

Aditya Mohan

PHD CANDIDATE IN REINFORCEMENT LEARNING AT LEIBNIZ UNIVERSITY HANNOVER

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- 👤 RL researcher with Prof. Dr. Marius Lindauer at Leibniz University Hannover (LUH)
- 👉 Founding member of autorl.org
- ⚡ Focus on Generalization and State Abstractions in RL, Meta-RL, and AutoRL

Academic Career

Leibniz University Hannover

Hannover, Germany

RESEARCHER AND PHD CANDIDATE

Since Oct 2021

- **Topic:** Generalization in Reinforcement Learning, Meta-Learning and Algorithm Configuration
- **Supervisor:** Prof. Marius Lindauer

Learning and Intelligent Systems Group

Berlin, Germany

RESEARCH INTERN

Oct 2020 - Dec 2020

- **Topic:** Plan-Conditioned Policies for Sample-Efficient RL
- **Supervisor:** Ingmar Schubert, Prof. Marc Toussaint

Education

Technical University of Berlin & EURECOM

Berlin, Germany

M.SC. IN AUTONOMOUS SYSTEMS

2019 - 2021

- **Thesis:** RL agents that quickly adapt to a partner for Ad-Hoc cooperation in the game of Hanabi (Grade 1.0)
- **Supervisor:** Prof. Klaus Obermayer

Manipal Institute of Technology

Karnataka, India

B.TECH. IN ELECTRONICS AND COMMUNICATION ENGINEERING

2013 - 2016

- **Thesis:** Development of Software for Autonomous Driving Support (Grade 1.0)
- **Supervisor:** Dr. S. Bhat M

Publications

🔗 Google Scholar 📄 DBLP 🆔 0000-0001-5561-5908

11 peer-reviewed publications – h-index 6 – i10 index 5

Journal & Conference Publications

- 1 **Aditya Mohan**, Amy Zhang, and Marius Lindauer. “Structure in Deep Reinforcement Learning: A Survey and Open Problems”. In: *Journal of Artificial Intelligence Research*. 2024.
- 2 Carolin Benjamins, Georgina Cenikj, Ana Nikolij, **Aditya Mohan**, Tome Eftimov, and M. Lindauer. “Instance Selection for Dynamic Algorithm Configuration with Reinforcement Learning: Improving Generalization”. In: *The Genetic and Evolutionary Computation Conference* (2024).
- 3 Alexander Tornede, Difan Deng, Theresa Eimer, Joseph Giovanelli, **Aditya Mohan**, Tim Ruhkopf, Sarah Segel, Daphne Theodorakopoulos, Tanja Tornede, Henning Wachsmuth, and Marius Lindauer. “AutoML in the Age of Large Language Models: Current Challenges, Future Opportunities and Risks”. In: *Transactions on Machine Learning Research* (2024).
- 4 **Aditya Mohan***, Carolin Benjamins*, Konrad Wienecke, Alexander Dockhorn, and Marius Lindauer. “AutoRL Hyperparameter Landscapes”. In: *Proceedings of the Second International Conference on Automated Machine Learning*. 2023.
- 5 Carolin Benjamins*, Theresa Eimer*, Frederik Schubert, **Aditya Mohan**, Sebastian Döhler, Andre Biedenkapp, Bodo Rosenhahn, Frank Hutter, and Marius Lindauer. “Contextualize Me - The Case for Context in Reinforcement Learning”. In: *Transactions on Machine Learning Research* (2023).

- 6 Mohammed Loni*, **Aditya Mohan***, Mehdi Asadi, and Marius Lindauer. "Learning Activation Functions for Sparse Neural Networks". In: *Proceedings of the Second International Conference on Automated Machine Learning*. 2023.
- 7 Tim Ruhkopf, **Aditya Mohan**, Difan Deng, Alexander Tornede, Frank Hutter, and Marius Lindauer. "MASIF: Meta-learned Algorithm Selection using Implicit Fidelity Information". In: *Transactions on Machine Learning Research* (2023).

Workshop & Preprints

- 1 **Aditya Mohan** and Marius Lindauer. "Towards Enhancing Representations in Reinforcement Learning using Relational Structure". In: *17th European Workshop on Reinforcement Learning (EWRL 2024)*. 2024.
- 2 Jannis Becktepe, Julian Dierkes, Carolin Benjamins, **Aditya Mohan**, David Salinas, Raghu Rajan, Frank Hutter, Holger Hoos, Marius Lindauer, and Theresa Eimer. "ARLBench: Flexible and Efficient Benchmarking for Hyperparameter Optimization in Reinforcement Learning". In: *17th European Workshop on Reinforcement Learning (EWRL 2024)*. 2024.
- 3 **Aditya Mohan**, Amy Zhang, and Marius Lindauer. "A Patterns Framework for Incorporating Structure in Deep Reinforcement Learning". In: *16th European Workshop on Reinforcement Learning (EWRL 2023)*. 2023.
- 4 **Aditya Mohan**, Tim Ruhkopf, and Marius Lindauer. "Towards Meta-learned Algorithm Selection using Implicit Fidelity Information". In: *ICML 2022 Workshop Adaptive Experimental Design and Active Learning in the Real World (ReALML 2022)*. 2022.

Honors & Awards

- Dec 2024 **Featured Publication in the Binare Magazine for excellent AI research**, *Hannover, Germany*
<https://www.l3s.de/magazine/>
- Oct 2024 **Best Publication Award – L3S**, For our JAIR paper "Structure in Deep Reinforcement Learning: A Survey and Open Problems" *Hannover, Germany*

Organising

- AutoML School 2024** *Hannover, Germany*
ORGANISER *Sept 2024*
- Keynote by Chelsea Finn: Meta-Learning for Education** *Baltimore, MA, USA*
MODERATOR *Jul 2022*
- DAC4AutoML Competition at AutoML Conference 2022** *Baltimore, MA, USA*
ORGANISER *Jul 2022*

Public Outreach

- Dec 2024 **CAIRNE Rising Researchers Network**, Organizing collaboration between Industry and Academia at a pan european level
- Oct 2024 **Winner – Haus der Wissenschaft Science Slam**, Popular Science Communication Format
- Sep 2024 **Meet the Scientist**, Interacting with School Students about AI
- Sep 2024 **AutoML Conf Non-Traditional Content**, Musical Parody "On the Dangers of Grid Search"
- July 2024 **AI Grid Science Slam**, Popular Science Communication Format, Second Place in Audience Voting
- Nov 2023 **Nacht der Wissenschaft**, University Science Night: RL for all ages

Research Visits

- Mar 2025 **Prof. Georg Martius at University of Tübingen**, Representation Learning from action-free video data for Downstream Control and RL *Tübingen, Germany*
- Jul 2023, Jul 2024 **Dr. Tome Eftimov at Jožef Stefan Institute**, Dynamic Algorithm Configuration using RL *Ljubljana, Slovenia*

Committees

Since 2024 **Member**, Hiring Committee of the Faculty of Computer Science *Leibniz Universität Hannover*

Reviewing

JAIR (2024), NeurIPS (2023), ICML (2022), AutoML Conf (2022, 2023, 2024), EWRL (2023, 2024), ICLR (2022, 2023), ICLR Tiny Papers (2023, 2024)

Teaching

- Oct 2024 - **Reinforcement Learning Project: Robotics**, Graduate level project course: Course development
Feb 2025 & Co-Lecturer
- Oct 2022 - **Reinforcement Learning**, Graduate lecture: Creation and grading of exercises & final project.
Feb 2024 Teaching concepts for virtual, hybrid, and in-person versions of the course, *Teaching evaluation: 1.5*
- Apr 2022 - **Reinforcement Learning Seminar**, Graduate lecture: Creation and grading of exercises & final project. Teaching concepts for virtual, hybrid, and in-person versions of the course, *Teaching evaluation: 1.0*
Jul 2022

Mentoring

- Since Oct 2024 **Jan Malte Töpperwein (ML Project)**, Hyperparameter Landscapes of Self-supervised Reinforcement Learning
- Since Apr 2024 **Tim Grunwald (ML Project, M.Sc Thesis)**, Prior-fitted Reinforcement Learning for Algorithm Selection
- Feb 2024 - **Dimitrios Timoleon (M.Sc Thesis)**, Enhancing Reinforcement Learning using Transformer-based Self-Predictive Representations
Aug 2024
- Feb 2024 - **Dennis Jabs (M.Sc Thesis)**, Improving Policy Optimization Using Return Landscapes
Aug 2024
- Since Jun 2023 **Wladislaw Petscherski (B.Sc Thesis, ML Project)**, Activation Functions for Transfer-learning in Reinforcement Learning
- Jan 2023 - **Lingxiao Kong (M.Sc Thesis)**, Impact of Hyperparameters on Sim2Real Transfer in Reinforcement Learning
May 2023
- Oct 2022 - **Konrad Wienecke (M.Sc Thesis)**, Dynamic Hyperparameter Landscapes in Reinforcement Learning
Mar 2023

Software

Since 2023 **Head Developer**, **Mighty** MetaRL library
Since 2021 **Developer**, **CARL**, Benchmark for contextual reinforcement learning, 127 stars on GitHub

References

- Prof. Marius Lindauer (PhD Supervisor, Leibniz University Hannover)**,
Contact E-Mail: m.lindauer@ai.uni-hannover.de
- Prof. Amy Zhang (Collaborator, University of Texas at Austin)**,
Contact E-Mail: amy.zhang@austin.utexas.edu