Theresa **Eimer**

RL Team Lead at Leibniz University Hannover

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🤖 *AutoRL researcher at the Leibniz University Hannover (LUH)*
🤝 *Founding member of AutoRL.org, general chair of COSEAL and ELLIS member*
👥 *Host of the AutoML Podcast*
⚡ *Focus on AutoRL, Generalization in RL & Dynamic Algorithm Configuration*

Academic Career

Leibniz University Hannover — *Hannover, Germany*
Scientific Researcher — *Since Jan 2020*

- Establishing general Reinforcement Learning methods for and with AutoML
- Since 2023: RL Team Lead
- Since 2025: L3S Group Lead

Meta AI — *London, UK*
Research Intern — *Sep 2022 - Feb 2023*

- Generalization through Natural Language in Reinforcement Learning
- Host: Roberta Raileanu

Education

Leibniz University Hannover (LUH) — *Hannover, Germany*
PhD Student — *2020 - 2024*

- Thesis: Reinforcing Automated Machine Learning - Bridging AutoML and Reinforcement Learning *(summa cum laude)*
- Supervisor: Prof. Marius Lindauer. Committee: Prof. Wolfgang Nejdl, Prof. Joschka Boedecker, Jun.-Prof. Alexander Dockhorn

Albert-Ludwigs University Freiburg — *Freiburg i.B., Germany*
M.Sc. in Computer Science — *2016 - 2019*

- Thesis: Improved Meta-Learning for Dynamic Algorithm Configuration (Grade 1.0)
- Supervisor: Prof. Frank Hutter

Karlstad University — *Karlstad, Sweden*
ERASMUS Semester — *2015 - 2016*

University of Hamburg — *Hamburg, Germany*
B.Sc. in Computer Science — *2013 - 2016*

- Thesis: On Thue Numbers (Grade 1.0)
- Supervisor: Dr. Frank Heitmann

Publications

Google Scholar **DBLP** **0000-0001-5561-5908**

18 peer-reviewed publications – 667 citations – h-index 10 – i10 index 10

Journal & Conference Publications

1. M. Henheik, **T. Eimer**, and M. Lindauer. “Revisiting Learning Rate Control”. In: *Proceedings of the Fourth International Conference on Automated Machine Learning (AutoML’25)*. 2025.
2. A. Tornede, D. Deng, **T. Eimer**, J. Giovanelli, A. Mohan, T. Ruhkopf, S. Segel, D. Theodorakopoulos, T. Tornede, H. Wachsmuth, and M. Lindauer. “AutoML in the Age of Large Language Models: Current Challenges, Future Opportunities and Risks”. In: *Transactions on Machine Learning Research* (2024).
3. C. Benjamins*, **T. Eimer***, F. Schubert, S. Döhler, A. Mohan, A. Biedenkapp, B. Rosenhahn, F. Hutter, and M. Lindauer. “Contextualize Me - The Case for Context in Reinforcement Learning”. In: *Transactions on Machine Learning Research* (2023).

4. **T. Eimer**, M. Lindauer, and R. Raileanu. “Hyperparameters in Reinforcement Learning and How To Tune Them”. In: *Proceedings of the Fortieth International Conference on Machine Learning* (2023). *Acceptance rate: 27.9%, Conference Rating: A**.

5. S. Adriaensen, A. Biedenkapp, G. Shala, N. Awad, **T. Eimer**, M. Lindauer, and F. Hutter. “Automated Dynamic Algorithm Configuration”. In: *Journal of Artificial Intelligence Research* 75 (2022). *SCOPUS Rating 2022: Q2*, pp. 1633–1699.

6. J. Parker-Holder, R. Rajan, X. Song, A. Biedenkapp, Y. Miao, **T. Eimer**, B. Zhang, V. Nguyen, R. Calandra, A. Faust, F. Hutter, and M. Lindauer. “Automated Reinforcement Learning (AutoRL): A Survey and Open Problems”. In: *Journal of Artificial Intelligence Research* (2022).

7. **T. Eimer**, A. Biedenkapp, F. Hutter, and M. Lindauer. “Self-Paced Context Evaluation for Contextual Reinforcement Learning”. In: *Proceedings of the Thirty-eighth International Conference on Machine Learning (ICML’21)*. *Acceptance rate: 21.5%, Conference Rating: A**. 2021.

8. **T. Eimer**, A. Biedenkapp, M. Reimer, S. Adriaensen, F. Hutter, and M. Lindauer. “DACBench: A Benchmark Library for Dynamic Algorithm Configuration”. In: *Proceedings of the Thirtieth International Joint Conference on Artificial Intelligence (IJCAI’21)*. *Acceptance rate: 19.3%, Conference Rating: A**. ijcai.org, 2021.

9. A. Biedenkapp, H. F. Bozkurt, **T. Eimer**, F. Hutter, and M. Lindauer. “Dynamic Algorithm Configuration: Foundation of a New Meta-Algorithmic Framework”. In: *Proceedings of the European Conference on Artificial Intelligence (ECAI’20)*. *Acceptance rate: 26.8%, Conference Rating: A*. 2020.

Workshop & Preprints

1. J. Dierkes, **T. Eimer**, M. Lindauer, and H. Hoos. “Performance Prediction In Reinforcement Learning: The Bad And The Ugly”. In: *18th European Workshop on Reinforcement Learning (EWRL)*. 2025.

2. L. Fehring, M. Lindauer, and **T. Eimer**. “Growing with Experience: Growing Neural Networks in Deep Reinforcement Learning”. In: *Multi-disciplinary Conference on Reinforcement Learning and Decision Making (RLDM)*. 2025.

3. A. Mohan*, **T. Eimer***, C. Benjamins, A. Biedenkapp, and M. Lindauer. “Mighty: A Comprehensive Tool for studying Generalization, Meta-RL and AutoRL”. In: *18th European Workshop on Reinforcement Learning (EWRL)*. 2025.

4. M. Speckmann and **T. Eimer**. “Task Scheduling Forgetting in Multi-Task Reinforcement Learning”. In: *Multi-disciplinary Conference on Reinforcement Learning and Decision Making (RLDM)*. 2025.

5. J. Becktepe, J. Dierkes, C. Benjamins, D. Salinas, A. Mohan, R. Rajan, F. Hutter, H. Hoos, M. Lindauer, and **T. Eimer**. “ARLBench: Flexible and Efficient Benchmarking for Hyperparameter Optimization in Reinforcement Learning”. In: *17th European Workshop on Reinforcement Learning (EWRL)*. 2024.

6. C. Benjamins*, **T. Eimer***, F. Schubert, A. Biedenkapp, F. Hutter, B. Rosenhahn, and M. Lindauer. “CARL: A Benchmark for Contextual and Adaptive Reinforcement Learning”. In: *Ecological Theory of RL Workshop NeurIPS*. 2021.

7. Frederik Schubert*, **T. Eimer***, B. Rosenhahn, and M. Lindauer. “Automatic Risk Adaption in Distributional Reinforcement Learning”. In: *Workshop on Reinforcement Learning for Real Life (RL4RealLife@ICML’21)*. 2021.

8. **T. Eimer**, C. Benjamins, and M. Lindauer. “Hyperparameters in Contextual RL are Highly Situational”. In: *Ecological Theory of RL Workshop NeurIPS*. 2021.

9. **T. Eimer**, A. Biedenkapp, F. Hutter, and M. Lindauer. “Towards Self-Paced Context Evaluation for Contextual Reinforcement Learning”. In: *Workshop on Inductive Biases, Invariances and Generalization in RL (BIG@ICML’20)*. 2020.

Patents

1. **Eimer, T.**, F. Hutter, M. Lindauer, and Biedenkapp. “A method for training a machine learning algorithm by a reinforcement learning method”. German pat. G06N20/00. Robert Bosch GmbH. Oct. 4, 2024. URL: https://worldwide.espacenet.com/patent/search/family/090246319/publication/DE102022210480A1?q=pn%3DDE102022210480A1.

Blog Posts

1. J. Dierkes, **T. Eimer**, R. Rajan, A. Mohan, and A. Biedenkapp. “2024 in AutoRL”. In: *https://autorl.org* (Jan. 2025). URL: https://autorl.org/blog/retrospective-24/.
2. R. Rajan, **T. Eimer**, A. Mohan, and A. Biedenkapp. “2023 in AutoRL”. In: *https://autorl.org* (Jan. 2024). URL: https://autorl.org/blog/retrospective/.
3. **T. Eimer**. “Introducing Hypersweeper: Bridging the HPO Gap Between AutoML Research and ML Practitioners”. In: *://www.automl.org/automl-blog* (Sept. 2024). URL: https://www.automl.org/introducing-hypersweeper-bridging-the-hpo-gap-between-automl-research-and-ml-practitioners/.
4. **T. Eimer**. “Understanding Hyperparameter Optimization in Machine Learning”. In: *https://automl.space/* (Dec. 2024). URL: https://automl.space/understanding-hyperparameter-optimization-in-machine-learning/.
5. **T. Eimer**. “Hyperparameter Tuning in Reinforcement Learning is Easy, Actually”. In: *https://www.automl.org/automl-blog* (June 2023). URL: https://www.automl.org/hyperparameter-tuning-in-reinforcement-learning-is-easy-actually/.
6. **T. Eimer**. “Why You Should Try Science Communication During Your PhD”. In: *https://theeimer.github.io/blog/* (June 2023). URL: https://theeimer.github.io/blog/2023/scicomm/.
7. **T. Eimer** and C. Benjamins. “Contextualize Me – The Case for Context in Reinforcement Learning”. In: *https://www.automl.org/automl-blog* (June 2023). URL: https://www.automl.org/contextualize-me-the-case-for-context-in-reinforcement-learning/.
8. **T. Eimer**. “Benchmarking Dynamic Algorithm Configuration”. In: *https://www.automl.org/automl-blog* (June 2021). URL: https://www.automl.org/dacbench-benchmarking-dynamic-algorithm-configuration/.
9. **T. Eimer**. “Self-Paced Context Evaluation for Contextual Reinforcement Learning”. In: *https://www.automl.org/automl-blog* (July 2021). URL: https://www.automl.org/self-paced-context-evaluation-for-contextual-reinforcement-learning.

Collaborations

Since 2021	**Dr. Vu Nguyen**, Amazon Research - 1 Journal Paper, 1 Workshop	*Australia*
2021-2022	**Dr. Jack Parker-Holder**, Google DeepMind - 1 Journal Paper	*UK*
2022-2023	**Dr. Roberta Raileanu**, Meta - 1 Conference Paper	*UK*
Since 2021	**Dr. Aleksandra Faust**, Google DeepMind - 1 Journal Paper, 1 Workshop	*USA*
2021-2022	**Dr. Yingjie Miao**, Google DeepMind - 1 Journal Paper	*USA*
2021-2022	**Dr. Richard Song**, Google DeepMind - 1 Journal Paper	*USA*
Since 2020	**Dr. Steven Adriaensen**, Albert-Ludwigs University Freiburg - 1 Journal Paper, 1 Conference Paper	*Germany*
Since 2021	**Dr. Noor Awad**, Albert-Ludwigs University Freiburg - 1 Journal Paper	*Germany*
Since 2020	**Dr. André Biedenkapp**, Albert-Ludwigs University Freiburg - 3 Journal Papers, 3 Conference Papers, 2 Workshop Papers, 1 Workshop	*Germany*
Since 2025	**Dr. Katharina Eggensperger**, University of Tübingen - 1 Workshop (in progress)	*Germany*
2021-2022	**Prof. Roberto Calandra**, TU Dresden - 1 Journal Paper	*Germany*
Since 2024	**Prof. Holger Hoos**, RWTH Aachen - 1 Workshop Paper	*Germany*
Since 2020	**Prof. Frank Hutter**, Albert-Ludwigs University Freiburg - 3 Journal Papers, 3 Conference Papers, 1 Workshop Paper	*Germany*
Since 2020	**Prof. Marius Lindauer (PhD Advisor)**, Leibniz University Hannover - 4 Journal Papers, 4 Conference Papers, 5 Workshop Papers	*Germany*
2020-2023	**Prof. Bodo Rosenhahn**, Leibniz University Hannover - 1 Journal Paper, 2 Workshop Papers	*Germany*
Since 2023	**Prof. Henning Wachsmuth**, Leibniz University Hannover - 1 Journal Paper	*Germany*

Talks and Tutorials

European Workshop of Reinforcement Learning (EWRL) — *Tübingen, Germany*
Contributed Talk — *Sep 2025*
Reinforcement Learning Algorithms Are Misbehaved Black-Boxes

Autonomous Agents Research Group (University of Edinburgh) — *Virtual*
Invited Speaker — *Oct 2024*
Hyperparameter Optimization in Reinforcement Learning

European Conference of AI (ECAI) — *Santiago de Compostela, Spain*
Tutorial — *Oct 2024*
Beyond Trial & Error: A Tutorial On Automated Reinforcement Learning (together with Dr. André Biedenkapp)

AutoML Conference — *Paris, France*
Tutorial — *Sep 2024*
Beyond Trial & Error: A Tutorial On Automated Reinforcement Learning (together with Dr. André Biedenkapp)

AutoML Fall School — *Hannover, Germany*
Tutorial — *Sep 2024*
A Tutorial on Sustainable AutoRL (together with Dr. André Biedenkapp)

COSEAL Workshop — *Dresden, Germany*
Invited Speaker — *May 2024*
COSEAL for AutoRL

Instadeep — *Virtual*
Invited Speaker — *Mar 2024*
Automating Reinforcement Learning - Hyperparameters & Beyond

AutoML Seminar Series — *Virtual*
Invited Speaker — *Jun 2023*
Challenges in Hyperparameter Optimization for Reinforcement Learning

KompAKI Seminar Series — *Darmstadt, Germany*
Invited Speaker — *Jul 2022*
Dynamic Algorithm Configuration for AutoML

Organising

Visions4AI x Hannover — *Hannover, Germany*
Co-Organizer & Moderator — *Sep 2025*

AutoML Conference 2024 — *Paris, France*
Diversity Chair — *Sep 2024*

AutoRL Workshop at ICML 2024 — *Vienna, Austria*
Organiser — *Jul 2024*

CLAIRE Paper Highlights
Organiser — *May 2024*

AutoML Conference 2022 — *Baltimore, MA, USA*
Diversity Chair — *Jul 2022*

DAC4AutoML Competition at AutoML Conference 2022 — *Baltimore, MA, USA*
Organiser — *Jul 2022*

Public Outreach

May 2025 **VDI Young Engineers Congress Science Slam**, Popular Science Communication Format
Since 2024 **AutoML Podcast**, Host
Oct 2024 **Körber-Stiftung Science Slam**, Popular Science Communication Format
Sep 2024 **AutoML Conf Non-Traditional Content**, Musical Parody ”On the Dangers of Grid Search”
Nov 2023 **”Nacht die Wissen schafft”**, University Science Night: RL for all ages
Nov 2023 **”What’s Cooking?”**, Science cooking show: guest in the pilot episode
Sep 2023 **Phaeno Science Slam**, Popular Science Communication Format
May 2023 **AI Grid Science Slam**, Popular Science Communication Format, Second Place in Audience Voting
Apr 2023 **Meet the Scientist**, AI Days at Phaeno: RL for all ages

Research Visits

Jan 2025 **Holger Hoos at RWTH Aachen**, Design Decisions in RL — *Aachen, Germany*
Jul 2024 **Tome Eftimov at Jožef Stefan Institute**, Dynamic Algorithm Configuration and Instances — *Ljubljana, Slovenia*
Mar 2023 **Carola Doerr at Sorbonne Université Paris**, Combining BO and ES — *Paris, France*

Funding & Fellowships

2024/25 **Zeit Zia Fellow**, Fellowship program to further female early career scientists’ professional skills and connect them to mentors from industry and the public sector.
2024 **DFG Research Grant**, ”RoGeRL: Robust and General Reinforcement Learning via AutoML”, 335.000€, co-conception and co-writing with PI Prof. Marius Lindauer

Honors & Awards

Oct 2024 **Nominee Apfel Award for Excellent Teaching**, Nominated for the faculty’s teaching award
Nov 2023 **L3S Best Paper Award**, For our 2023 ICML paper on ”Hyperparameters in Reinforcement Learning and How To Tune Them”
Sep 2023 **Future of AI Summit 2023**, One of 19 young researchers selected by the Humboldt Foundation

Memberships & Committees

Since 2025	**Member,** European Laboratory for Learning and Intelligent Systems (ELLIS)	
Since 2024	**General Chair,** COSEAL Network for the Configuration and Selection of Algorithms	
Since 2023	**Member,** Diversity Committee of the Faculty of Electrical Engineering and Computer Science	*University Hannover*
2014 - 15	**Member,** Quality Assurance Commitee of the Faculty of Computer Science	*University Hamburg*

Teaching

Apr 2025 - Sep 2025	**Reinforcement Learning,** Graduate lecture: Co-Lecturer
Oct 2024 - Feb 2025	**Reinforcement Learning Project: Robotics,** Graduate level project course: Course development & Co-Lecturer, *Teaching evaluation: 1.0 (best possible)*
Apr 2024 - Sep 2024	**Advanced Topics in Reinforcement Learning,** Graduate lecture: Course development & Lecturer, *Teaching evaluation: 1.0 (best possible)*
Apr 2022 - Jul 2023	**Social Responsibility in Machine Learning,** Graduate lecture: Selecting lecture content and developing a discussion-first teaching format, *Teaching evaluation: 1.0 (best possible)*
Apr 2021 - Sep 2021	**Social Responsibility in Machine Learning,** Graduate seminar (Virtual): Content selection & presentation and report feedback. General course organization including deploying new teaching methods for virtual courses
Oct 2020 - Feb 2022	**Reinforcement Learning,** Graduate lecture: Creation and grading of exercises & final project. Teaching concepts for virtual, hybrid and in-person versions of the course, *Teaching evaluation: 1.5*
Apr 2020 - Sep 2020	**Automated Machine Learning,** Graduate seminar (Virtual): Content selection & presentation and report feedback. General course organization including setting up online teaching through Zoom

Mentoring

Since Jun 2025	**Jannis Kastner (BSc Thesis),** Offline RL Dataset Construction for DAC
Since Mar 2024	**Micha Henheik (BSc Thesis & Student Assistant),** Parameter-free Dynamic Algorithm Configuration
Apr 2024 - Apr 2025	**Jannis Becktepe (Student Assistant),** Benchmarking HPO for RL - *incoming PhD student with Prof. Sebastian Peitz*
Mar 2024 - Sep 2024	**Lukas Fehring (MSc Thesis),** Growing Neural Networks in RL - *PhD student with Prof. Marius Lindauer*
Sep 2023 - Dec 2025	**Thorben Klamm (MSc Thesis),** Generating Antibody Binding Site Sequences
Sep 2023 - Jul 2024	**Marc Speckmann (MSc Thesis),** Learning Theory for Curriculum Learning
Oct 2023 - Feb 2024	**Melissa Schween (Student Assistant),** Refining DAC for Learning Rate Control
May 2023 - Apr 2024	**Kai Lessmeister (MSc Thesis),** Representation Transfer in Reinforcement Learning
Jun 2021 - Dez 2021	**Dren Fazlija (MSc Thesis),** Self-Paced Context Evaluation for Dynamic Algorithm Configuration - *PhD student with Prof. Wolfgang Nejdl*
Jun 2021 - Dez 2021	**Rasmus von Glahn (MSc Thesis),** Optimizing Multiple Hyperparameters using a Reinforcement Learning Agent in high dimensional Search Space
May 2021 - Nov 2021	**Tilman Räuker (MSc Thesis),** Temporally Extended Reinforcement Learning for Dynamic Algorithm Configuration
Jul 2020 - Aug 2021	**Maximilian Reimer (Student Assistant),** Benchmarking Dynamic Algorithm Configuration

Reviewing

NeurIPS (2023, 2025), ICML (2022), RLC (2025), ECML(2022), AutoML Conf (2022, 2023, 2024, 2025), GECCO (2023), PPSN (2024), ECJ (2021), IEEE TCST (2025), EWRL (2023, 2024, 2025), ML Reproducibility Challenge (2023), CLAIRE Paper Highlights (2025), ALOE Workshop (2023)

Upskilling

Aug 2024	**Leadership**, Developing Leadership Skills IV - Conflict Management *(Leibniz University Hannover)*
Nov 2024	**Project Management**, Introduction to Modern Concepts of Project Management *(Leibniz University Hannover)*
Aug 2024	**Leadership**, Developing Leadership Skills III - Leading Teams *(Leibniz University Hannover)*
Jun 2024	**Communication**, Voice Matters! - What It Takes To Bring Science Across *(Hilde Weeg)*
Apr 2024	**Leadership**, Developing Leadership Skills II - Communication *(Leibniz University Hannover)*
Feb 2024	**Leadership:**, Developing Leadership Skills I - Self-Conception and Role Development *(Leibniz University Hannover)*
Nov 2023	**Teaching:**, Learning and Teaching With Digital Media *(Leibniz University Hannover)*
Sep 2023	**Communication:**, Workshop Technology Communication at the German Museum *(acatech)*
Apr 2023	**Communication:**, Coaching Session for Short Form Science Communication *(AI Grid)*

Software

24 - NOW	**Lead Developer**, **Hypersweeper**, new parallelization tool for ask-tell AutoML systems
24 - NOW	**Developer**, **Mighty** MetaRL library
21 - NOW	**Developer**, **CARL**, Benchmark for contextual reinforcement learning, 127 stars on GitHub
20 - NOW	**Lead Developer**, **DACBench** Benchmark for DAC, 27 stars on GitHub