Max Klabunde

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Education

Ph.D. Computer Science Oct 2021 – 2026 (expected)
University of Passau, Passau, Germany
Working title: Comparing Neural Networks

M.S. Computer Science Oct 2018 – Sep 2021
RWTH Aachen University, Aachen, Germany
Grade: 1.4/1.0, Dean's list 2019/2020 (top 5%)

B.S. Electrical Engineering, Computer Engineering and Information Technology Oct 2015 – Sep 2018
RWTH Aachen University, Aachen, Germany
Grade: 2.0/1.0 (top 15%), Specialization in Computer Engineering

Work Experience

Researcher, University of Passau – Passau, Germany Oct 2021 – present
- Research on comparing neural networks, focusing on hidden state (representational similarity). Experience in text (LLMs), graph (GNNs), and vision domains
- Co-maintained and administrated Kubernetes compute infrastructure
- Teaching: designed and taught exercise class for master's-level courses *Introduction to Deep Learning* and *Responsible Machine Learning*, advised student projects in *Applied AI Lab*

Research And Development Intern, Signify – Eindhoven, The Netherlands June 2020 – Sep 2020
- Developed an activity tracking system for chickens in farms with instance segmentation, object tracking, and AWS Sagemaker

Student Research Assistant, RWTH Aachen University – Aachen, Germany Jul 2019 – Jan 2020
- Assisted in a research project on the stability of node embedding methods for graphs (arXiv 2020; an updated version was accepted at ECML PKDD 2021).

Skills

Technical: Python, Pytorch, LLM ecosystem, experience with Kubernetes, Linux, Containerization

Languages: English (fluent), German (native)

Publications

Max Klabunde*, Tassilo Wald*, Tobias Schumacher*, Klaus Maier-Hein, Markus Strohmaier, Florian Lemmerich. 2025. ReSi: A comprehensive benchmark for representational similarity measures. In *International Conference on Learning Representations*. **(ICLR 2025)**

Max Klabunde, Florian Lemmerich. 2025. Localizing reasoning training-induced changes in large language models. In *Mechanistic Interpretability Workshop at NeurIPS 2025*. **(MechInterp Workshop 2025)**

Max Klabunde*, Laura Caspari*, Florian Lemmerich. 2025. Revisiting the relation between robustness and universality. In *Second Workshop on Representational Alignment at ICLR 2025*. **(Re-Align 2025)**

Max Klabunde, Tobias Schumacher, Markus Strohmaier, Florian Lemmerich. 2025. Similarity of neural network models: a survey of functional and representational measures. In *ACM Computing Surveys*. **(ACM CSUR 2025)**

Max Klabunde, Mehdi Ben Amor, Michael Granitzer, Florian Lemmerich. 2023. Towards measuring representational similarity of large language models. In *UniReps: the First Workshop on Unifying Representations in Neural Models at NeurIPS 2023*. **(UniReps 2023)**

Max Klabunde, Florian Lemmerich. 2023. On the prediction instability of graph neural networks. In *Joint European Conference on Machine Learning and Knowledge Discovery in Databases*. **(ECML PKDD 2023)**

Tobias Schumacher, Hinrikus Wolf, Martin Ritzert, Florian Lemmerich, Jan Bachmann, Florian Frantzen, **Max Klabunde**, Martin Grohe, Markus Strohmaier. 2020. The effects of randomness on the stability of node embeddings. *arXiv preprint*. **(arXiv 2020)**

Service and Volunteering

Academic Service – Reviewing

- ICLR 2025 Workshop: Re-Align
- TMLR
- NeurIPS 2024 Workshop: Behavioral ML
- ICLR 2024 Workshop: Re-Align
- NeurIPS 2023 Workshop: UniReps

Other

- BSV Passau Badminton Club: board member ("Geschäftsführer") and team captain