

Latest Highlights

New Publications and Preprints

- M. Schott, D. León-Periñán, ..., T.M. Pentimalli, ..., N. Karaiskos, and N. Rajewsky (2024). **Open-ST: High-resolution spatial transcriptomics in 3D**. *Cell*. <https://doi.org/10.1016/j.cell.2024.05.055>
- K. Singh, K. H. Lee, D. Peláez, and A. Bande (2024). **Accelerating wavepacket propagation with machine learning**. *J. Comput. Chem.* <https://doi.org/10.1002/jcc.27443>

Conferences

“Better data is better than better algorithms.”

- Felipe Albrecht, Senior Scientist at Roche

Coming up:

HEIBRIDS PhD Recruitment

- *Call for applications, July 1-August 23, 2024*
- *Online interview week, October 14-16, 2024*

- D. Collin, Y. Shprits, S. Bianco, S. Hofmeister, and G. Gallego. **Forecasting Solar Wind Speed from Solar EUV Images**. (Poster presentation), *Helmholtz AI Conference*, Düsseldorf, Germany, 12-14 Jun 2024.
- T. Rettelbach, K. Heidler, N. Lehmann, I. Nitze, M. Langer, X. Zhu, J-C.Freytag, G. Grosse, and D. Kainmüller. **Cross-resolution image segmentation for mapping smallest ponds in the Arctic**. (Poster presentation), *Helmholtz AI Conference*, Düsseldorf, Germany, 12-14 June 2024.
- B. Groenke, K. Aalstad, S. Westermann, G. Gallego, J. Boike. **SimulationBasedInference.jl: A flexible toolkit for Bayesian inference with process-based models**. (Oral presentation), *Helmholtz AI Conference*, Düsseldorf, Germany, 12-14 June 2024.
- D. León-Periñán, N. Karaiskos, M. Schott, E. Splendiani, E. Senel, and N. Rajewsky. **Computational methods for high-resolution spatial transcriptomics**. (Poster presentation), *VIB Spatial Omics*, Ghent, Belgium, 13-14 June 2024.
- A. Lomashvili, K. Rammelkamp, O. Gasnault, P. Bhattacharjee, E. Clave, C. H. Egerland, S. Schroder, B. Demir, N. L. Lanza. **Optimized Martian Dust Displacement Detection Using Explainable Machine Learning**. (Poster presentation), *IEEE/CVF Conference on Computer Vision and Pattern Recognition Workshops (CVPRW)*. Seattle WA, USA, 17-21 June, 2024.

New HEIBRIDS faces

Claudia Winklmayr is a new HEIBRIDS associated student, working on the project “Uncertainty Assessment and Contrastive Explanations for Instance Segmentation”, supervised by Dagmar Kainmueller at the MDC. Welcome Claudia!

PhD Dissertations



On March 7, HEIBRiDS doctoral researcher **Kanishka Singh** defended successfully his PhD thesis with the title "Machine Learning Applications in Spectroscopy and Dynamics", at the Free University Berlin. Kanishka is now postdoctoral researcher at Sanofi Pharmaceuticals in Frankfurt.

On June 12, HEIBRiDS associated doctoral researcher **Felix Fiedler** defended successfully his PhD thesis on "Data-based Predictive Control" at the Technical University of Dortmund. Felix is now Software developer & control engineer at Viessmann Climate Solutions Berlin.

On June 25, HEIBRiDS doctoral researcher **Kevin Styp-Rekowski** defended successfully his PhD thesis with the title "Machine Learning Calibration of Satellite Platform Magnetometer Data" at the University of Rostock.

Congratulations to all three!

News from HEIBRiDS PIs

The HEIBRiDS PI **Annika Bande** is now holding a full professorship in Chemistry at Leibniz Hannover University. Her group at Helmholtz-Zentrum Berlin remains active in the field of machine learning for electron dynamics and spectroscopy.

Announcements

Training

If you are looking for a course on HPC, the Jülich Supercomputing Center offers a training programme of about 25 HPC-relevant courses per year. Have a look [here](#) for the upcoming courses.

BIFOLD Berlin Summer School

BIFOLD cordially invite you to participate in this year's summer school on "AI and the Urban: Making cities smart(er)?" that is taking place on **9-13 September 2024**. The scientific program includes keynote speeches, specialized lectures, workshops, and a group work task connected to smart cities taking place over the entire week. The Summer School is designed for doctoral students that are passionate about machine learning, data management and the impact of cutting-edge AI on society. For more information, please visit the [website](#) or contact Tina Schwabe at gs@bifold.tu-berlin.de. Deadline for registration: **July 15, 2024**.