Aditya Mohan

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amsks.github.io

Research Interests

Generalization and Abstractions in RL, Deployable RL, Meta-RL, AutoRL

Academic Work Experience

Since 10.2021 **Ph.D. Student**, *Institute of Artificial Intelligence*, Leibniz University Hannover, Developing Robust and General (Meta-)RL methods, **Supervisor:** Marius Lindauer

09.2020 - 12.2020 **Research Intern**, *Learning and Intelligent Systems Lab*, Technical University of Berlin, Exploration in Reinforcement Learning through reward-shaping using trajectories generated from a planner, **Supervisors:** Ingmar Schubert, Marc Toussaint

Education

2019 – 2021 **M.Sc.**, *Autonomous Systems*, Technical University of Berlin and EURECOM, Grade: 1.5
Thesis: AI agents that quickly adapt to a partner for Ad-Hoc cooperation in the game of Hanabi (Grade 1.0 (1.0 being highest))
Supervisor: Klaus Obermayer

2014 – 2018 **B.Tech.**, *Electronics and Communication Engineering*, Manipal Institute of Technology, Grade: 1.7 (1.0 being highest)

Publications

Google Scholar DBLP 0000-0003-0092-3780

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] **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.

[4] 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.

[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] 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).

[9] 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).

Workshop Publications & Preprints

[7] **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.

[0] * indicates equal contribution of authors

[8] **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.

Community Involvement & Reviewing

2023 **AutoML Conf, Neurips, ICLR, CoLLAs, ICLR Tiny Papers**, Reviewer

2022 **AutoML Conf, ICML, ICLR**, Reviewer

2022 **DAC4AutoML, Dynamic Hyperparameter Configuration for RL**
Organizer

2022 **AutoMLConf 2022, Talk on Meta-Learning**
Host

Teaching and Organization Experience

Since 10.2023 **Machine Learning Project Course**, *Graduate Seminar*
Mentorship for pursuing novel directions in RL to work towards a master thesis topic.

Since 10.2022 **Reinforcement Learning**, *Graduate Lecture*
General course organization, deploying new teaching methods, and support in developing exercises. Lecture on Policy Gradients and Meta-RL.

Since 01.2022 **Leibniz AI Academy**, *Online Education Platform*
Creation of an online micro-degree program that agglomerates multiple AI-related courses.

04.2022 - 07.2022 **Reinforcement Learning**, *Graduate Seminar*
Content selection & presentation and report feedback. General course organization, including deploying new teaching methods.

Mentoring

04.2024 – Present **Tim Grunewald**, *ML Project*
Multi-fidelity Algorithm Selection using Reinforcement Learning

01.2024 – 07.2024 **Dimitrios Timoleon**, *M.Sc. Thesis*
Enhancing Transformer-based Reinforcement Learning agents through self-prediction

01.2024 – 07.2024 **Dennis Jabs**, *M.Sc. Thesis*
Improving Policy Optimization using Differentiable Return Landscapes

06.2023 – Present **Wladislaw Petscherski**, *B.Sc. Thesis, ML Project*
Activation Functions for Transfer-learning in Reinforcement Learning

01.2023 – 05.2023 **Lingxiao Kong**, *M.Sc. Thesis*
Impact of Hyperparameters on Sim2Real Transfer in Reinforcement Learning

10.2022 – 03.2022 **Konrad Wienecke**, *M.Sc. Thesis*
Dynamic Hyperparameter Landscapes in Reinforcement Learning