

Joaquin Vanschoren, Ph.D.

✉ joaquin.vanschoren@gmail.com

☎ +32 497 903069

🏠 Genk, Belgium

🌐 <https://joaquinvanschoren.github.io>

🐦 @joavanschoren

🔗 joaquinvanschoren

Profile

I aim to deeply understand, explain, and democratize AI to build learning systems that help humanity. My team and I build AI systems that learn continually and assemble themselves to learn faster and better, much like the human brain. I founded OpenML, an open science platform for machine learning, started the NeurIPS Datasets and Benchmarks track to incentivize better training data and evaluations, and work with MLCommons on AI Safety, ML standards, and data-centric AI. I am always eager to collaborate with new people. Do reach out!

Professional Experience

- 1/2023 - present 📌 **Associate Professor, TU Eindhoven**, Netherlands.
- Leading a thriving AI research lab (20+ PhDs, postdocs, AI Engineers).
 - Education Director for the Data Science and AI program.
 - Best Teacher award for *Machine Learning Engineering* course, 1.7k YouTube subs.
 - Presented tutorials at major conferences (e.g. NeurIPS, AAAI), and 30+ invited talks.
 - Attracted 20+ grants (EU, DARPA, NWO, ...) with €6+ million for my own group.
 - Chairman of the OpenML Foundation & Co-chair of MLCommons AI Safety WG.
 - Initiated a new track on Datasets and Benchmarks at NeurIPS.
- 1/2014 - 12/2022 📌 **Assistant Professor, TU Eindhoven**, Netherlands.
- Founded the *OpenML* open-source project, with currently 11 core developers, 300k users, and integrations in key ML frameworks and languages.
 - Co-authored book on AutoML: 1M downloads, 2.5k citations, 4.5/5 Amazon rating.
 - Winner of an Amazon Research Award and the Dutch Data Prize
 - Founding member of European AI societies ELLIS and CLAIRE
- 1/2013 - 12/2013 📌 **Data Scientist, CityLife** (now: Joyn), Belgium.
- Developed and optimized a recommender system for 150k users.
- 9/2010 - 8/2013 📌 **Post-doctoral Fellow and Lecturer, Leiden University**, Netherlands.
- 5/2010 - 9/2010 📌 **Post-doctoral Fellow, KU Leuven**, Belgium.
- 8/2005 - 5/2010 📌 **Ph.D. researcher, KU Leuven**, Belgium, and **Waikato University**, New Zealand.
- Won an ECML best demo award. Published original research in meta-learning.

Education

- 2014 – present 📌 **Teaching and leadership qualifications, TU Eindhoven.**
- Dutch University Teaching Qualification (BKO), 2016
Academic Leadership for Assistant Professors, 2020
- 2005 – 2010 📌 **Ph.D. Computer Science, KU Leuven.**
- Thesis title: *Understanding Machine Learning Performance with Experiment Databases.*
Advisors: Hendrik Blockeel and Geoffrey Holmes (Univ. Waikato, New Zealand)
- 2000 – 2005 📌 **M.Sc. Computer Science, KU Leuven, cum laude.**
- Thesis title: *A framework for high-level perception*, magna cum laude.
Advised by Prof. Douglas R. Hofstadter, Indiana University in Bloomington.

Awards and Fellowships

2024	■ NeurIPS Spotlight. Paper in top 3% of submissions at NeurIPS 2024
	■ ICML Spotlight. Paper in top 3% of submissions at ICML 2024
2022	■ Best Teacher award. Dutch study association for data science students (Pattern)
2019-present	■ ELLIS member. European Laboratory for Learning and Intelligent Systems
2019	■ Amazon Research Award, Amazon Research
2018-present	■ CLAIRE, Key member. Confederation of Laboratories for AI Research in Europe
2016,2017	■ Microsoft Azure Research Award, Microsoft Research
2016	■ Dutch Data Prize (for OpenML), Research Data Netherlands
2009	■ Best Demo Award, 17th European Conference on Machine Learning (ECML-PKDD)

In the Media

1/5/2024	■ <i>Royal Society</i> - Science in the age of AI.
16/4/2024	■ <i>IEEE Spectrum</i> - Announcing a Benchmark to Improve AI Safety.
5/12/2023	■ <i>Nature</i> vol 624, issue 7990 - Is AI leading to a reproducibility crisis in science?
6/5/2022	■ <i>Science</i> vol 376, issue 6593 - Taught to the test. AI software clears high hurdles on IQ tests but still makes dumb mistakes. Can better benchmarks help?
5/5/2021	■ <i>The Biotech podcast</i> , Season 1, Episode 20 - Dr Joaquin Vanschoren on Making Data Public
5/2020	■ <i>KDnuggets</i> - Automated Machine Learning: The Free eBook
13/4/2020	■ <i>Science</i> - Artificial intelligence is evolving all by itself
16/2/2018	■ <i>Science</i> vol 365, issue 6451 -Artificial intelligence faces reproducibility crisis.
10/2016	■ <i>Open Science Radio podcast</i> , Episode 59 - OpenML
8/2014	■ <i>KDnuggets</i> - OpenML: Share, Discover and Do Machine Learning

Skills







Leadership	■ Director of the TU Eindhoven Data Science program. Head of the AutoML research lab, with 20+ researchers (PhDs, postdocs, AI Engineers). Open source project lead (OpenML). Conference chair (Track Chair @ NeurIPS 2021-2023, Program Chair @ AutoML 2024 and DS 2018, General Chair @ LION 2016).
Academic	■ Published 200+ papers, including top journals and conferences. Several best paper awards and spotlight papers. Taught tutorials and summer schools at major venues (NeurIPS, AAAI, ACDL,...). Gave 30+ invited talks. Edited and reviewed for major journals and conferences (JMLR, NeurIPS, ICML,...).
Coding	■ Proficient in Python, Javascript. Experience with R, Java. Open-source development.
Technologies	■ ML Libraries (PyTorch, TensorFlow, scikit-learn,...), Databases (SQL/NoSQL), Web frameworks (React, Flask, Dash,...), API development, Server admin (Linux).

Teaching Experience







University courses

2019-present	■ Machine Learning Engineering (M.Sc, 250 students), TU Eindhoven. Evaluation: 8.8/10. Teaching award ('pluim'), Best Teacher award from the Dutch study association for data science students (DSA Pattern), and nominated as a TU/e Best Teacher in 2022.
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Teaching Experience (continued)

- 2018-2023  **Data Mining (M.Sc, 75 students)**, Jhieronimus Academy of Data Science. Evaluation: 8.1/10. Teaching award ('pluim').
- 2016-2017  **Data Mining (B.Sc, 140 students)**, Tilburg University. Evaluation: 8.4/10. Teaching award ('pluim').
- 2015-2017  **Foundations of Data Mining (M.Sc, 80 students)**, TU Eindhoven. Evaluation: 7.8/10
- 2014-2015  **Web-scale Information Systems (M.Sc, 60 students)**, TU Eindhoven. Evaluation: 7.7/10
- 2014-2017  **Web Technology (B.Sc, 80 students)**, TU Eindhoven. Evaluation: 7.2/10
- 2011-2014  **Data Mining (B.Sc, 60 students)**, Leiden University. Evaluation: 7.6/10

Invited Lectures










- 2023  **AutoML Fall School 2023**. Metalearning for AutoML. Munich, Germany.
- 2022  **ACDL 2022**. AutoML (3 lectures). Advanced Course on Data science and Machine Learning, Pontigniano, Italy.
- 2021  **Univ. Trento** AutoML lecture. Advanced topics in ML and Optimisation, Trento, Italy.
 **ACDL 2021** Metalearning (3 lectures). Advanced Course on Data science and Machine Learning, Pontigniano, Italy.
- 2019  **ACDL 2019** AutoML (3 lectures). Advanced Course on Data science and Machine Learning, Pontigniano, Italy.
- 2017  **Geilo Winter School 2017** Tutorial on Machine Learning, Geilo, Norway.

Tutorials



- 2021  **AAAI 2021** Tutorial on Metalearning. AAAI Conference on Artificial Intelligence.
 **DSAA 2021** Tutorial on Metalearning. Data Science and Advanced Analytics Conference.
 **ODSC Europe 2021** Tutorial on AutoML. Open Data Science Conference.
- 2019  **ODSC Europe 2019** Tutorial on AutoML. Open Data Science Conference.
- 2018  **NeurIPS 2018** Tutorial on Automated Machine Learning, with Frank Hutter. Neural Information Processing Systems.
- 2017  **ECMLPKDD 2017** Tutorial on Automated Machine Learning.
- 2015  **ECMLPKDD 2015** Tutorial on Metalearning and Algorithm Selection.

Advisor Experience




PhD Student Advisor

- 2021-...  Pan Jiarong (TU Eindhoven). Bayesian Optimization and meta-learning.
 Fangqin Zhou (TU Eindhoven). Transformer architectures for vision.
 Andrei Simion-Constantinescu (TU Eindhoven). Self-supervised learning for vision.
 Israel Campero Jurado (TU Eindhoven). AutoML and metalearning for time series.
 Elif Ceren Gok (TU Eindhoven). Automated continual learning.
 Murat Onur Yildirim (TU Eindhoven). Efficient and scalable continual learning.
- 2018-...  Bilge Celik (TU Eindhoven). AutoML for evolving data.
- 2017-2022  Pieter Gijbbers (TU Eindhoven, MCS). Systems for AutoML research.
- 2015-2019  Chao Zhang (TU Eindhoven, IEIS, co-advisor). Data analysis for digital health.







Advisor Experience (continued)

- 2014-2018  Rafael Mantovani (Univ. Sao Paolo, ICMC Sao Carlos, co-advisor). Metalearning for hyperparameter tuning.
- 2012-2016  Jan van Rijn (Leiden University, LIACS). Massively collaborative machine learning.



Postdoctoral Fellow Advisor

- 2023-...  Alexis Cvetkov-Iliev, Post-Doc (TU Eindhoven).
- 2022-2024  Mert Kiliçkaya, Post-Doc (TU Eindhoven).
- 2019-2021  Marcos L.P. Bueno, Post-Doc (TU Eindhoven).



AI Research Engineer Advisor

- 2024-...  Subhaditya Mukherjee, AI Engineer, Machine learning (TU Eindhoven).
- 2022-...  Pieter Gijbers, AI Engineer, Machine learning (TU Eindhoven).
-  Taniya Das, AI Engineer, Deep Learning (TU Eindhoven).
- 2022-2024  Jos van der Velde, AI Engineer, Machine learning (TU Eindhoven).
- 2019-2024  Prabhant Singh, AI Engineer, OpenML core development (TU Eindhoven).
- 2018-2021  Sahitya Ravi, AI Engineer, OpenML core development (TU Eindhoven).

PDEng Student Advisor

- 2018-2020  Yandre Lozano, PDEng, Predictive Maintenance for Smart Buildings (TU Eindhoven).
-  Karthik Srinivasan, PDEng, Preventing Burglaries and Other Incidents (TU Eindhoven).

Other Mentorship

- 2024-...  Prabhant Singh, University Teacher (TU Eindhoven).
-  Aaqib Saeed, Assistant Professor (TU Eindhoven).

Invited Talks

-  Keynote, Leuven.AI Scientific Meeting, Leuven, May 2024
-  NIST AI Metrology Colloquium, Virtual, Dec 2023
-  Deep Learning Workshop, Trento, Jun 2023
-  Mathematical Research Data Initiative (MaRDI) Symposium, Berlin, Sep 2022
-  OECD Workshop on AI and the productivity of science, Virtual, Nov 2021
-  Keynote, International Conference on Intelligent Data Engineering and Automated Learning (IDEAL), Virtual, Nov 2021
-  Scalable Data Science Keynote, International Conference on Very Large Data Bases (VLDB), Aug 2021
-  Data-Centric AI event with Andrew Ng, Virtual, Aug 2021
-  Florence Nightingale Symposium, Virtual, Jan 2021
-  Freiburg Machine Learning Lab, Virtual, Dec 2020
-  International FAIR Convergence Symposium, Virtual, Nov 2020
-  ELLIS AutoML Seminar, Virtual, Sep 2020
-  UCI Symposium on Reproducibility in Machine Learning, Virtual, Sep 2020
-  Booking.com Research, Amsterdam, The Netherlands, Jan 2020

Invited Talks (continued)

- ECML Workshop on Automated Machine Learning, Wurzburg, Germany, Sep 2019
- UN Global Summit on AI for Good, Geneva, Switzerland, May 2019
- Spring Symposium (AI for collaborative data science), AAAI, Stanford, USA, Mar 2019
- MLOSS Workshop, NeurIPS, Montreal, Canada, Dec 2018
- AutoML Workshop, PRICAI, Nanjing, China, Aug 2018
- DEEM Workshop, SIGMOD, Houston, USA, Jun 2018
- National eScience Symposium, Amsterdam, The Netherlands, Oct 2017
- Reproducible Machine Learning workshop, ICML, Sydney, Australia, Aug 2017
- Big data tools for physics and astronomy workshop, Amsterdam, The Netherlands, Jun 2017
- Amazon Research, Berlin, Germany, Apr 2017 and Cambridge, UK, Feb 2017
- Challenges in Machine Learning Workshop, NIPS, Barcelona, Spain, Dec 2016
- Dutch Society for Pattern Recognition, Eindhoven, The Netherlands, Nov 2016
- IBM Watson Research Center, New York, USA, Jun 2016
- Machine Learning for High Energy Physics, Lund, Sweden, Jun 2016
- Open Data Science @ Sheffield workshop, Sheffield, UK, Dec 2015
- Horizon Talk, IDA, St Etienne, France, Oct 2015
- Keynote, Statistical Computing (StatComp), Ulm, Germany, Jul 2015
- AutoML Workshop, ICML, Lille, France, Jul 2015
- Keynote, European Conference on Data Analysis (ECDA), Bremen, Germany, Jul 2014

Grants (amounts are funds specifically for my group)

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| 2024-... | <ul style="list-style-type: none"> ■ EU Horizon Europe, <i>ALFIE: Assessment of Learning technologies and Frameworks for Intelligent and Ethical AI</i> (P) €330,000 ■ EU Digital Europe, <i>European Digital Innovation Hub South Netherlands</i> (P) €120,000 ■ EU Horizon Europe, <i>SYNERGIES: Cooperative, Connected and Automated Mobility</i> (P) €734,000 ■ Dutch Science Foundation, Open Science Fund, <i>Automated Machine Learning for all</i> (PI) €50,000 |
| 2022-... | <ul style="list-style-type: none"> ■ EU Horizon Europe, <i>AI4Europe: Building the European AI on-demand platform</i> (WPL) €506,000 ■ Dutch Government, <i>Machine Learning for building renovations</i> (P) €240,000 ■ Dutch Science Foundation, Merian Fund, <i>Digital Twin of a Vertical Farm</i> (Co-PI) €278,000 |
| 2020-2024 | <ul style="list-style-type: none"> ■ EU Horizon 2020, <i>Stairway to AI</i> (P) €218,000 ■ ITEA Inno4Health, <i>Continuous monitoring in personal and physical health</i> (P) €517,000 ■ Dutch Science Foundation, TTW, <i>Multi Modal Photochemistry</i> (WPL) €122,000 ■ EU Horizon 2020, <i>TAILOR Network of AI Excellence</i> (WPL) €350,000 (+ managing a €1.5M networking fund) ■ Dutch Science Foundation, <i>SkyHigh: Leveraging AI in Vertical Farming</i> (PL) €300,000 |
| 2019-2021 | <ul style="list-style-type: none"> ■ BOOST, <i>Educational platform for machine learning and medical image analysis</i> (P) €60,000 |
| 2019-2020 | <ul style="list-style-type: none"> ■ Amazon Research Award, <i>The AutoML Gym</i> (PI) \$100,000 |
| 2017-2021 | <ul style="list-style-type: none"> ■ Dutch Science Foundation, Commit2Data, <i>Dynamic Data Analytics through Automatically Constructed Machine Learning Pipelines</i> (P) €240,000 |

Grants (amounts are funds specifically for my group) (continued)

	📖	DARPA, <i>Data Driven Discovery of Models</i> (P) €500,000
2016-2016	📖	Microsoft Azure Research Award, <i>A Cloud-Based Platform for AutoML</i> (PI) €40,000
2012-2016	📖	Dutch Science Foundation, Free Competition, <i>Massively Collaborative ML</i> (PI) €240,000
2012-2013	📖	EU PASCAL Harvest, <i>MLOpen Machine Learning Platform</i> (PI) €30,000

PI: Principal Investigator, PL: Project leader, WPL: Work package leader, P: Participant

Professional Activities

Editorial Boards

2024-...	📖	Journal of Data-centric Machine Learning Research (DMLR), Editor-In-Chief
2020-...	📖	Journal of Machine Learning Research (JMLR), Action Editor
2022-2024	📖	ArXiv.org, Moderator for Machine Learning (CS.LG)
2018-2022	📖	Machine Learning Journal (MLJ), Action Editor

Conference Chair

2024	📖	Program Chair. Automated Machine Learning Conference (AutoML Conf)
2021-2023	📖	Datasets & Benchmarks Chair. Conference on Neural Information Processing Systems (NeurIPS)
2022	📖	Tutorial Chair. Automated Machine Learning Conference (AutoML Conf)
2018	📖	Program Chair. International Conference on Discovery Science (DS)
2016	📖	General Chair. Learning and Intelligent Optimization Conference (LION)
2013	📖	Demo Chair. European Conference on Machine Learning (ECMLPKDD)
2010-2011	📖	Program Chair. Belgian-Dutch Machine Learning Conference (BeNeLearn)

Workshop Chair

2018-2021	📖	NeurIPS Workshop on Meta-Learning
2021	📖	NeurIPS Workshop on Data-Centric AI
	📖	AAAI Workshop on Meta-Learning
2016-2021	📖	ICML Workshop on Automatic Machine Learning
2017	📖	DALI Workshop on The Data Science Process
	📖	ECMLPKDD Workshop on Automatic Machine Learning
2015	📖	ECMLPKDD Workshop on Meta-Learning and Algorithm Selection
2014	📖	ECAI Workshop on Meta-Learning and Algorithm Selection
2012	📖	ECMLPKDD Workshop on Learning from Unexpected Results
	📖	ECAI Workshop on Planning to Learn

PhD Thesis Examiner

2024	📖	Sigrid Hellan (Univ. Edinburgh)
	📖	Ziqi Wang (TU Delft)
2022	📖	Xingchen Ma (KU Leuven)
	📖	Herilalaina Rakotoarison (Univ. Paris-Saclay)

Professional Activities (continued)

- Matthias Feurer (Univ. Freiburg)
- 2021
 - Zhengying Liu (Univ. Paris-Saclay)
 - Taha Ceritli (Univ. Edinburgh)
 - Sebastian Flennerhag (Univ. Manchester)
- 2019
 - Lisheng Sun (Univ. Paris-Saclay)
- 2017
 - Michel Camilleri (Univ. Malta)
 - Gitte Vanwickelen (KU Leuven)

PC Committee

- 2024
 - Neural Information Processing Systems (NeurIPS) Senior Area Chair
- 2022
 - Conference on Lifelong Learning Agents (CoLLAs)
 - Automated Machine Learning Conference (AutoML)
- 2012 – 2021
 - International Conference on Machine Learning (ICML) Area chair
- 2016 – 2020
 - Neural Information Processing Systems (NeurIPS) (Top 10% reviewer)
- 2019 – 2020
 - Machine Learning and Systems
- 2012 – 2017
 - European Conference on Machine Learning (ECML-PKDD)
- 2014 – 2016
 - European Conference on Artificial Intelligence (ECAI)
- 2016
 - ACM SIGKDD Conference on Knowledge Discovery and Data Mining (KDD)

Education Management

- 2023-present
 - Education Program Director, Data Science, TU Eindhoven
- 2022-2023
 - Examination Committee, Data Science & AI Master, TU Eindhoven
 - Admissions Board, Data Science & AI Master, TU Eindhoven
- 2015-2023
 - Mentor for TU Eindhoven Master programme
- 2015-2017
 - Internationalization Coordinator, TU Eindhoven
- 2014-2018
 - Education Committee, Business Information Systems Master, TU Eindhoven
- 2014-2017
 - Coach for TU Eindhoven Bachelor School

Journal Articles

- 1 Gijsbers, P., Bueno, M. L., Coors, S., LeDell, E., Poirier, S., Thomas, J., Bischl, B., & **Vanschoren, J.** (2024). AMLB: an AutoML Benchmark. *Journal of Machine Learning Research*, 25(101), 1–65.
- 2 Moharil, A., **Vanschoren, J.**, Singh, P., & Tamburri, D. (2024). Towards efficient automl: A pipeline synthesis approach leveraging pre-trained transformers for multimodal data. *Machine Learning*, 113, 7011–7053.
- 3 Vettoruzzo, A., Bouguelia, M.-R., **Vanschoren, J.**, Rognvaldsson, T., & Santosh, K. (2024). Advances and challenges in meta-learning: A technical review. *IEEE Transactions on Pattern Analysis and Machine Intelligence*.
- 4 Weerts, H., Pfisterer, F., Feurer, M., Eggensperger, K., Bergman, E., Awad, N., **Vanschoren, J.**, Pechenizkiy, M., Bischl, B., & Hutter, F. (2024). Can fairness be automated? guidelines and opportunities for fairness-aware AutoML. *Journal of Artificial Intelligence Research*, 79, 639–677.
- 5 Campero Jurado, I., Lorato, I., Morales, J., Fruytier, L., Stuart, S., Panditha, P., Janssen, D. M., Rossetti, N., Uzunbajakava, N., Serban, I. B., Rikken, L., de Kok, M., **Vanschoren, J.**, & Brombacher, A. (2023). Signal quality analysis for long-term ECG monitoring using a health patch in cardiac patients. *Sensors*, 23(4), Art. 2130.
- 6 Celik, B., Singh, P., & **Vanschoren, J.** (2023). Online AutoML: An adaptive AutoML framework for online learning. *Machine Learning*, 112(6), 1897–1921.
- 7 Yildirim, M. O., Gok Yildirim, E. C., Eren, E., Huang, P., Haris, M. P., Kazim, S., **Vanschoren, J.**, Uygun Oksuz, A., & Ahmad, S. (2023). Automated machine learning approach in material discovery of hole selective layers for perovskite solar cells. *Energy Technology*, 11(1).
- 8 Bellido-Jiménez, J. A., Estévez, J., **Vanschoren, J.**, & García-Marín, A. P. (2022). AgroML: An open-source repository to forecast reference evapotranspiration in different geo-climatic conditions using machine learning and transformer-based models. *Agronomy*, 12(3), 656.
- 9 Campero Jurado, I., Fedjajevs, A., **Vanschoren, J.**, & Brombacher, A. (2022). Interpretable assessment of ST-segment deviation in ECG time series. *Sensors*, 22(13), Art. 4919.
- 10 Rivolli, A., Garcia, L. P., Soares, C., **Vanschoren, J.**, & de Carvalho, A. C. (2022). Meta-features for meta-learning. *Knowledge-Based Systems*, 240, 108101.
- 11 Zhang, C., **Vanschoren, J.**, van Wissen, A., Lakens, D., de Ruyter, B., & IJsselstein, W. A. (2022). Theory-based habit modeling for enhancing behavior prediction in behavior change support systems. *User Modeling and User-Adapted Interaction*, 23.
- 12 Balázs, C., van Beekveld, M., Caron, S., Dillon, B. M., Farmer, B., Fowlie, A., Garrido-Merchán, E. C., Handley, W., Hendriks, L., Jóhannesson, G., Mamužić, J., Martinez, G., Scott, P., Ruiz de Austri, R., Searle, Z., Stienen, B., **Vanschoren, J.**, & White, M. (2021). A comparison of optimisation algorithms for high-dimensional particle and astrophysics applications. *Journal of High Energy Physics*, 2021(5), 1–46.
- 13 Celik, B., & **Vanschoren, J.** (2021). Adaptation strategies for automated machine learning on evolving data. *IEEE Transactions on Pattern Analysis and Machine Intelligence (TPAMI)*, 43(9), 3067–3078.
- 14 Feurer, M., van Rijn, J. N., Kadra, A., Gijsbers, P., Mallik, N., Ravi, S., Müller, A., **Vanschoren, J.**, & Hutter, F. (2021). OpenML-Python: An extensible Python API for OpenML. *Journal of Machine Learning Research (JMLR)*, 22(100), 1–5.
- 15 Olier, I., Orhobor, O. I., Dash, T., Davis, A., **Vanschoren, J.**, & King, R. D. (2021). Transformational machine learning: Learning how to learn from many related scientific problems. *Proceedings of the National Academy of Sciences (PNAS)*, 118(49).

- 16 Casalicchio, G., Bossek, J., Lang, M., Kirchhoff, D., Kerschke, P., Hofner, B., Seibold, H., **Vanschoren, J.**, & Bischl, B. (2019). OpenML: An R package to connect to the machine learning platform OpenML. *Computational Statistics*, 34(3), 977–991.
- 17 Gijsbers, P., & **Vanschoren, J.** (2019). GAMA: a Genetic Automated Machine learning Assistant. *Journal of Open Source Software (JOSS)*, 4(33), 1132.
- 18 Mantovani, R. G., Rossi, A. L., Alcobaca, E., **Vanschoren, J.**, & de Carvalho, A. C. (2019). A meta-learning recommender system for hyperparameter tuning: Predicting when tuning improves SVM classifiers. *Information Sciences*, 501, 193–221.
- 19 Sadawi, N., Olier, I., **Vanschoren, J.**, Van Rijn, J. N., Besnard, J., Bickerton, R., Grosan, C., Soldatova, L., & King, R. D. (2019). Multi-task learning with a natural metric for Quantitative Structure Activity Relationship learning. *Journal of Cheminformatics*, 11(1), 1–13.
- 20 Abdulrahman, S. M., Brazdil, P., van Rijn, J. N., & **Vanschoren, J.** (2018). Speeding up algorithm selection using average ranking and active testing by introducing runtime. *Machine learning*, 107(1), 79–108.
- 21 Olier, I., Sadawi, N., Bickerton, G. R., **Vanschoren, J.**, Grosan, C., Soldatova, L., & King, R. D. (2018). Meta-QSAR: A large-scale application of meta-learning to drug design and discovery. *Machine Learning*, 107(1), 285–311.
- 22 van Rijn, J. N., Holmes, G., Pfahringer, B., & **Vanschoren, J.** (2018). The online performance estimation framework: Heterogeneous ensemble learning for data streams. *Machine Learning*, 107(1), 149–176.
- 23 Lawrynowicz, A., Esteves, D., Panov, P., Soru, T., Dzeroski, S., & **Vanschoren, J.** (2017). An algorithm, implementation and execution ontology design pattern. *Advances in Ontology Design and Patterns*, 32, 55.
- 24 Bischl, B., Kerschke, P., Kotthoff, L., Lindauer, M., Malitsky, Y., Fréchette, A., Hoos, H., Hutter, F., Leyton-Brown, K., Tierney, K., & **Vanschoren, J.** (2016). ASlib: A benchmark library for algorithm selection. *Artificial Intelligence*, 237, 41–58.
- 25 Eerikäinen, L. M., **Vanschoren, J.**, Rooijackers, M. J., Vullings, R., & Aarts, R. M. (2016). Reduction of false arrhythmia alarms using signal selection and machine learning. *Physiological measurement*, 37(8), 1204–1216.
- 26 Gao, B., Berendt, B., & **Vanschoren, J.** (2016). Toward understanding online sentiment expression: An interdisciplinary approach with subgroup comparison and visualization. *Social Network Analysis and Mining*, 6(1), 1–16.
- 27 **Vanschoren, J.**, Van Rijn, J. N., Bischl, B., & Torgo, L. (2014). OpenML: Networked science in machine learning. *ACM SIGKDD Explorations*, 15(2), 49–60.
- 28 Serban, F., **Vanschoren, J.**, Kietz, J.-U., & Bernstein, A. (2013). A survey of intelligent assistants for data analysis. *ACM Computing Surveys (CSUR)*, 45(3), 1–35.
- 29 **Vanschoren, J.**, Blockeel, H., Pfahringer, B., & Holmes, G. (2012). Experiment databases. a new way to share, organize and learn from experiments. *Machine learning*, 87(2), 127–158.

Papers at International Conferences

- 1 Akhtar, M., Benjelloun, O., Conforti, C., Gijsbers, P., Giner-Miguel, J., Jain, N., Kuchnik, M., Lhoest, Q., Marcenac, P., Maskey, M., Mattson, P., Oala, L., Ruysen, P., Shinde, R., Simperl, E., Thomas, G., Tykhonov, S., **Vanschoren, J.**, van der Velde, J., Vogler, S., & Wu, C.-J. (2024). Croissant: A metadata format for ml-ready datasets. *Advances in Neural Information Processing Systems (NeurIPS 2024)*.
- 2 Huang, Y., Sun, L., Wang, H., Wu, S., Zhang, Q., Li, Y., Gao, C., Huang, Y., Lyu, W., Zhang, Y., Li, X., Sun, H., Liu, Z., Liu, Y., Wang, Y., Zhang, Z., Vidgen, B., Kailkhura, B., Xiong, C., Xiao, C., Li, C., Xing, E. P., Huang, F., Liu, H., Ji, H., Wang, H., Zhang, H., Yao, H., Kellis, M., Zitnik, M., Jiang, M.,

- Bansal, M., Zou, J., Pei, J., Liu, J., Gao, J., Han, J., Zhao, J., Tang, J., Wang, J., **Vanschoren, J.** et al. (2024). TrustLLM: Trustworthiness in large language models. *International Conference on Machine Learning (ICML 2024)*. pp. 20166–20270.
- 3 Pan, J., Falkner, S., Berkenkamp, F., & **Vanschoren, J.** (2024). MALIBO: Meta-learning for Likelihood-free Bayesian Optimization. *International Conference on Machine Learning (ICML 2024)*.
 - 4 Vettoruzzo, A., **Vanschoren, J.**, Bouguelia, M.-R., & Rögnvaldsson, T. (2024). Learning to learn without forgetting using attention. *Conference on Lifelong Learning Agents (CoLLAs 2024)*.
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