

André Biedenkapp

✉ biedenka@cs.uni-freiburg.de • github.com/andrebiddenkapp

Personal Information

Date of birth: 13.07.1992

Nationality: German

Work experience

Position held

Machine Learning Lab
Scientific Researcher

Albert-Ludwigs-University Freiburg
Since 10.2017

Past positions

Machine Learning Lab
Student Assistant

Albert-Ludwigs-University Freiburg
10.2015 – 09.2017

Assisting in the implementation of research projects

Chair of Computer Architecture
Student Assistant

Albert-Ludwigs-University Freiburg
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.)

Supervised by Prof. Frank Hutter and Prof. Marius Lindauer

Albert-Ludwigs-University Freiburg
2018 - 2022

Thesis: Dynamic Algorithm Configuration by Reinforcement Learning (Grade: Summa Cum Laude)

Summer School

In: Lille, France

Reinforcement Learning Summer SCHOOL (RLSS'19)

July 2019

Topics: Reinforcement Learning and Bandits

Computer Science

Master of Science (M.Sc.), Final Grade: 1.2

Albert-Ludwigs-University Freiburg
2014 – 2017

Thesis: Per Instance Algorithm Configuration (Grade: 1.0)

Supervisor: Prof. Dr. Frank Hutter

Computer Science

Bachelor of Science (B.Sc.)

Albert-Ludwigs-University Freiburg
2011 – 2014

Thesis: Data Analysis for the Selection of Recording Channels on Multielectrode-Arrays (Grade: 1.7)

Supervisor: Prof. Dr. Wolfram Burgard

Teaching Experience

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

04.2022 – 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

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. Eggenberger, 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. Eggenberger, **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. Eggenberger, 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://andrebieenkapp.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://andrebieenkapp.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. Eggenberger, 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] **Biedenkapp, A.**, 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, **Biedenkapp, A.**, 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, **Biedenkapp, A.**, 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, **Biedenkapp, A.**, 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] **Biedenkapp, A.**, 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.....

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 <i>PRL@ICAPS'22</i> Learning Domain-Independent Policies for Open List Selection	Online 06.2022
Inductive Biases, Invariances and Generalization in Reinforcement Learning <i>BIG@ICML'20</i> Towards TempoRL: Learning When to Act	Online 07.2020
Data Science Meets Optimisation <i>DSO@IJCAI'19, Macau (SAR), China</i> Towards White-box Benchmarks for Algorithm Control	Macau 08.2019

Scholarships, Honors and Awards

Best Paper Award <i>GECCO'22, Theory-inspired Parameter Control Benchmarks for Dynamic Algorithm Configuration</i> GECH Track	2022
Best Reviewers (Top 10%) <i>ICML'21</i>	2021
Black-Box Optimization Competiton@NeurIPS'20 <i>Part of the AutoML & IOHprofiler Team, 1st place on a meta-learning friendly search space</i> Leaderboard: https://bbochallenge.com/altleaderboard	1st place 2020
Black-Box Optimization Competiton@NeurIPS'20 <i>Part of the AutoML & IOHprofiler Team, Leaderboard: https://bbochallenge.com/leaderboard</i>	3rd place* 2020
*Due to a bug the initial evaluation failed. After re-evaluation our team would have gotten the third place.	

Professional Service

Journal Reviewing.....

Journal of Artificial Intelligence Research 2022	JAIR
IEEE Transactions on Evolutionary Computation 2022	TEVC
Computational Intelligence 2022	CI
Journal of the Association for Computing Machinery 2022, 2021	Journal of the ACM

Program Committee Membership at Conferences.....

AAAI Conference on Artificial Intelligence 2018	AAAI
AutoML Conference 2022	AutoML-Conf
European Conference on Artificial Intelligence 2020	ECAI
European Workshop on Reinforcement Learning 2022	EWRL
International Conference on Machine Learning 2023, 2021, 2019	ICML
Neural Information Processing Systems 2022, 2021	NeurIPS

NeurIPS Datasets and Benchmarks

2021 (Track 1 & Track 2)

NeurIPS DBT

[Program Committee Membership at Workshops](#).....

ICLR Workshop on Agent Learning in Open-Endedness

2022

ALOE

ICML Workshop on Automated Machine Learning

2021, 2020, 2019, 2018

AutoML@ICML

NeurIPS Workshop on Meta-Learning

2019

MetaLearn@NeurIPS

[Organizer](#).....

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

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