Dr. Martin Genzel

Curriculum Vitae

Merantix Momentum
AI Campus Berlin
Max-Urich-Straße 3
13355 Berlin, Germany
martin.genzel@merantix-momentum.com
www.martingenzel.com

Professional Experience

Since Feb 23 **Staff Machine Learning Researcher**, *Merantix Momentum (Germany)*
- Since Mar 24: Staff Machine Learning Researcher
- May 23 – Feb 24: Research Team Lead
- Feb 23 – Apr 23: Senior Machine Learning Researcher

Apr 22 – Jan 23 **Scientific Employee**, *Helmholtz Zentrum Berlin für Materialien und Energie (Germany)*
- Machine Learning Scientist in the department "Optics and Beamlines"

Apr 20 – Mar 22 **Scientific Employee**, *Utrecht University (Netherlands)*, Mathematical Institute
- Postdoctoral researcher in the group of Prof. Dr. Sjoerd Dirksen

Jul 15 – Mar 20 **Scientific Employee**, *Technische Universität Berlin (Germany)*, Department of Mathematics
- (Post-)doctoral researcher in the group "Applied Functional Analysis" of Prof. Dr. Gitta Kutyniok

Jun 13 – Jun 15 **Student Research Assistant**, *Technische Universität Berlin*, Department of Mathematics
- Student in the group "Applied Functional Analysis" of Prof. Dr. Gitta Kutyniok

Feb 10 – May 13 **Student Research Assistant**, *Helmholtz Zentrum Berlin für Materialien und Energie*
- Student in the group of Prof. Dr. Christoph Genzel

Education

May 19 **Ph.D. in Mathematics**, *Technische Universität Berlin (Germany)*, Overall grade: Summa cum laude (winner of the BIMoS Ph.D. Award)

Jun 15 **M.Sc. in Mathematics**, *Technische Universität Berlin*, Overall grade: 1.0

Sep 13 **B.Sc. in Mathematics**, *Technische Universität Berlin*, Overall grade: 1.0

Oct 13 – May 19 **BMS Graduate Student**, *Berlin Mathematical School (Germany)*

Apr 10 – Jun 15 **Studies in Mathematics**, *Technische Universität Berlin*

Oct 09 – Mar 10 **Studies in Material Science**, *Technische Universität Berlin*

Jul 09 **German Abitur**, *Friedrich-Wilhelm-Gymnasium*, Königs Wusterhausen (Germany), Overall grade: 1.0

Honors and Awards

Nov 21 **Winner of the Helsinki Deblur Challenge 2021**, *Finnish Inverse Problems Society (FIPS)*.
Jointly with team members Theophil Trippe, Jan Macdonald, and Maximilian März

Jun 21 **Winner of the AAPM Grand Challenge "Deep Learning for Inverse Problems: Sparse-View Computed Tomography Image Reconstruction"**, *American Association of Physicists in Medicine (AAPM)*.
Jointly with team members Jan Macdonald and Maximilian März

Dec 20 **BIMoS Ph.D. Award**, *Technische Universität Berlin*.
Berlin International Graduate School in Model and Simulation based Research (BIMoS)

Jan 17 **Election as GAMM Junior**.
Junior member of the International Association of Applied Mathematics and Mechanics (GAMM)

Nov 15 **Award "Best Master's Degree in Mathematics"**, *Technische Universität Berlin*.
Dies Mathematicus of the Department of Mathematics

Oct 14 – Jun 15 **Scholarship "Deutschlandstipendium"**, *Technische Universität Berlin*.
German scholarship programme for talented students

Nov 13 **Award "Best Bachelor's Degree in Mathematics"**, *Technische Universität Berlin*.
Dies Mathematicus of the Department of Mathematics

Oct 13 **Admission to Berlin Mathematical School**.
Joint graduate school of Berlin's universities

Jul – Aug 08 **Admission to Deutsche Schüler Akademie**, Hilden (Germany).
Participant in the course on "Mathematical Problems of Image Processing"

Teaching Experience and Supervision

Utrecht University

Semester II 21/22 **Introduction to Machine Learning**, *Bachelor course*, Preparation of exercise material

Semester II 20/21 **Machine Learning**, *Master seminar*, Co-organizer with Prof. Dr. Sjoerd Dirksen

Technische Universität Berlin

Summer 19 **Functional Analysis I**, *Bachelor course*, Lecturer

Summer 16 **Functional Analysis III**, *Master course*, Preparation of lecture notes

Winter 15/16 **Analysis I for Engineers**, *Bachelor course*, Teaching assistant

Supervised Bachelor's and Master's Theses

TU Berlin (co-supervised) Mark Cheng (B & M), Lukas Emmigner (M), Ansgar Freyer* (B), Julian Goede (B), Jannik Ifland (B), Christian Kipp* (B), Hendrik Petersen (M), Jonathan Sauder (M), Robert Seidel* (M), Theophil Trippe (M)

*Awarded the best degree in mathematics at the annual Dies Mathematicus of TU Berlin

Invited Research Visits

Jun 22 **University of Cambridge**, Cambridge (UK).
Invitation by Prof. Dr. Carola-Bibiane Schönlieb (1 week)

Oct 19 **Johns Hopkins University**, Baltimore (MD, USA).
Invitation by Prof. Dr. Jeremias Sulam (1 week)

Feb 18 **University College London**, London (UK).
Invitation by Prof. Dr. Miguel Rodrigues (1 week)

Nov 17 **Technion – Israel Institute of Technology**, Haifa (Israel).
Invitation by Prof. Dr. Yonina Eldar (1 week)

Jan 17 **University of Texas at Austin**, Austin (TX, USA).
Invitation by Prof. Dr. Chandrajit Bajaj (1 week)

Mar 16 **Hausdorff Research Institute for Mathematics**, Bonn (Germany).
Trimester program "Mathematics of Signal Processing" (2 weeks)

Nov 15 **University of Michigan**, Ann Arbor (MI, USA).
Invitation by Prof. Dr. Roman Vershynin (2 weeks)

Invited Talks

2025 **Ghost Day – Applied Machine Learning Conference**, Poszan (Poland), May 10, 2025.
Title: "Can Compressing Foundation Models be as Easy as Image Compression?"

BLISS AI Speaker Series, Berlin (Germany), April 22, 2025.
Title: "Can Compressing Foundation Models be as Easy as Image Compression?"

2022 **Cambridge Image Analysis Seminar**, *University of Cambridge*, Cambridge (UK), June 23, 2022.
Title: "Robustness and Accuracy of Deep End-to-End Networks for Inverse Problems"

Follow-up Workshop "Mathematics of Data Science", *Hausdorff Research Institute for Mathematics*, Bonn (Germany), April 28, 2022.
Title: "Solving Inverse Problems With Deep Neural Networks – Robustness Included?"

SIAM IS22 Minisymposium "Data-Driven Methods in Inverse Problems & Imaging", *SIAM Conference on Imaging Science 2022 (virtual event)*, March 22, 2022.
Title: "Data-Driven Methods at the Noise-Free Limit: Near-Perfect Recovery Despite Undersampling?"

SIAM IS22 Minisymposium "Deeply Learned Regularization for Inverse Imaging Problems", *SIAM Conference on Imaging Science 2022 (virtual event)*, March 21, 2022.
Title: "Robustness of Deep End-to-End Methods for Inverse Problems"

Computational Analysis Seminar, *Vanderbilt University*, Nashville (TN, USA), March 16, 2022.
Title: "The Separation Capacity of Random Neural Networks"

Applied Mathematics Seminar, *KU Eichstätt-Ingolstadt*, Eichstätt (Germany), January 11, 2022.
Title: "The Separation Capacity of Random Neural Networks"

2021 Conference "Inverse Days 2021", *Tampere University*, Tampere (Finland), December 15, 2021.
Title: "End-to-End CNN for Deblurring – Winning Contribution to the Helsinki Deblur Challenge 2021" (presentation by Theophil Trippe in Session "Helsinki Deblur Challenge 2021")

FNRS Contact Group on "Wavelets and Applications" (virtual event), *UCLouvain*, Louvain-la-Neuve (Belgium), December 14, 2021.
Title: "Solving Inverse Problems With Deep Neural Networks – Robustness (and Accuracy) Included?" (invited guest speaker)

AAPM Annual Meeting (virtual event), *American Association of Physicists in Medicine (AAPM)*, July 28, 2021.
Title: "AAPM DL-sparse-view CT Challenge – Team name: robust-and-stable" (in Session "Grand Challenges: Deep Learning Sparse-View CT and DBTex")

IICU Seminar, *Utrecht University*, Utrecht (Netherlands), March 1, 2021.
Title: "Robustness Included? – Solving Inverse Problems With Deep Neural Networks"

2020 Post Graduate Seminar – Chair for Mathematics of Information Processing, *RWTH Aachen*, Aachen (Germany), December 17, 2020.
Title: "Robust Solutions to (Non-)Linear Inverse Problems: From Compressed Sensing to Deep Learning"

Oberseminar Applied Algebra and Analysis, *Technische Universität Braunschweig*, Brunswick (Germany), February 4, 2020.
Title: "A Non-Uniform Perspective on Analysis Sparsity in Compressed Sensing"

2019 MINDS/CIS Seminar Series, *Johns Hopkins University*, Baltimore (MD, USA), October 29, 2019.
Title: "A Non-Uniform Perspective on Analysis Sparsity in Compressed Sensing"

Conference "ILAS 2019: Linear Algebra Without Borders", *Fundação Getúlio Vargas*, Rio de Janeiro (Brazil), July 11, 2019.
Title: "A New Perspective on ℓ^1-Analysis Recovery" (in Minisymposium "Frame Theory and Data Science")

2017 Conference "Applied Inverse Problems", *Zhejiang University*, Hangzhou (China), May 29, 2017.
Title: "Feature Selection From Real-World Data With Non-Linear Observations" (in Minisymposium "Deep Neural Networks: Theory and Application")

ICES Seminar, *University of Texas at Austin*, Austin (TX, USA), January 17, 2017.
Title: "Feature Selection From Real-World Data With Non-Linear Observations"

2016 Analysis Oberseminar, *RWTH Aachen*, Aachen (Germany), November 29, 2016.
Title: "Feature Selection From Real-World Data With Non-Linear Observations"

Organization of Scientific Events

2022 HZB Machine Learning Hackathon 2022, *Helmholtz-Zentrum Berlin für Materialien und Energie*, Berlin (Germany), October 17–21, 2022.
Organized jointly with Peter Feuer-Forson, Gregor Hartmann, Tamara Husch, and Jens Viefhaus

Minisymposium "Inverse Problems with Data-Driven Methods and Deep Learning", *10th International Conference "Inverse Problems: Modeling and Simulation"*, Malta, May 22–28, 2022.
Organized jointly with Tatiana Bubba, Andreas Hauptmann, and Maximilian März

Committees and Academic Self-Governance

Technische Universität Berlin

2018 Member of an appointment committee

Reviewer Activity

Referee for the following journals:

- Advances in Computational Mathematics
- Constructive Approximation
- Foundations of Computational Mathematics
- IEEE Transactions on Information Theory
- IEEE Transactions on Signal Processing
- Information and Inference
- International Journal of Wavelets, Multiresolution and Information Processing
- Journal of the American Statistical Association
- Journal of Fourier Analysis and Applications
- Journal of Machine Learning for Biomedical Imaging (MELBA)
- Linear Algebra and its Applications
- PLOS ONE
- Proceedings of Machine Learning Research (Conference on Learning Theory)
- Sampling Theory, Signal Processing, and Data Analysis
- SIAM Journal on Mathematics of Data Science

Berlin, February 8, 2026

List of Publications

Preprints

2026 [1] P. Putzky, M. Genzel, M. Mollenhauer, S. Schulze, T. Wollmann, and S. Dietzel
Float8@2bits: Entropy Coding Enables Data-Free Model Compression. *Preprint* (2026), arXiv:2601.22787. https://arxiv.org/abs/2601.22787

Peer-Reviewed Journal Articles

2025 [18] M. Genzel, P. Putzky, P. Zhao, S. Schulze, M. Mollenhauer, R. Seidel, S. Dietzel, and T. Wollmann
Choose Your Model Size: Any Compression of Large Language Models Without Re-Computation. *TMLR* (2025). https://openreview.net/forum?id=Y6hdYf8tsg

2024 [17] S. Dirksen, P. Finke, and M. Genzel
Memorization With Neural Nets: Going Beyond the Worst Case. *J. Mach. Learn. Res.* 25.347 (2024), pp. 1–38. https://www.jmlr.org/papers/v25/23-1376.html

2023 [16] T. Trippe, M. Genzel, J. Macdonald, and M. März
Let's enhance: A deep learning approach to extreme deblurring of text images. *Inverse Probl. Imaging* 17.5 (2023), pp. 1041–1068. https://doi.org/10.3934/ipi.2023019

[15] M. Genzel and A. Stollenwerk
A Unified Approach to Uniform Signal Recovery From Nonlinear Observations. *Found. Comut. Math.* 23.3 (2023), pp. 899–972. https://link.springer.com/10.1007/s10208-022-09562-y

[14] M. Genzel, J. Macdonald, and M. März
Solving Inverse Problems With Deep Neural Networks – Robustness Included? *IEEE Trans. Pattern Anal. Mach. Intell.* 45.1 (2023), pp. 1119–1134. https://dx.doi.org/10.1109/TPAMI.2022.3148324

2022 [13] S. Dirksen, M. Genzel, L. Jacques, and A. Stollenwerk
The Separation Capacity of Random Neural Networks. *J. Mach. Learn. Res.* 23.309 (2022), pp. 1–47. https://jmlr.org/papers/v23/21-1079.html

[12] J. Sauder, M. Genzel, and P. Jung
Gradient-Based Learning of Discrete Structured Measurement Operators for Signal Recovery. *IEEE J. Sel. Area. Inf. Theory* 3.3 (2022), pp. 481–492. https://doi.org/10.1109/JSAIT.2022.3221644

[11] M. Genzel and Ch. Kipp
Generic error bounds for the generalized Lasso with sub-exponential data. *Sampl. Theory Signal Process. Data Anal.* 20.2 (2022), p. 15. https://link.springer.com/article/10.1007/s43670-022-00032-8

[10] M. Genzel, M. März, and R. Seidel
Compressed Sensing with 1D Total Variation: Breaking Sample Complexity Barriers via Non-Uniform Recovery. *Inf. Inference* 11.1 (2022), pp. 203–250. https://dx.doi.org/10.1093/imaiai/iaab001

2021 [9] M. Genzel, G. Kutyniok, and M. März
ℓ^1-Analysis Minimization and Generalized (Co-)Sparsity: When Does Recovery Succeed? *Appl. Comput. Harmon. Anal.* 52 (2021), pp. 82–140. https://dx.doi.org/10.1016/j.acha.2020.01.002

2020 [8] D. Apel, M. Genzel, M. Meixner, M. Boin, M. Klaus, and Ch. Genzel
EDDIDAT: a graphical user interface for the analysis of energy-dispersive diffraction data. *J. Appl. Cryst.* 53.4 (2020), pp. 1130–1137. https://dx.doi.org/10.1107/S1600576720005506

[7] M. Genzel and A. Stollenwerk
Robust 1-Bit Compressed Sensing via Hinge Loss Minimization. *Inf. Inference* 9.2 (2020), pp. 361–422. https://dx.doi.org/10.1093/imaiai/iaz010

[6] M. Genzel and P. Jung
Recovering Structured Data From Superimposed Non-Linear Measurements. *IEEE Trans. Inf. Theory* 66.1 (2020), pp. 453–477. https://dx.doi.org/10.1109/TIT.2019.2932426

2017 [5] T. Conrad, M. Genzel, N. Cvetkovic, N. Wulkow, A. Leichtle, J. Vybiral, G. Kutyniok, and Ch. Schütte
Sparse Proteomics Analysis – a compressed sensing-based approach for feature selection and classification of high-dimensional proteomics mass spectrometry data. *BMC Bioinform.* 18 (2017), p. 160. https://dx.doi.org/10.1186/s12859-017-1565-4

[4] M. Genzel
High-Dimensional Estimation of Structured Signals From Non-Linear Observations With General Convex Loss Functions. *IEEE Trans. Inf. Theory* 63.3 (2017), pp. 1601–1619. https://dx.doi.org/10.1109/TIT.2016.2642993

2015 [3] M. Meixner, T. Fuss, M. Klaus, M. Genzel, and Ch. Genzel
Diffraction analysis of strongly inhomogeneous residual stress depth distributions by modification of the stress scanning method. II. Experimental implementation. *J. Appl. Cryst.* 48.5 (2015), pp. 1451–1461. https://dx.doi.org/10.1107/S160057671501585X

2014 [2] M. Genzel and G. Kutyniok
Asymptotic Analysis of Inpainting via Universal Shearlet Systems. *SIAM J. Imaging Sci.* 7.4 (2014), pp. 2301–2339. https://dx.doi.org/10.1137/140969452

[1] D. Apel, M. Klaus, M. Genzel, and Ch. Genzel
Rietveld-based energy-dispersive residual stress evaluation: Analysis of complex stress fields $\sigma_{ij}(z)$. *J. Appl. Cryst.* 47.2 (2014), pp. 511–526. https://dx.doi.org/10.1107/S1600576713034158

Peer-Reviewed Conference and Workshop Articles

2025 [13] M. Genzel, P. Putzky, P. Zhao, S. Schulze, M. Mollenhauer, R. Seidel, S. Dietzel, and T. Wollmann
Compressing Large Language Models to Any Size Without Re-Computation. *ICML 2025 Workshop ES-FoMo III: 3rd Workshop on Efficient Systems for Foundation Models*, July 2025. https://openreview.net/forum?id=cYES5Jexuy

2023 [12] F. Pieper, K. Ditschuneit, M. Genzel, A. Lindt, and J. Otterbach
Self-Distilled Representation Learning for Time Series. *NeurIPS 2023 Workshop on Self-Supervised Learning – Theory and Practice*, December 2023. http://arxiv.org/abs/2311.11335

[11] J. Siems, K. Ditschuneit, W. Ripken, A. Lindborg, M. Schambach, J. Otterbach, and M. Genzel
Curve Your Enthusiasm: Concurvity Regularization in Differentiable Generalized Additive Models. *Advances in Neural Information Processing Systems 36 (NeurIPS 2023)*, December 2023, pp. 19029–19057. https://openreview.net/forum?id=TAIYBdRb3C

[10] J. Siems, K. Ditschuneit, W. Ripken, A. Lindborg, M. Schambach, J. Otterbach, and M. Genzel
Curve your Enthusiasm: Concurvity Regularization in Differentiable Generalized Additive Models. *ICML 2023 Workshop on Interpretable Machine Learning in Healthcare*, July 2023. https://openreview.net/forum?id=2w6w8jek3P

2022 [9] M. Genzel, I. Gühring, J. Macdonald, and M. März
Near-Exact Recovery for Tomographic Inverse Problems via Deep Learning. *Proceedings of the 39th International Conference on Machine Learning*, July 2022, pp. 7368–7381. https://proceedings.mlr.press/v162/genzel22a.html

2021 [8] M. Genzel, I. Gühring, J. Macdonald, and M. März
Near-Exact Recovery for Sparse-View CT via Data-Driven Methods. *NeurIPS 2021 Workshop on Deep Learning and Inverse Problems*, December 2021. https://openreview.net/forum?id=IhI3ZhtZGUo

[7] J. Sauder, M. Genzel, and P. Jung
Learning Structured Sparse Matrices for Signal Recovery via Unrolled Optimization. *NeurIPS 2021 Workshop on Deep Learning and Inverse Problems*, December 2021. https://openreview.net/forum?id=IxKSqOq1TKQ

2020 [6] M. Genzel, M. März, and R. Seidel
Compressed Sensing with 1D Total Variation: Breaking Sample Complexity Barriers via Non-Uniform Recovery (iTWIST'20). *Proceedings of the International Traveling Workshop on Interactions Between Low-Complexity Data Models and Sensing Techniques (iTWIST)*, December 2020. https://arxiv.org/abs/2009.03694

2019 [5] M. Genzel and A. Stollenwerk
Robust 1-Bit Compressed Sensing via Hinge Loss Minimization. *Proceedings of the 13th International Conference on Sampling Theory and Applications (SampTA)*, July 2019. https://doi.org/10.1109/SampTA45681.2019.9030859

2018 [4] M. Genzel, G. Kutyniok, and M. März
A New Perspective on the Sample Complexity of the Analysis Basis Pursuit. *5th International Workshop on Compressed Sensing applied to Radar, Multimodal Sensing, and Imaging (CoSeRa)*, September 2018. https://www.eurasip.org/Proceedings/Ext/CoSeRa2018/papers/p-marz.pdf

[3] P. Jung and M. Genzel
Blind Sparse Recovery Using Imperfect Sensor Networks. *Proceedings of the 2018 IEEE Statistical Signal Processing Workshop (SSP)*, June 2018, pp. 598–602. https://doi.org/10.1109/SSP.2018.8450719

2017 [2] M. Genzel and P. Jung
Blind sparse recovery from superimposed non-linear sensor measurements. *Proceedings of the 12th International Conference on Sampling Theory and Applications (SampTA)*, July 2017, pp. 106–110. https://doi.org/10.1109/SAMPTA.2017.8024352

2013 [1] Ch. Genzel, D. Apel, M. Klaus, M. Genzel, and D. Balzar
Keynote Lecture: Residual Stress Gradient Analysis by Multiple Diffraction Line Methods. *International Conference on Residual Stresses 9 (ICRS 9)*, September 2013, pp. 3–18. https://doi.org/10.4028/www.scientific.net/MSF.768-769.3

Other Publications

2021 [3] M. Genzel
Solving Inverse Problems With Deep Neural Networks – Robustness Included? (joint with J. Macdonald and M. März). *Oberwolfach Rep.* 18.4 (2021), pp. 3043–3046. https://doi.org/10.4171/owr/2021/55

2019 [2] M. Genzel and G. Kutyniok
Artificial Neural Networks. *GAMM Rundbrief* 2019.2 (2019), pp. 12–18. https://www.gamm-ev.de/wp-content/uploads/2020/06/RB_2_19_web.pdf

2018 [1] M. Genzel
The Mismatch Principle: An Ignorant Approach to Non-Linear Compressed Sensing? (joint with G. Kutyniok and P. Jung). *Oberwolfach Rep.* 15.1 (2018), pp. 781–782. https://www.doi.org/10.4171/OWR/2018/14

Technical Reports

2021 [3] M. Genzel, J. Macdonald, and M. März
AAPM DL-Sparse-View CT Challenge Submission Report: Designing an Iterative Network for Fanbeam-CT with Unknown Geometry. *Technical report, arXiv:2106.00280* (2021). https://arxiv.org/abs/2106.00280

2018 [2] M. Genzel and G. Kutyniok
The Mismatch Principle: The Generalized Lasso Under Large Model Uncertainties. *Technical report, arXiv:1808.06329* (2018). https://arxiv.org/abs/1808.06329

2016 [1] M. Genzel and G. Kutyniok
A Mathematical Framework for Feature Selection from Real-World Data with Non-Linear Observations. *Technical report, arXiv:1608.08852* (2016). http://arxiv.org/abs/1608.08852

Monographs

[3] **The Mismatch Principle and ℓ^1-Analysis Compressed Sensing: A Unified Approach to Estimation Under Large Model Uncertainties and Structural Constraints**
Ph.D. Thesis, *Technische Universität Berlin*, March 2019, Advisor: Prof. Dr. Gitta Kutyniok. http://dx.doi.org/10.14279/depositonce-8394

[2] **Sparse Proteomics Analysis: Toward a Mathematical Foundation of Feature Selection and Disease Classification**
Master's Thesis, *Technische Universität Berlin*, June 2015, Advisor: Prof. Dr. Gitta Kutyniok.

[1] **Analysis von Inpainting mittels Hybrid-Shearlets und Clustered Sparsity**
Bachelor's Thesis (in German), *Technische Universität Berlin*, August 2013, Advisor: Prof. Dr. Gitta Kutyniok.

Research Activities

Research Visits (of at least one week length)

Jun 22 **University of Cambridge**, Cambridge (UK).
Invitation by Prof. Dr. Carola-Bibiane Schönlieb (1 week)

Oct 19 **Johns Hopkins University**, Baltimore (MD, USA).
Invitation by Prof. Dr. Jeremias Sulam (1 week)

Feb 18 **University College London**, London (UK).
Invitation by Prof. Dr. Miguel Rodrigues (1 week)

Nov 17 **Technion – Israel Institute of Technology**, Haifa (Israel).
Invitation by Prof. Dr. Yonina Eldar (1 week)

Jan 17 **University of Texas at Austin**, Austin (TX, USA).
Invitation by Prof. Dr. Chandrajit Bajaj (1 week)

Mar 16 **Hausdorff Research Institute for Mathematics**, Bonn (Germany).
Trimester program "Mathematics of Signal Processing" (2 weeks)

Nov 15 **University of Michigan**, Ann Arbor (MI, USA).
Invitation by Prof. Dr. Roman Vershynin (2 weeks)

Participation in Conferences, Workshops, etc.

2025 **42th International Conference on Machine Learning (ICML)**, Vancouver (BC, Canada), July 13–19, 2025.

Ghost Day – Applied Machine Learning Conference, Poszan (Poland), May 9–10, 2025.

2024 **41th International Conference on Machine Learning (ICML)**, Vienna, July 21–27, 2024.

2023 **Conference "NeurIPS"**, New Orleans (LA, USA), December 10–16, 2023.

2022 **39th International Conference on Machine Learning (ICML)**, Baltimore (MD, USA), July 17–23, 2022.

10th International Conference "Inverse Problems: Modeling and Simulation" (IPMS), Malta, May 22–28, 2022.

Follow-up Workshop "Mathematics of Data Science", *Hausdorff Research Institute for Mathematics*, Bonn (Germany), April 25–29, 2022.

SIAM Conference on Imaging Science 2022 (virtual event), March 21–25, 2022.

2021 **FNRS Contact Group on "Wavelets and Applications" (virtual event)**, *UCLouvain*, Louvain-la-Neuve (Belgium), December 14, 2021.

Conference "Inverse Days 2021", *Tampere University*, Tampere (Finland), December 14–16, 2021.

Conference "NeurIPS" (virtual event), December 6–14, 2021.

Workshop "Applied Harmonic Analysis and Data Science", *Mathematisches Forschungsinstitut Oberwolfach*, Oberwolfach (Germany), November 29–December 3, 2021.

Conference "DeepMath" (virtual event), November 4–5, 2021.

Conference "Online-ICCHA" (virtual event), September 13–17, 2021.

GAMM Annual Meeting (virtual event), Kassel (Germany), March 15–19, 2021.

2020 **Conference "iTWIST" (virtual event)**, Nantes (France), December 2–4, 2020.

SIAM Conference on Mathematics of Data Science (virtual event), Cincinnati (OH, USA), May 4–June 30, 2020.

2019 **Conference "NeurIPS"**, Vancouver (BC, Canada), December 8–14, 2019.

GAMM COMinDS Workshop "Computational and Mathematical Methods in Data Science", *Zuse Institute Berlin*, Berlin (Germany), October 24–25, 2019.

Joint Workshop of BBDC, BZML, and AIP, *Technische Universität Berlin*, Berlin (Germany), September 9–10, 2019.

Conference “ILAS 2019: Linear Algebra Without Borders”, *Fundação Getúlio Vargas*, Rio de Janeiro (Brazil), July 8–12, 2019.

Conference “SPARS”, *Engineering School ENSEEIHT*, Toulouse (France), July 1–4, 2019.

GAMM Annual Meeting, Vienna (Austria), February 18–22, 2019.

2018 Workshop “Optimization, Machine Learning, and Data Science”, *Technische Universität Braunschweig*, Brunswick (Germany), April 12–13, 2018.

Workshop “Applied Harmonic Analysis and Data Processing”, *Mathematisches Forschungsinstitut Oberwolfach*, Oberwolfach (Germany), March 26–30, 2018.

GAMM Annual Meeting, *Technische Universität München*, Munich (Germany), March 19–23, 2018.

2017 Matheon Conference “Compressed Sensing and its Applications”, *Technische Universität Berlin*, Berlin (Germany), December 4–8, 2017.

GAMM Workshop “Mathematical Signal Processing and Data Analysis”, *Universität Bremen*, Bremen (Germany), September 18–20, 2017.

Conference “SPARS”, *Instituto Superior Técnico*, Lisbon (Portugal), June 5–8, 2017.

Conference “Applied Inverse Problems”, *Zhejiang University*, Hangzhou (China), May 29–June 2, 2017.

GAMM Annual Meeting, Weimar (Germany), March 6–10, 2017.

2016 Conference “NIPS”, Barcelona (Spain), December 5–10, 2016.

GAMM Workshop “Applied and Numerical Linear Algebra”, *Technische Universität Hamburg*, Hamburg (Germany), September 15–16, 2016.

Conference “Time-Frequency Analysis and Related Topics”, Strobl (Austria), June 6–10, 2016.

Workshop “Harmonic Analysis, Graphs and Learning”, *Hausdorff Research Institute for Mathematics*, Bonn (Germany), March 14–18, 2016.

Conference “Mathematical Image Analysis”, *Institut Henri Poincaré*, Paris(France), January 18–20, 2016.

2015 Matheon Conference “Compressed Sensing and its Applications”, *Technische Universität Berlin*, Berlin (Germany), December 7–11, 2015.

Conference “SPARS”, *University of Cambridge*, Cambridge (UK), July 6–9, 2015.

2014 Conference “ICCHA”, *Vanderbilt University*, Nashville (TN, USA), May 19–23, 2014.

Joint GAMM ANLA-MSIP Workshop “Matrix Computations for Sparse Recovery”, *Technische Universität Berlin*, Berlin (Germany), April 9–11, 2014.

Conference “Mathematical Image Analysis”, *Institut Henri Poincaré*, Paris(France), January 13–15, 2014.

2013 Matheon Workshop “Compressed Sensing and its Applications”, *Technische Universität Berlin*, Berlin (Germany), December 9–13, 2013.

Talks and Posters

2025 Merantix Developer Day 2025, *AI Campus Berlin*, Berlin (Germany), August 29, 2025.
Title: “Can Compressing Foundation Models be as Easy as Image Compression?”

42th International Conference on Machine Learning (ICML), Vancouver (BC, Canada), July 19, 2025.
Title: “Compressing Large Language Models to Any Size Without Re-Computation” (poster in Workshop “ES-FoMo III: 3rd Workshop on Efficient Systems for Foundation Models”)

Ghost Day – Applied Machine Learning Conference, Poszan (Poland), May 10, 2025.
Title: “Can Compressing Foundation Models be as Easy as Image Compression?”

BLISS AI Speaker Series, Berlin (Germany), April 22, 2025.
Title: “Can Compressing Foundation Models be as Easy as Image Compression?”

2024 Merantix Developer Day 2024, *AI Campus Berlin*, Berlin (Germany), March 19, 2024.
Title: “From prototype to production with Ray”

Public AI Paper Spotlights, *AI Campus Berlin*, Berlin (Germany), February 6, 2024.
Title: “Towards foundational models for time-series data – How much can LLMs & GenAI help us?”

2023 **Conference "NeurIPS"**, New Orleans (LA, USA), December 16, 2023.
Title: "Self-Distilled Representation Learning for Time Series" (poster in Workshop "Self-Supervised Learning – Theory and Practice")

Conference "NeurIPS", New Orleans (LA, USA), December 14, 2023.
Title: "The Separation Capacity of Random Neural Networks" (poster in JMLR Journal-to-Conference Track)

Conference "NeurIPS", New Orleans (LA, USA), December 12, 2023.
Title: "Curve Your Enthusiasm: Concurvity Regularization in Differentiable Generalized Additive Models" (poster)

2022 **39th International Conference on Machine Learning (ICML)**, Baltimore (MD, USA), July 21, 2022.
Title: "Near-Exact Recovery for Tomographic Inverse Problems via Deep Learning" (long talk)

Cambridge Image Analysis Seminar, *University of Cambridge*, Cambridge (UK), June 23, 2022.
Title: "Robustness and Accuracy of Deep End-to-End Networks for Inverse Problems"

Follow-up Workshop "Mathematics of Data Science", *Hausdorff Research Institute for Mathematics*, Bonn (Germany), April 28, 2022.
Title: "Solving Inverse Problems With Deep Neural Networks – Robustness Included?"

SIAM IS22 Minisymposium "Data-Driven Methods in Inverse Problems & Imaging", *SIAM Conference on Imaging Science 2022 (virtual event)*, March 22, 2022.
Title: "Data-Driven Methods at the Noise-Free Limit: Near-Perfect Recovery Despite Undersampling?"

SIAM IS22 Minisymposium "Deeply Learned Regularization for Inverse Imaging Problems", *SIAM Conference on Imaging Science 2022 (virtual event)*, March 21, 2022.
Title: "Robustness of Deep End-to-End Methods for Inverse Problems"

Computational Analysis Seminar, *Vanderbilt University*, Nashville (TN, USA), March 16, 2022.
Title: "The Separation Capacity of Random Neural Networks"

Applied Mathematics Seminar, *KU Eichstätt-Ingolstadt*, Eichstätt (Germany), January 11, 2022.
Title: "The Separation Capacity of Random Neural Networks"

2021 **Conference "Inverse Days 2021"**, *Tampere University*, Tampere (Finland), December 15, 2021.
Title: "End-to-End CNN for Deblurring – Winning Contribution to the Helsinki Deblur Challenge 2021" (presentation by Theophil Trippe in Session "Helsinki Deblur Challenge 2021")

Conference "NeurIPS" (virtual event), December 14, 2021.
Title: "Near-Exact Recovery for Sparse-View CT via Data-Driven Methods" (poster in Workshop "Deep Learning and Inverse Problems")

FNRS Contact Group on "Wavelets and Applications" (virtual event), *UCLouvain*, Louvain-la-Neuve (Belgium), December 14, 2021.
Title: "Solving Inverse Problems With Deep Neural Networks – Robustness (and Accuracy) Included?" (invited guest speaker)

Workshop "Applied Harmonic Analysis and Data Science", *Mathematisches Forschungsinstitut Oberwolfach*, Oberwolfach (Germany), December 2, 2021.
Title: "Solving Inverse Problems With DeepNeural Networks – Robustness Included?"

Conference "DeepMath" (virtual event), November 4, 2021.
Title: "The Separation Capacity of Random Neural Networks" (poster)

Conference "Online-ICCHA" (virtual event), September 13, 2021.
Title: "A Unified Approach to Uniform Signal Recovery From Non-Linear Observations"

AAPM Annual Meeting (virtual event), *American Association of Physicists in Medicine (AAPM)*, July 28, 2021.
Title: "AAPM DL-sparse-view CT Challenge – Team name: robust-and-stable" (in Session "Grand Challenges: Deep Learning Sparse-View CT and DBTex")

GAMM Annual Meeting (virtual event), Kassel (Germany), March 16, 2021.
Title: "Solving Inverse Problems With Deep Neural Networks – Robustness Included?" (in Contributed Session S21 "Mathematical Signal and Image Processing")

IICU Seminar, *Utrecht University*, Utrecht (Netherlands), March 1, 2021.
Title: "Robustness Included? – Solving Inverse Problems With Deep Neural Networks"

2020 **Post Graduate Seminar – Chair for Mathematics of Information Processing**, *RWTH Aachen*, Aachen (Germany), December 17, 2020.
Title: "Robust Solutions to (Non-)Linear Inverse Problems: From Compressed Sensing to Deep Learning"

Applied Mathematics Seminar, *Utrecht University*, Utrecht (Netherlands), December 10, 2020.
Title: "Robustness Included? – Solving Inverse Problems With Deep Neural Networks"

Conference "iTWIST" (virtual event), Nantes (France), December 3, 2020.
Title: "Compressed Sensing with 1D Total Variation: Breaking Sample Complexity Barriers via Non-Uniform Recovery"

Oberseminar Applied Algebra and Analysis, *Technische Universität Braunschweig*, Brunswick (Germany), February 4, 2020.
Title: "A Non-Uniform Perspective on Analysis Sparsity in Compressed Sensing"

2019 **MINDS/CIS Seminar Series**, *Johns Hopkins University*, Baltimore (MD, USA), October 29, 2019.
Title: "A Non-Uniform Perspective on Analysis Sparsity in Compressed Sensing"

GAMM COMinDS Workshop "Computational and Mathematical Methods in Data Science", *Zuse Institute Berlin*, Berlin (Germany), October 24, 2019.
Title: "A New Perspective on ℓ^1-Analysis Recovery" (poster)

Conference "ILAS 2019: Linear Algebra Without Borders", *Fundação Getúlio Vargas*, Rio de Janeiro (Brazil), July 11, 2019.
Title: "A New Perspective on ℓ^1-Analysis Recovery" (in Minisymposium "Frame Theory and Data Science")

Conference "SPARS", *Engineering School ENSEEIHT*, Toulouse (France), July 1, 2019.
Title: "A New Perspective on ℓ^1-Analysis Recovery" (poster)

GAMM Annual Meeting, Vienna (Austria), February 21, 2019.
Title: "The Mismatch Principle: Statistical Learning Under Large Model Uncertainties" (in Contributed Session S21 "Mathematical Signal and Image Processing")

2018 **Workshop "Optimization, Machine Learning, and Data Science"**, *Technische Universität Braunschweig*, Brunswick (Germany), April 12, 2018.
Title: "The Mismatch Principle: What Can the Lasso Learn About Non-Linear Observations?"

Workshop "Applied Harmonic Analysis and Data Processing", *Mathematisches Forschungsinstitut Oberwolfach*, Oberwolfach (Germany), March 30, 2018.
Title: "The Mismatch Principle: An Ignorant Approach to Non-Linear Compressed Sensing?"

GAMM Annual Meeting, *Technische Universität München*, Munich (Germany), March 23, 2018.
Title: "Sparse Recovery From Superimposed Non-Linear Measurements" (in Contributed Session S21 "Mathematical Signal and Image Processing")

2017 **Matheon Conference "Compressed Sensing and its Applications"**, *Technische Universität Berlin*, Berlin (Germany), December 5, 2017.
Title: "Recovering Structured Data From Superimposed Non-Linear Measurements" (poster)

GAMM Workshop "Mathematical Signal Processing and Data Analysis", *Universität Bremen*, Bremen (Germany), September 19, 2017.
Title: "Sparse Recovery From Superimposed Non-Linear Measurements"

Conference "SPARS", *Instituto Superior Técnico*, Lisbon (Portugal), June 8, 2017.
Title: "Sparse Recovery From Superimposed Non-Linear Sensor Measurements"

Conference "Applied Inverse Problems", *Zhejiang University*, Hangzhou (China), May 29, 2017.
Title: "Feature Selection From Real-World Data With Non-Linear Observations" (in Minisymposium "Deep Neural Networks: Theory and Application")

GAMM Annual Meeting, Weimar (Germany), March 7, 2017.
Title: "Feature Selection From Real-World Data With Non-Linear Observations" (poster)

ICES Seminar, *University of Texas at Austin*, Austin (TX, USA), January 17, 2017.
Title: "Feature Selection From Real-World Data With Non-Linear Observations"

2016 **Analysis Oberseminar**, *RWTH Aachen*, Aachen (Germany), November 29, 2016.
Title: "Feature Selection From Real-World Data With Non-Linear Observations"

GAMM Workshop "Applied and Numerical Linear Algebra", *Technische Universität Hamburg*, Hamburg (Germany), September 15, 2016.
Title: "Towards a Mathematical Framework for Feature Selection From Real-World Data"

Conference “Time-Frequency Analysis and Related Topics”, Strobl (Austria), June 7, 2016.
Title: “Recovery of Structured Signals From Non-Linear Observations With General Convex Loss Functions” (poster)

Workshop “Harmonic Analysis, Graphs and Learning”, *Hausdorff Research Institute for Mathematics*, Bonn (Germany), March 15, 2016.
Title: “Recovery of Structured Signals From Non-Linear Observations With General Convex Loss Functions” (poster)

Forschungsseminar Diskrete Mathematik/Geometrie, *Technische Universität Berlin*, Berlin (Germany), March 2, 2016.
Title: “Convex Recovery of Structured Signals From Non-Linear Observations”

2015 Matheon Conference “Compressed Sensing and its Applications”, *Technische Universität Berlin*, Berlin (Germany), December 8, 2015.
Title: “Sparse Proteomics Analysis: Learning Forward Models via Compressed Sensing” (poster)

Winter School on Compressed Sensing, *Technische Universität Berlin*, Berlin (Germany), December 5, 2015.
Title: “Sparse Proteomics Analysis: Toward a Mathematical Theory for Feature Selection From Forward Models”

Student AIM Seminar, *University of Michigan*, Ann Arbor (MI, USA), November 6, 2015.
Title: “Sparse Proteomics Analysis: Toward a Mathematical Theory for Feature Selection From Forward Models”

Conference “SPARS”, *University of Cambridge*, Cambridge (UK), July 9, 2015.
Title: “Sparse Proteomics Analysis” (poster)

2014 Conference “ICCHA”, *Vanderbilt University*, Nashville (TN, USA), May 22, 2014.
Title: “Asymptotic Analysis of Inpainting via Universal Shearlet Systems and Clustered Sparsity” (talk and poster)