, Germany
- 02/2016 “Myocardial T1 Mapping – A physicist’s look under the hood”, Stephenson Cardiac Imaging Centre, University of Calgary, Calgary, Germany
- 01/2016 “T1 Mapping: Overview on Acquisition Strategies”, 19th Annual Meeting of the SCMR, Los Angeles, CA, USA
- 02/2015 “Estimation of Relaxometry Parameters”, Joint ISMRM/SCMR Workshop, SCMR-EuroCMR Sessions, Nice, France
- 03/2012 “Fourier Decomposition of the Lungs”, Center for Pulmonary Functional Imaging, Harvard Medical School, Boston, MA, USA

PROFESSIONAL SERVICES

- MEMBERSHIPS Junior Fellow: *ISMRM*
Student Member: *SCMR, ESMRMB, IEEE, EMBS, DGMP, DGP*
- STUDY GROUPS *ISMRM*: Cardiac MR Study Group, QMR Study Group
- DISTINGUISHED REVIEWER *Journal of Cardiovascular Magnetic Resonance, Journal of Magnetic Resonance Imaging*
- AD-HOC REVIEWER *Magnetic Resonance Medicine, Magnetic Resonance Imaging, The International Journal of Cardiovascular Imaging, BMC Medical Imaging, Zeitschrift für Medizinische Physik, International Journal of Computer Assisted Radiology and Surgery, PLOS One*
- GRANT REVIEWER *DFG* (German Research Foundation, equivalent National Science Foundation), “Elite Program” Post-Doc grants *Baden-Württemberg Stiftung*
- CONFERENCE SERVICES *ISMRM*: 2018 Publications Committee, Observer, 2018: Junior Fellow Symposium Committee

SELECTED PUBLICATIONS

- PATENTS
11 Total /
9 First Author
- S. Weingärtner**, M. Akçakaya, W. J. Manning and R. Nezafat, “System and Method for Improved Cardiac Imaging of Subjects with Adverse Cardiac Conditions”. US, WIPO, EU, Chinese, Korean and Japanese Patent Applications US 20140200436 A1, EP 2805174 A1, WO 2014113322 A1, CN 105283774 A, JP 2016502927 A, KR 20150118952 A. 2014. Exclusively Licenced
- S. Weingärtner**, M. Akçakaya and R. Nezafat, “System and Method for Free-Breathing Volumetric Imaging of Cardiac Tissue”. US Patent granted US 9835705 B2. 2014
- S. Weingärtner** and R. Nezafat, “System and Method for Tissue Characterization using Multi-Slice Magnetic Resonance Imaging”. US Patent Application; Korean Patent granted US 20150323630 A1, KR 101664138 B1. 2015
- PAPERS
32 Total /
11 First Author
- B. Rieger, F. Zimmer, J. Zapp, **S. Weingärtner*** and L. R. Schad*, “Magnetic Resonance Fingerprinting using Echo-Planar Imaging: Joint Quantification of T1 and T2* Relaxation Times”. In: *Magn Reson Med* 78 (5 2017), pp. 1724–1733. (*indicates shared Last-Authorship)
- B. Rieger, M. Akçakaya, J. C. Pariente, S. Llufrui, E. Martinez-Heras, **S. Weingärtner*** and L. R. Schad*, “Time Efficient Whole-Brain Coverage

with MR Fingerprinting Using Slice-Interleaved Echo-Planar-Imaging”. In: *Sci Rep* 8.1 (2018), p. 6667. (*indicates shared Last-Authorship)

M. Akçakaya, S. Moeller, **S. Weingärtner** and K. Ugurbil, “Scan-specific Robust Artificial-neural-networks for k-space Interpolation-based (RAKI) Reconstruction: Database-free Deep Learning for Fast Imaging”. In: *Magn Reson Med* (2017). *in Press*

S. Weingärtner, C. Shenoy, B. Rieger, L. R. Schad, J. Schulz-Menger and M. Akçakaya, “TempOrally-resolved Parametric Assessment of Z-magnetization recovery (TOPAZ): Dynamic Myocardial T1 Mapping Using a Cine Steady-State Look-Locker Approach”. In: *Magn Reson Med* 79 (4 2017), pp. 2087–2100

S. Weingärtner, N. M. Meßner, M. Akçakaya and L. R. Schad, “Black-Blood Native T1 Mapping: Blood Signal Suppression for Reduced Partial-Voluming in the Myocardium”. In: *Magn Reson Med* 78 (2 2016), pp. 484–493

S. Weingärtner, F. Zimmer, G. J. Metzger, K. Ugurbil, P.-F. Moortele and M. Akçakaya, “Motion-Robust Cardiac B1+ Mapping at 3T using Interleaved Bloch-Siegert Shifts”. In: *Magn Reson Med* 78 (2 2016), pp. 670–677

S. Weingärtner, S. Roujol, M. Akçakaya, T. Basha and R. Nezafat, “Free-breathing multislice native myocardial T1 mapping using the slice-interleaved T1 (STONE) sequence”. In: *Magn Reson Med* 74.1 (2015), pp. 115–124

S. Weingärtner, M. Akçakaya, K. V. Kissinger, B. Goddu, S. Berg, W. J. Manning and R. Nezafat, “Combined Saturation/Inversion Recovery Sequences for Improved Evaluation of Scar and Diffuse Fibrosis in Patients with Arrhythmia or Heart Rate Variability”. In: *Magn Reson Med* 71.3 (2014), pp. 1024–1034. ISMRM Young Investigator Award semi-finalist

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PAPER
7 Total /
2 First Author

S. Weingärtner, M. Akçakaya and T. Moore, “Robust Online Spike Recovery for High-Density Electrode Recordings using Convolutional Compressed Sensing”. In: *Proceedings of the International IEEE EMBS Conference on Neural Engineering*. San Francisco, California, US, 2019. IEEE Brain Award, Finalist

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ABSTRACTS
55 Total /
29 First Author

S. Weingärtner, M. Akçakaya and T. Moore, “Online convolutional compressed sensing for sparse signal recovery from neuronal spiking activity”. In: *Proceedings of the Computational and Systems Neuroscience*. Denver, Colorado, US, 2018, pp. III–91

S. Weingärtner, B. Yaman, C. Shenoy, M. Prothmann, F. Wenson, J. Schulz-Menger and M. Akçakaya, “Cardiac Phase-resolved Late-Gadolinium Enhancement Imaging”. In: *Proceedings of the Joint Annual Meeting ISMRM-ESMRMB*. Paris, France, 2018, p. 286. oral Presentation, ISMRM Summa Cum Laude Award

S. Weingärtner, S. Moeller and M. Akçakaya, “Feasibility of Ultra-high Simultaneous Multi-slice and In-plane Accelerations for Cardiac MRI Using Outer Volume Suppression and Leakage-Blocking Reconstruction”. In: *Proceedings of the Joint Annual Meeting ISMRM-ESMRMB*. Paris, France, 2018, p. 359. oral Presentation, ISMRM Magna Cum Laude Award

Delft, July 3, 2019