Tom Griesler
tomgr@med.umich.edu
December 2025

EDUCATION

University of Michigan *Expected 2027*
PhD, Biomedical Engineering

Universität Würzburg *July 2023*
Master of Science, Physics

Technische Universität Darmstadt *February 2020*
Bachelor of Science, Physics

RESEARCH INTERESTS

Magnetic Resonance Fingerprinting (MRF), Abdominal MRI, Perfusion MRI, Machine Learning, Open Source Pulse Sequence Programming

RESEARCH EXPERIENCE

University of Michigan, Department of Biomedical Engineering
Graduate Student Research Assistant *August 2023 – present*
Advisor: Professor Nicole Seiberlich

- Optimize MRF sequences for rapid quantitative abdominal imaging
- Advance multiparametric liver imaging at mid-field (0.55T)
- Extend the Deep Image Prior MRF reconstruction framework to handle multi-echo MRF data
- Develop a concept for high temporal resolution quantitative perfusion imaging with MRF
- Develop an open-source framework for MRF acquisition and reconstruction using Pulseq (OpenMRF)

Universität Würzburg, Experimental Physics 5
Graduate Researcher *April 2022 – July 2023*
Advisors: Professor Peter M. Jakob, Dr. Martin Blaimer

- Master's Thesis: "Target-dependent Optimization of Magnetic Resonance Fingerprinting Sequences"
- Set up a workflow for planning and performing MRF measurements
  - Created a Python module to optimize MRF sequences based on different cost functions, including the Cramer-Rao Lower Bound
  - Wrote MRI sequences in PyPulseq and performed phantom and in vivo measurements on a clinical 3T scanner
  - Implemented a reconstruction pipeline to estimate relaxation times and tissue fractions from the raw data
- Applied the results to determine the myelin-water-fraction in the human brain

Magnetic Resonance and X-Ray Imaging Department, Fraunhofer EZRT
Research Intern *June 2021 - August 2021*
Advisor: Dr. Martin Blaimer

- Performed relaxometric measurements on geological samples with a gradient and radiofrequency insert in the magnetic field of a clinical 1.5T scanner
- Evaluated measurements in Matlab

Technische Universität Darmstadt, Institute for Condensed Matter Physics
Undergraduate Researcher *September 2019 - February 2020*
Advisor: Professor Michael Vogel

- Bachelor's Thesis: "Design of a PFG NMR Probe and Diffusion Measurements on a Lithium Chloride Solution in Confinement"
- Identified improvement possibilities of an existing probe
- Designed components of a new probe in the CAD software "OnShape"
- Assembled the probe (Manual assembly, soldering of the electrical components, adjustment of the electrical oscillating circuit)
- Performed diffusion measurements in an NMR spectrometer
- Evaluated and visualized the results in Python

TEACHING EXPERIENCE

Technische Universität Darmstadt
Undergraduate Teaching Assistant *October 2017 - September 2018*
October 2019 - March 2020

- Teaching assistant for *Experimental Physics I & II* for Professor Regine von Klitzing and Professor Norbert Pietralla
- Held weekly exercise sessions
- Held weekly office hours to help students with concepts and homework
- Corrected the weekly homework
- Corrected the final exams

CONFERENCE ABSTRACTS (FIRST AUTHOR)

- **Tom Griesler,** Maximilian Gram, Jannik Stebani, Petra Albertova, Peter Dawood, Nicole Seiberlich, Peter Michael Jakob, Martin Blaimer. "Towards Sequence Optimization for Multi-Compartment Magnetic Resonance Fingerprinting". *ISMRM Annual Meeting and Exhibition* 2024, Singapore.
- **Tom Griesler**, Jesse Hamilton, Sydney Kaplan, Evan Cummings, Nicole Seiberlich, Gastao Cruz. "Preparation Scheme Optimization for Abdominal MRF". *ISMRM Annual Meeting and Exhibition* 2024, Singapore.
- **Tom Griesler**, Luis Hernandez-Garcia, Zhongnan Liu, Jesse Hamilton, Thomas Chenevert, Vikas Gulani, Nicole Seiberlich, Gastao Cruz. "Feasibility of High Temporal Resolution Quantitative Perfusion Using MR Fingerprinting". *ISMRM Workshop on Perfusion MRI* 2025, Pamplona, Spain.
- **Tom Griesler**, Evan Cummings, Gastao Cruz, Matthew S Davenport, Hero Hussain, Jesse Hamilton, Nicole Seiberlich. "Improved Liver T1, T2, T2*, and PDFF Mapping at 0.55T Using Rosette MRF with Optimized Sequence Design and Deep Image Reconstruction". *ISMRM Workshop on Body MRI* 2025, Philadelphia, PA, USA.
- **Tom Griesler**, Evan Cummings, Sydney Kaplan, Jesse Hamilton, Matthew S Davenport, Nicole Seiberlich, Gastao Cruz. "Kidney T1, T2, T2*, T1rho, and PDFF Mapping at 1.5T Using Rosette MRF with Dictionary Patch-Based Regularization". *ISMRM Workshop on Body MRI* 2025, Philadelphia, PA, USA.
- **Tom Griesler**, Evan Cummings, Gastao Cruz, Matthew S Davenport, Hero Hussain, Jesse Hamilton, Nicole Seiberlich. "Improved Liver T1, T2, T2*, and PDFF Mapping at 0.55T Using Rosette MRF with Optimized Sequence Design and Deep Image Reconstruction". *ISMRM Annual Meeting and Exhibition* 2025, Honolulu, HI, USA. **Received ISMRM *Summa Cum Laude* Merit Award.**
- **Tom Griesler**, Evan Cummings, Sydney Kaplan, Jesse Hamilton, Matthew S Davenport, Nicole Seiberlich, Gastao Cruz. "Kidney T1, T2, T2*, T1rho, and PDFF Mapping at 1.5T Using Rosette MRF with Dictionary Patch-Based Regularization". *ISMRM Annual Meeting and Exhibition* 2025, Honolulu, HI, USA.

CONFERENCE ABSTRACTS (COAUTHOR)

- Peter Dawood, Jannik Stebani, **Tom Griesler**, Felix Breuer, Daniel Weber, Volker Herold, Shaihan Malik, Peter M. Jakob, Martin Blaimer. "Neural network informed flip angle optimization for SAR reduced imaging". *ESMRMB Annual Scientific Metting* 2023, Basel, Switzerland.
- Gastao Cruz, Evan Cummings, **Tom Griesler**, Jesse Hamilton, Vikas Gulani, Matthew Davenport, Nicole Seiberlich. "2D T1, T2, T2* And PDFF Mapping In The Kidney With Rosette MRF Using Hermitian Low-Rank and Dictionary-Patch Based Regularization". *ISMRM Annual Meeting and Exhibition* 2024, Singapore.
- Petra Albertova, **Tom Griesler**, Martin Blaimer, Nicole Seiberlich, Peter M. Jakob, Peter Nordbeck, Maximilian Gram. "Magnetic Resonance Fingerprinting enables spatially resolved characterization of pulsed magnetic fields in the nano-Tesla range". *BIOMAG* 2024, Sydney, Australia.
- Kian R Weihrauch, **Tom Griesler**, Jesse Hamilton, Nicole Seiberlich, Gastao Cruz. "Deep Learning for Kidney Segmentation Using Quantitative MRI: Bridging the Gap Between Simulated and *In Vivo* Data". *ISMRM Workshop on Body MRI* 2025, Philadelphia, PA, USA.
- Gastao Cruz, Evan Cummings, **Tom Griesler**, Jacob Richardson, Jesse Hamilton, Vikas Gulani, Matthew S Davenport, Nicole Seiberlich. "3D free-breathing T1/T2/T2*/PDFF kidney mapping with dictionary-patch regularized low rank motion corrected rosette MRF". *ISMRM Workshop on Body MRI* 2025, Philadelphia, PA, USA.
- Gastao Cruz, Evan Cummings, **Tom Griesler**, Jesse Hamilton, Vikas Gulani, Matthew Davenport, and Nicole Seiberlich. "3D Free-Breathing T1, T2, T2* And PDFF Mapping In The Kidneys With Dictionary-

Patch Regularized Low Rank Motion Corrected Rosette MRF". *ISMRM Annual Meeting and Exhibition* 2025, Honolulu, HI, USA.

- Rudy Rizzo, Zhongnan Liu, Jesus Ernesto Fajardo Freites, **Tom Griesler**, Jesse Hamilton, Yun Jiang, and Nicole Seiberlich. "Accelerating 3D High-Resolution Brain MR Fingerprinting At 0.55T: Balanced Free-Precession Meets Deep Learning". *ISMRM Annual Meeting and Exhibition* 2025, Honolulu, HI, USA.
- Maximilian Gram, Petra Albertova, **Tom Griesler**, Peter Dawood, Jannik Stebani, Martin Blaimer, Nicole Seiberlich, Peter Michael Jakob, and Peter Nordbeck. "Spin-Lock Based Magnetic Resonance Fingerprinting Enables Characterization Of Magnetic Waveforms Via Spectral Matching Of Rotary Excitation". *ISMRM Annual Meeting and Exhibition* 2025, Honolulu, HI, USA.
- Jannik Stebani, Ivaylo Angelov, Peter Dawood, **Tom Griesler**, Petra Albertova, Thomas Kampf, Kristen Rak, Peter Michael Jakob, Martin Blaimer, and Maximilian Gram. "High-Resolution Quantitative Imaging Of The Inner Ear Using 3D Magnetic Resonance Fingerprinting". *ISMRM Annual Meeting and Exhibition* 2025, Honolulu, HI, USA.

RELEVANT SKILLS

Programming

- Python, Matlab: several years of experience, extensive knowledge of the standard libraries and additional packages
- Version management with Git: solid knowledge
- Bash scripting (linux): solid knowledge
- Sequence Programming in IDEA: basic knowledge
- Julia: basic knowledge

Languages

- German: Native
- English: Professional Working Proficiency (TOEFL score 110/120, 2022)
- French: Limited Working Proficiency (CEFR B2)

HONORS AND AWARDS

- Erasmus Exchange Program Student at Grenoble Institute of Technology — *September 2018 - June 2019*
- Röntgen-Studienpreis, Institute of Physics, Universität Würzburg — *June 2024*
- 2nd Place Power Pitch, ISMRM Workshop on Body MRI 2025, Philadelphia, PA, USA — *March 2025*
- Summa Cum Laude Award, ISMRM Annual Meeting 2025, Honolulu, HI, USA — *May 2025*

MEMBERSHIPS

- ISMRM trainee member — *2024 – present*

SERVICE

- Member of the Michigan Institute for Imaging Technology and Translation Social Committee — *October 2023 – present*
  - Served as Chair — *October2023 – July 2025*
- Graduate Student Engineering Ambassador, College of Engineering, University of Michigan — *May 2025 – present*

VOLUNTEERING

- Active member, Volunteer Fire Brigade in Neuenbuch (Germany) — *2010-2023*
  - Served as Chair for Youth Education: Organized training programs and educational activities for youth members (age 12-18). — *2020-2022*
- Active Member, Neuenbucher Musikanten Brass Band — *2012-2023*
  - Served as President: Managed band activities and coordinated performances. — *2022-2023*
- Active Member, Zeltlagerteam Untermain — *2013-2023*
  - Participated in the planning and realization of a yearly tent camp for kids age 8-13.
  - Served as Board Member. — *2020-2022*