

Curriculum Vitae - Korbinian Pöppel

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Education

2012 – 2015 Bachelor Physics, LMU Munich
grade: 1.02, 'best of semester'
2015 – 2018 Elite-Master Theoretical and Mathematical Physics, LMU/TUM,
grade: 1.1, 'with great distinction'
Master Physics, LMU Munich, grade: 1.1
2019 – 2023 Advanced Studies in Informatics (TU Munich) – grade: 1.2
2023 – 2025 ELLIS PhD Student JKU Linz – Artificial Intelligence – grade: 1.0
(best possible)

Scholarship

2025 Konrad Zuse Visiting ELLIS PhD Student Scholarship

Positions

2016 Research Assistant, LS Frey LMU Munich – Evolutionary Systems
2018 Research Assistant, LS Frey LMU Munich – Pattern Formation
2018 – Self-Employment in Software Development
2018 – 2019 PhD Student at MPI-IS Stuttgart (Active Acoustic Holography)
Advisor: Prof. Peer Fischer – resignation on own decision
Associate of Center of Learning Systems
2020 – 2021 Thesis: „Explainable NLP with Knowledge Graphs“ at inovex GmbH
2020 – 2021 Co-Founder of Norona GbR (Making Rapid tests visible)
2021 – 2022 First Machine Learning Engineer at docsy GmbH (now Knowlix)

- OCR integration
- data augmentation pipeline
- multi-modal training for document classification and NER

2023 Full-Time Research Engineer at IARAI GmbH (then transition to JKU)
2023 – 2025 Full-Time Research Assistant at JKU Linz
Advisor: Prof. Sepp Hochreiter

- co-developing xLSTM architecture (xLSTM)
- kernel development (FlashRNN)
- extending RNNs to multiple dimensions and graphs (pLSTM)

2024 – 2025 Co-Founder of OpenPV GbR (openpv.de)

- prototyping and feature development for web application

2024 – 2025 Part-Time PhD Researcher NXAI GmbH

- scaling xLSTM pre-training up (xLSTM-7B)
- lead LLM evaluation, long context extension training

2025 – Post-Doctoral Research Engineer ELLIS Institute Tübingen gGmbH

- unifying experimentation infrastructure
- scaling and speed experiments

Publications

Shulgin, E., Franke, JKH, von Rütte, D. et al. (2026). Deriving Hyperparameter Scaling Laws via Modern Optimization Theory. *High-Dimensional Learning Dynamics 2026*. <https://openreview.net/forum?id=gN4illcXOd>.

Siems, J., Grazzi, R., **Pöppel, K.**, Kalinin, K., Ballani, H., and Rahmani, B. (2026). Learning State-Tracking from Code Using Linear RNNs. <https://arxiv.org/abs/2602.14814>.

Shakya, S., Hartl, A. R., Hochreiter, S., & **Pöppel, K.** (2025) Adaptive Retrieval helps Reasoning in LLMs-but mostly if it's not used. In *EurIPS 2025 Workshop on Principles of Generative Modeling (PriGM)*. Retrieved from <https://openreview.net/pdf?id=lldcyeuR2r>

Pöppel, K. and Freinschlag, R. and Schmied, T. and Lin, W. and Hochreiter, S. (2025). pLSTM: parallelizable Linear Source Transition Mark networks. The Thirty-ninth Annual Conference on Neural Information Processing Systems. Retrieved from <https://openreview.net/forum?id=2sa13vyCn0>

Beck, M. and **Pöppel, K.** and Lippe, P., Hochreiter, S. (2025). Tiled Flash Linear Attention: More Efficient Linear RNN and xLSTM Kernels. The Thirty-ninth Annual Conference on Neural Information Processing Systems. Retrieved from <https://openreview.net/forum?id=b6H64u6Tql>

Beck, M.* , **Pöppel, K.***, Lippe, P.* Kurle, R., Blies, P. M., Klambauer, G., Böck, S. and Hochreiter, S. (2025). xLSTM 7B: A Recurrent LLM for Fast and Efficient Inference. Forty-second conference on Machine Learning. Retrieved from <https://openreview.net/forum?id=LV3DpKD08B>

Schmied, T., Adler, T., Patil, V., Beck, M., **Pöppel, K.**, Brandstetter, J., Klambauer, G., Pascanu, R., & Hochreiter, S. (2025). A large recurrent action model: xLSTM enables fast inference for robotics tasks. Forty-second International Conference on Machine Learning. Retrieved from <https://openreview.net/forum?id=J2JxJ0P1LI>

Pöppel, K., Beck, M., Hochreiter S. (2025). FlashRNN: I/O-Aware Optimization of Traditional RNNs on Modern Hardware. The Thirteenth International Conference on Learning Representations. Retrieved from <https://openreview.net/forum?id=l0ZzTvPfTw>

Alkin, B., Beck, M., **Pöppel, K.**, Hochreiter, S., & Brandstetter, J. (2024). Vision-LSTM: xLSTM as generic vision backbone. The Thirteenth International Conference on Learning Representations. Retrieved from <https://openreview.net/forum?id=SiH7DwNKZZ>

Beck, M.* , **Pöppel, K.***, Spanring, M., Auer, A., Prudnikova, O., Kopp, M. K., Klambauer, G., Brandstetter, J., & Hochreiter, S. (2024). xLSTM: Extended long short-term memory. *The Thirty-Eighth Annual Conference on Neural Information Processing Systems*. Retrieved from <https://openreview.net/forum?id=ARAxPPIAhq>

Ma, Z., Holle, A. W., Melde, K., Qiu, T., **Pöppel, K.**, Kadiri, V. M., & Fischer, P. (2020). Acoustic holographic cell patterning in a biocompatible hydrogel. *Advanced Materials*, 32(4), 1904181. <https://doi.org/10.1002/adma.201904181>