

Andreas Habring

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Education

University of Graz , PhD in applied mathematics	2020 - 2023
• Promotio sub auspiciis Praesidentis rei publicae (highest possible distinction for a doctorate in Austria) • Advisor: Prof. Martin Holler • Thesis: Mathematical analysis and application of data-driven methods for inverse imaging problems	
Graz University of Technology , MSc and BSc in applied mathematics	2015 - 2020
• GPA 1.0 (highest possible score)	
University of Graz , Law degree	2022 - today
• Out of personal interest	
HTBLuVA Salzburg , A-levels technical high school	2009 - 2014

Experience

Postdoctoral researcher , Graz University of Technology – Graz, Austria	2024 - today
• Vision, Learning, and Optimization group of Prof. Thomas Pock • Independent research, supervision of BSc and MSc theses • Teaching – Image processing and pattern recognition lecture (WS 2025) – Convex optimization lecture (SS 2025)	
Data scientist , AVL List GmbH Graz – Graz, Austria	2024 - 2024
• Battery health estimation and failure prediction	
University Assistant , University of Graz – Graz, Austria	2020 - 2023
• Research in mathematical image processing, inverse problems, machine learning, data science • Teaching computational math, advanced analysis, stochastics etc.	
Teaching assistant , Graz University of Technology – Graz, Austria	2016 - 2020
• Teaching several math exercises classes for engineering students	

Publications

- Andreas Habring et al. “Energy-based models for inverse imaging problems”. In: *arXiv preprint arXiv:2507.12432* (2025)
- Muhamed Kuric et al. “The Gaussian Latent Machine: Efficient Prior and Posterior Sampling for Inverse Problems”. In: *arXiv preprint arXiv:2505.12836* (2025)
- Andreas Habring, Alexander Falk, and Thomas Pock. “Diffusion at absolute zero: Langevin sampling using successive moreau envelopes”. In: *arXiv preprint arXiv:2502.01358* (2025)
- Andreas Habring, Alexander Falk, and Thomas Pock. “Diffusion at Absolute Zero: Langevin Sampling Using Successive Moreau Envelopes [conference paper]”. In: *2025 IEEE Statistical Signal Processing Workshop (SSP)*. IEEE. 2025, pp. 61–65
- Lorenz Fruehwirth and Andreas Habring. “Ergodicity of Langevin Dynamics and its Discretizations for Non-smooth Potentials”. In: *arXiv preprint arXiv:2411.12051* (2024)
- Andreas Habring and Martin Holler. “Neural-network-based regularization methods for inverse problems in imaging”. In: *GAMM-Mitteilungen* 47.4 (2024), e202470004
- Andreas Habring, Martin Holler, and Thomas Pock. “Subgradient Langevin Methods for Sampling from

Nonsmooth Potentials”. In: *SIAM Journal on Mathematics of Data Science* 6.4 (2024), pp. 897–925

- Dominik Narnhofer et al. “Posterior-Variance–Based Error Quantification for Inverse Problems in Imaging”. In: *SIAM Journal on Imaging Sciences* 17.1 (2024), pp. 301–333
- Andreas Habring and Martin Holler. “A note on the regularity of images generated by convolutional neural networks”. In: *SIAM Journal on Mathematics of Data Science* 5.3 (2023), pp. 670–692
- Christian Aarset et al. “Unsupervised energy disaggregation via convolutional sparse coding”. In: *IEEE Transactions on Consumer Electronics* 70.1 (2023), pp. 4303–4310
- Andreas Habring and Martin Holler. “A generative variational model for inverse problems in imaging”. In: *SIAM Journal on Mathematics of Data Science* 4.1 (2022), pp. 306–335

Selected conferences

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| • IEEE Statistical Signal Processing Workshop | 2025 |
| • BASP Frontiers | 2025 |
| • GAMM Annual Meeting | 2023 |
| • GAMM Workshop on Computational and Mathematical Methods in Data Science | 2022 |
| • IMA Conference on Inverse Problems from Theory to Application | 2022 |
| • SIAM Conference on Imaging Science | 2022 |
| • 2nd Alps-Adriatic Inverse Problems Workshop | 2021 |
| • International Conference on Computational Harmonic Analysis | 2021 |
| • IFIP TC7 Conference on System Modelling and Optimization | 2021 |
| • GAMM Annual Conference | 2021 |

Awards and honors

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| • Best Paper Award IEEE SSP 2025, first place | 2025 |
| • Promotio sub auspiciis Praesidentis rei publicae | 2025 |
| • Best Paper Award Doctoral School Mathematics and Scientific Computing Graz | 2021 |
| • Early Student Award Österreichische Mathematische Gesellschaft | 2018 |

Academic services

Reviews for, *SIAM Journal on Imaging Sciences* SIIMS, *Bernoulli Journal*, and *Springer Signal, Image and Video Processing*

Miscellaneous

- **Languages:** German (native), English.
- **Programming:** Python, Matlab, C++ (basics)
- **Research interests:** Inverse problems, data science, mathematical imaging, functional analysis, SDEs, Markov chain Monte Carlo sampling
- **Other technical skills:** Solid technical and physical knowledge due to attending a technical school with engineering bias and successful completion of university courses about theoretical mechanics, thermodynamics, quantum physics, and experimental physics
- **Hobbies:** Weightlifting, gymnastics, CrossFit, politics, concerts