André Biedenkapp

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Personal Information

Date of birth: 13.07.1992
Nationality: German

Work experience

Position held

Machine Learning Lab — **Albert-Ludwigs-University Freiburg**
Scientific Researcher — *Since 10.2017*

Past positions

Machine Learning Lab — **Albert-Ludwigs-University Freiburg**
Student Assistant — *10.2015 – 09.2017*
Assisting in the implementation of research projects

Chair of Computer Architecture — **Albert-Ludwigs-University Freiburg**
Student Assistant — *04.2014 – 09.2014*
Maintenance of the mobile robots for the Hardware-Labcourse

Research Interests

- Dynamic Algorithm Configuration [see, e.g., 1, 5, 6, 11, 12, 15, 16]
- Learning to Learn [see, e.g., 9, 10]
- Deep Reinforcement Learning [see, e.g., 13, 23, 31]
- Automated Machine Learning and Reinforcement Learning [see, e.g., 4, 7, 14, 19]

Education

PhD (Dr. rer. nat.) — **Albert-Ludwigs-University Freiburg**
Supervised by Prof. Frank Hutter and Prof. Marius Lindauer — *2018 - 2022*
Thesis: Dynamic Algorithm Configuration by Reinforcement Learning (Grade: Summa Cum Laude)

Summer School — ***Reinforcement Learning Summer SCOOL* (RLSS'19)**
In: Lille, France — *July 2019*
Topics: *Reinforcement Learning and Bandits*

Computer Science — **Albert-Ludwigs-University Freiburg**
Master of Science (M.Sc.), Final Grade: 1.2 — *2014 – 2017*
Thesis: Per Instance Algorithm Configuration (Grade: 1.0)
Supervisor: Prof. Dr. Frank Hutter

Computer Science — **Albert-Ludwigs-University Freiburg**
Bachelor of Science (B.Sc.) — *2011 – 2014*
Thesis: Data Analysis for the Selection of Recording Channels on Multielectrode-Arrays (Grade: 1.7)
Supervisor: Prof. Dr. Wolfram Burgard

Teaching Experience

Meta-Algorithmics & AutoML
Undergraduate lecture — *04.2023*
Guest Lecture as part of the "Artificial Intelligence Practice" course at the St. Andrews University

Dynamic Algorithm Configuration and Optimization
Seminar — *10.2022 – 02.2023*

Responsible for setting up the seminar. Jointly held with Prof. Frank Hutter and Dr. Noor Awad

Automated Machine Learning
Lab course *10.2022 – 02.2023*
Responsible for setting up the lab course. Jointly held with Prof. Frank Hutter and Rhea Sukthanker

Teaching Assistant

Automated Machine Learning **(Flipped Classroom)**
Graduate course *04.2023 – 09.2023*
Creation and grading of exercises & final project.

Automated Machine Learning **(Flipped Classroom)**
Graduate course *04.2022 – 09.2022*
Creation and grading of exercises & final project.

Automated Machine Learning **Massive Open Online Course (MOOC)**
Graduate course *Published 04.2021*
Creation of coding exercises. Involved in setting up the MOOC

Automated Machine Learning **(Flipped Classroom)**
Graduate course, Virtual *04.2021 – 09.2021*
Creation and grading of exercises & final project. Setting up online teaching through Zoom and GitHub classroom.

Automated Machine Learning **(Flipped Classroom)**
Graduate course, Virtual *04.2020 – 09.2020*
Creation and grading of exercises & final project. Setting up online teaching through Zoom and GitHub classroom.

Automated Machine Learning
Graduate course *04.2019 – 09.2019*
Creation and grading of exercises & final project

Machine Learning for Automated Algorithm Design
Graduate course *10.2018 – 03.2019*
Creation and grading of exercises & final project

Machine Learning for Automated Algorithm Design
Graduate course *10.2017 – 03.2018*
Creation and grading of exercises & final project

Hardware-Labcourse
Undergraduate course *04.2014 – 09.2014*
Assisting students with practical exercises

Student Supervision

MSc Thesis
Florian Diederichs, Joint supervision with N. Awad *09.2022 – 02.2023*
On the Applicability of Offline Reinforcement Learning for Dynamic Algorithm Configuration of Differential Evolution

MSc Thesis
Baohe Zhang, Joint supervision with R. Rajan, Published at AISTATS'21 *04.2020 – 10.2020*
On the Importance of Hyperparameter Optimization in Model-based Reinforcement Learning

MSc Project & Thesis
Gresa Shala, Published at PPSN'20 *04.2019 – 05.2020*
Learning to Optimize CMA-ES

MSc Thesis
Furkan Bozkurt *03.2019 – 11.2019*
RL-DCBO: Reinforcement Learning Guided Dynamic Control for Bayesian Optimization

MSc Thesis
Theresa Eimer, Follow up work published at ICML'21 *12.2018 – 09.2019*
Improved Meta-Learning for Algorithm Control through Self-Paced Learning

MSc Thesis
Kevin Hättig *12.2018 – 09.2019*

Model-Based Population Based Training

MSc Thesis

Oliver Brunner, Joint supervision with D. Speck at GKI-Freiburg *11.2018 – 04.2019*

Learning Domain-Independent Heuristics with Deep Neural Networks

MSc Project

Theresa Eimer & Kevin Hättig *04.2018 – 12.2018*

Algorithm State Description for Algorithm Control

Publications

Google Scholar DBLP 0000-0002-8703-8559

Thesis

[1] **A. Biedenkapp**. "Dynamic Algorithm Configuration by Reinforcement Learning". *Grade: Summa Cum Laude (best possible grade)*. PhD thesis. Freiburg, Germany: University of Freiburg, Department of Computer Science, Machine Learning Chair, Oct. 2022.

[2] **A. Biedenkapp**. "Per Instance Algorithm Configuration". *Grade: 1.0 (best possible grade)*. Master's Thesis. Freiburg, Germany: University of Freiburg, Department of Computer Science, Machine Learning Chair, 2017.

[3] **A. Biedenkapp**. "Data Analysis for the Selection of Recording Channels on Multielectrode-Arrays". Bachelor's Thesis. Freiburg, Germany: University of Freiburg, Department of Computer Science, Autonomous Intelligent Systems, Mar. 2014.

Journal & Conference Publications

[4] G. Shala, **A. Biedenkapp**, F. Hutter, and J. Grabocka. "Gray-Box Gaussian Processes for Automated Reinforcement Learning". In: *Proceedings of the International Conference on Learning Representations (ICLR'23)*. Published online: `iclr.cc`, *Acceptance rate: 31.8%, Conference Rating: A**. 2023.

[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 (JAIR)* 75 (2022), pp. 1633–1699. DOI: `https://doi.org/10.1613/jair.1.13922`.

[6] **A. Biedenkapp***, N. Dang*, M. S. Krejca*, F. Hutter, and C. Doerr. "Theory-inspired Parameter Control Benchmarks for Dynamic Algorithm Configuration". In: *Proceedings of the Genetic and Evolutionary Computation Conference (GECCO'22)*. **Joint first authorship**, *Conference Rating: A*, *Won the Best Paper Award (GECH track)*. ACM, July 2022.

[7] 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 (JAIR)* 74 (2022). *Journal Rating: A*, pp. 517–568. DOI: `https://doi.org/10.1613/jair.1.13596`.

[8] M. Lindauer, K. Eggensperger, M. Feurer, **A. Biedenkapp**, D. Deng, C. Benjamins, R. Sass, and F. Hutter. "SMAC3: A Versatile Bayesian Optimization Package for Hyperparameter Optimization". In: *Journal of Machine Learning Research (JMLR) – MLOSS* 23.54 (2022). *Journal Rating: A**, pp. 1–9.

[9] **A. Biedenkapp**, R. Rajan, F. Hutter, and M. Lindauer. "TempoRL: Learning When to Act". In: *Proceedings of the Thirty-eighth International Conference on Machine Learning*. *Acceptance rate: 21.5%, Conference Rating: A**. July 2021, pp. 914–924.

[10] 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*. *Acceptance rate: 21.5%, Conference Rating: A**. July 2021, pp. 2948–2958.

[11] 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, Aug. 2021, pp. 1668–1674.

[12] D. Speck*, A. **Biedenkapp***, F. Hutter, R. Mattmüller, and M. Lindauer. "Learning Heuristic Selection with Dynamic Algorithm Configuration". In: *Proceedings of the Thirty-First International Conference on Automated Planning and Scheduling (ICAPS'21)*. **Joint first authorship**, *Acceptance rate: ~30%, Conference Rating: A**. Aug. 2021, pp. 597–605.

[13] B. Zhang, R. Rajan, L. Pineda, N. Lambert, **A. Biedenkapp**, K. Chua, F. Hutter, and R. Calandra. "On the Importance of Hyperparameter Optimization for Model-based Reinforcement Learning". In: *Proceedings of the International Conference on Artificial Intelligence and Statistics (AISTATS'21). Acceptance rate: 29.8%, Conference Rating: A*. Apr. 2021.

[14] J. KH Franke, G. Köhler, **A. Biedenkapp**, and F. Hutter. "Sample-Efficient Automated Deep Reinforcement Learning". In: *Proceedings of the International Conference on Learning Representations (ICLR'21)*. Published online: `iclr.cc`, *Acceptance rate: 28.7%, Conference Rating: A**. May 2021.

[15] G. Shala*, **A. Biedenkapp***, N. Awad, S. Adriaensen, F. Hutter, and M. Lindauer. "Learning Step-Size Adaptation in CMA-ES". In: *Proceedings of the Sixteenth International Conference on Parallel Problem Solving from Nature (PPSN'20)*. **Joint first authorship**, *Conference Rating: A*. Sept. 2020, pp. 691–706.

[16] **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). Acceptance rate: 26.8%, Conference Rating: A*. June 2020, pp. 427–434.

[17] **A. Biedenkapp**, J. Marben, M. Lindauer, and F. Hutter. "CAVE: Configuration Assessment, Visualization and Evaluation". In: *Proceedings of the International Conference on Learning and Intelligent Optimization (LION'18)*. June 2018.

[18] **A. Biedenkapp**, M. Lindauer, K. Eggensperger, C. Fawcett, H. Hoos, and F. Hutter. "Efficient Parameter Importance Analysis via Ablation with Surrogates". In: *Proceedings of the AAAI conference. Acceptance rate: 24.6%, Conference Rating: A**. Feb. 2017, pp. 773–779.

Workshop Publications & Preprints

[19] G. Shala, **A. Biedenkapp**, F. Hutter, and J. Grabocka. "Gray-Box Gaussian Processes for Automated Reinforcement Learning". In: *Workshop on Meta-Learning (MetaLearn@NeurIPS'22)*. 2022.

[20] G. Shala, S. Pineda Arango, **A. Biedenkapp**, F. Hutter, and J. Grabocka. "AutoRL-Bench 1.0". In: *Workshop on Meta-Learning (MetaLearn@NeurIPS'22)*. 2022.

[21] R. Sass, E: Bergman, **A. Biedenkapp**, F. Hutter, and M. Lindauer. "DeepCAVE: An Interactive Analysis Tool for Automated Machine Learning". In: *Workshop on Adaptive Experimental Design and Active Learning in the Real World (ReALML@ICML'22)*. 2022.

[22] **A. Biedenkapp**, D. Speck, S. Sievers, F. Hutter, M. Lindauer, and J. Seipp. "Learning Domain-Independent Policies for Open List Selection". In: *Workshop on Bridging the Gap Between AI Planning and Reinforcement Learning (PRL@ICAPS'22)*. 2022.

[23] C. Benjamins, T. Eimer, F. Schubert, **A. Biedenkapp**, B. Rosenhan, F. Hutter, and M. Lindauer. "CARL: A Benchmark for Contextual and Adaptive Reinforcement Learning". In: *Workshop on Ecological Theory of Reinforcement Learning (EcoRL@NeurIPS'21)*. Sept. 2021.

[24] S. Izquierdo, J. Guerrero-Viu, S. Hauns, G. Miotto, S. Schrodi, **A. Biedenkapp**, T. Elsken, D. Deng, M. Lindauer, and F. Hutter. "Bag of Baselines for Multi-objective Joint Neural Architecture Search and Hyperparameter Optimization". In: *Workshop on Automated Machine Learning (AutoML@ICML'21)*. May 2021.

[25] S. Müller, **A. Biedenkapp**, and F. Hutter. "In-Loop Meta-Learning with Gradient-Alignment Reward". In: *AAAI workshop on Meta-Learning Challenges (MetaLearning@AAAI'21)*. Feb. 2021.

[26] N. Awad, G. Shala, D. Deng, N. Mallik, M. Feurer, K. Eggensperger, **A. Biedenkapp**, D. Vermetten, H. Wang, C. Doerr, M. Lindauer, and F. Hutter. "Squirrel: A Switching Hyperparameter Optimizer Description of the entry by AutoML.org & IOHprofiler to the NeurIPS 2020 BBO challenge". In: ***arXiv***:*2012.08180* (Dec. 2020). **Winning entry of the BBO Competition@NeurIPS'20 on a meta-learnable search space**.

[27] **A. Biedenkapp**, R. Rajan, F. Hutter, and M. Lindauer. "Towards TempoRL: Learning When to Act". In: *Workshop on Inductive Biases, Invariances and Generalization in RL (BIG@ICML'20)*. July 2020.

[28] 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)*. July 2020.

[29] **A. Biedenkapp**, H. F. Bozkurt, F. Hutter, and M. Lindauer. "Towards White-Box Benchmarks for Algorithm Control". In: *IJCAI 2019 DSO Workshop*. Aug. 2019.

[30] M. Lindauer, M. Feurer, K. Eggensperger, **A. Biedenkapp**, and F. Hutter. "Towards Assessing the Impact of Bayesian Optimization's Own Hyperparameters". In: *IJCAI 2019 DSO Workshop*. Aug. 2019.

[31] C. Benjamins, T. Eimer, F. Schubert, A. Mohan, **A. Biedenkapp**, B. Rosenhan, F. Hutter, and M. Lindauer. "Contextualize Me – The Case for Context in Reinforcement Learning". In: ***arXiv***:*2202.04500 [cs.LG]* (2022).

[32] R. Rajan, J. L. B. Diaz, S. Guttikonda, F. Ferreira, **A. Biedenkapp**, and Frank Hutter. "MDP Playground: Controlling Dimensions of Hardness in Reinforcement Learning". In: ***arXiv***:*1909.07750v3* (Oct. 2020).

[33] M. Lindauer, K. Eggensperger, M. Feurer, **A. Biedenkapp**, J. Marben, P. Müller, and F. Hutter. "BOAH: A Tool Suite for Multi-Fidelity Bayesian Optimization & Analysis of Hyperparameters". In: ***arXiv***:*1908.06756* (Aug. 2019).

Blog Posts

[34] **A. Biedenkapp**, R. Rajan, F. Hutter, and M. Lindauer. "TempoRL - Learning When to Act". In: *Personal Blog* (May 2022). URL: `https://andrebiedenkapp.github.io/blog/2022/temporl/`.

[35] **A. Biedenkapp**, N. Dang, M. S. Krejca, F. Hutter, and C. Doerr. "Theory-Inspired Parameter Control Benchmarks for DAC". In: *Personal Blog* (May 2022). URL: `https://andrebiedenkapp.github.io/blog/2022/gecco/`.

[36] N. Lambert, B. Zhang, R. Rajan, and **A. Biedenkapp**. "The Importance of Hyperparameter Optimization for Model-based Reinforcement Learning". In: *https://bair.berkeley.edu/blog* (Apr. 2021). URL: `https://bair.berkeley.edu/blog/2021/04/19/mbrl/`.

[37] R. Rajan, **A. Biedenkapp**, T. F. Runge, and J. Franke. "AutoRL: AutoML in the Realm of Deep Reinforcement Learning". In: *https://www.automl.org/automl-blog* (Apr. 2021). URL: `https://www.automl.org/blog-autorl`.

[38] **A. Biedenkapp**. "Learning Step-Size Adaptation in CMA-ES". In: *https://www.automl.org/automl-blog* (Aug. 2020). URL: `https://www.automl.org/learning-step-size-adaptation-in-cma-es`.

[39] **A. Biedenkapp**. "Dynamic Algorithm Configuration". In: *https://www.automl.org/automl-blog* (Feb. 2020). URL: `https://www.automl.org/dynamic-algorithm-configuration`.

[40] **A. Biedenkapp** and F. Hutter. "BOHB". In: *https://www.automl.org/automl-blog* (Aug. 2018). URL: `https://www.automl.org/blog_bohb`.

[41] **A. Biedenkapp**, K. Eggensperger, M. Feurer, and F. Hutter. "2nd AutoML Challenge". In: *https://www.automl.org/automl-blog* (Aug. 2018). URL: `https://www.automl.org/blog-2nd-automl-challenge`.

Patents

[42] **A. Biedenkapp**, G. Shala, S. Adriaensen, N. Awad, M. Lindauer, and F. Hutter. "Method and Device for Learning a Strategy and for Implementing the Strategy". U.S. pat. req. 17/305,586. Robert Bosch GmbH. July 9, 2021. Filed.

[43] S. Müller, **A. Biedenkapp**, and F. Hutter. "Verbesserte Vorrichtung zum Anlernen von maschinellen Lernsysteme für Bildverarbeitung". German pat. DE202021100225. Robert Bosch GmbH. Feb. 12, 2021. URL: `https://depatisnet.dpma.de/DepatisNet/depatisnet?action=bibdat&docid=DE202021100225U1`.

[44] D. Speck, **A. Biedenkapp**, R. Matmüller, F. Hutter, and M. Lindauer. "Device and Method for Planning and Operation of a Technical System". U.S. pat. req. 17/242,790. Robert Bosch GmbH. Apr. 28, 2021. Filed.

[45] D. Speck, **A. Biedenkapp**, R. Matmüller, F. Hutter, and M. Lindauer. "Device and Method for Planning and Operation of a Technical System". European pat. req. EP20178576.3 – 1203. Robert Bosch GmbH. *Also filed requests for US patent and CN patent.* June 1, 2020. URL: `http://v3.espacenet.com/textdoc?IDX=EP3920103`. Filed.

[46] **A. Biedenkapp**, H. F. Bozkurt, F. Hutter, and M. Lindauer. "Method, Device and Computer Program for Adjusting a Hyperparameter". European pat. req. EP3748551. Robert Bosch GmbH. June 11, 2020. URL: `http://v3.espacenet.com/textdoc?IDX=EP3748551`. Filed.

Presentations

Invited Talks & Competitively-Selected Tutorials

Meta-Algorithmics & AutoML
Invited Lecture (part of CS5011), University of St. Andrews, Scotland (online) *04.2023*

Learning to Dynamically Optimise Algorithms
Seminar on Advances in Probabilistic Machine Learning, Aalto University Helsinki, Finland (online) *11.2022*

Dynamic Algorithm Configuration
ELLIS Meetup Freiburg, Freiburg, Germany *03.2022*

Advances of Dynamic Algorithm Configuration
Bosch Center for Artificial Intelligence, Renningen, Germany *06.2021*

Algorithm Configuration: Challenges, Methods and Perspectives
IJCAI 2020 Tutorial *01.2021*
Jointly with Prof. Marius Lindauer

Algorithm Configuration: Challenges, Methods and Perspectives
PPSN 2020 Tutorial *09.2020*
Jointly with Prof. Marius Lindauer

Challenges of Dynamic Algorithm Configuration
Bosch Center for Artificial Intelligence, Renningen, Germany *03.2020*

Dynamic Algorithm Configuration
Institut für Informationsverarbeitung (TNT), University of Hannover *01.2020*

Conference Presentations

The Genetic and Evolutionary Computation Conference **Online**
GECCO (Oral, Joint video presentation with all authors) *07.2022*
Theory-inspired Parameter Control Benchmarks for Dynamic Algorithm Configuration

International Conference on Machine Learning **Online**
ICML (Poster) *07.2021*
TempoRL: Learning When to Act

International Conference on Parallel Problem Solving from Nature **Leiden**
PPSN (Poster), Netherlands *08.2020*
Learning Step-SizeAdaptation in CMA-ES

European Conference on Artificial Intelligence **Santiago de Compostela**
ECAI (Oral), Spain *08.2020*
Dynamic Algorithm Configuration: Foundation of a New Meta-Algorithmic Framework

Learning and Intelligent OptimizatioN Conference **Kalamata**
LION (Oral), Greece *06.2018*
CAVE: Configuration Assessment, Visualization and Evaluation

AAAI Conference on Artificial Intelligence **San Francisco**
AAAI (Poster), California, USA *02.2017*
Efficient Parameter Importance Analysis via Ablation with Surrogates

Workshop Presentations

Bridging the Gap Between AI Planning and Reinforcement Learning **Online**
PRL@ICAPS'22 *06.2022*
Learning Domain-Independent Policies for Open List Selection

Inductive Biases, Invariances and Generalization in Reinforcement Learning **Online**
BIG@ICML'20 *07.2020*
Towards TempoRL: Learning When to Act

Data Science Meets Optimisation **Macau**
DSO@IJCAI'19, Macau (SAR), China *08.2019*
Towards White-box Benchmarks for Algorithm Control

Scholarships, Honors and Awards

Best Paper Award
GECCO'22, Theory-inspired Parameter Control Benchmarks for Dynamic Algorithm Configuration *2022*
GECH Track

Best Reviewers (Top 10%)
ICML'21 *2021*

Black-Box Optimization Competiton@NeurIPS'20 **1st place**
Part of the AutoML & IOHprofiler Team, 1st place on a meta-learning friendly search space *2020*
Leaderboard: `https://bbochallenge.com/altleaderboard`

Black-Box Optimization Competiton@NeurIPS'20 **3rd place***
Part of the AutoML & IOHprofiler Team, Leaderboard: https://bbochallenge.com/leaderboard *2020*
*Due to a bug the initial evaluation failed. After re-evaluation our team would have gotten the third place.

Professional Service

Organizer

AutoML Conference - Online Experience Chair
2023, Jointly with Hayeon Lee, Mohammed Abdelfattah & Richard Song

COSEAL Chair
since August 2022, Jointly with Alexander Tornede and Lennart Schäpermeier

2nd AutoML Fall School
2022, Co-Organiser

ELLIS Unit Meetups Freiburg
since July 2022, Co-Organiser with Simon Ging

Journal Reviewing

Journal of Artificial Intelligence Research **JAIR**
2022

IEEE Transactions on Evolutionary Computation **TEVC**
2022

Computational Intelligence **CI**
2022

Journal of the Association for Computing Machinery **Journal of the ACM**
2022, 2021

Program Committee Membership at Conferences

AAAI Conference on Artificial Intelligence **AAAI**
2018

AutoML Conference **AutoML**
2023, 2022

European Conference on Artificial Intelligence **ECAI**
2020

European Workshop on Reinforcement Learning **EWRL**
2022

International Conference on Machine Learning **ICML**
2023, 2021, 2019

Neural Information Processing Systems **NeurIPS**
2022, 2021

NeurIPS Datasets and Benchmarks **NeurIPS DBT**
2021 (Track 1 & Track 2)

Program Committee Membership at Workshops

ICLR Workshop on Agent Learning in Open-Endedness **ALOE**
2022

ICML Workshop on Automated Machine Learning **AutoML@ICML**
2021, 2020, 2019, 2018

NeurIPS Workshop on Meta-Learning **MetaLearn@NeurIPS**
2019

Programming Skills

Excellent: Python, Bash, LaTeX **Good**: C, C#, C++, Julia **Basic**: Matlab, Java

Selected Open-Source Projects

GitHub Page: `https://github.com/AndreBiedenkapp`

https://github.com/automl/DAC *DAC*
Role: Developer
DAC is the first dynamic algorithm configurator which enables configuration not only to specific problem instances but also at each time-step. To gain insights into the strengths and weaknesses of this reinforcement learning based configurator DAC comes with example white-box benchmarks.

https://github.com/automl/DACBench *DACBench*

Role: Contributor
DACBench is a benchmark library for Dynamic Algorithm Configuration. Its focus is on reproducibility and comparability of different DAC methods as well as easy analysis of the optimization process.

https://github.com/automl/ParameterImportance *PyImp*
Role: Developer
PyImp is an easy to use tool that helps developers to identify the most important parameters of their algorithms. Given the data of a configuration run with SMAC3, PyImp allows for usage of various parameter importance methods to determine which parameters have the most influence on the algorithms behaviour.

https://github.com/automl/SMAC3 *SMAC3*
Former Role: Contributor
Python implementation of SMAC (sequential model-based algorithm configuration). SMAC is a tool for automated algorithm configuration.

Languages

Native: German **Fluent**: English **Basic**: French