Joaquin Vanschoren, Ph.D.

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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 €7.4+ million for my own group.
– Chairman of the OpenML Foundation & Co-chair of MLCommons AI Safety WG.
– Expert for European Commission JRC panel on the European AI Act.
– Initiated a new track on Datasets and Benchmarks at NeurIPS.

5/2025 - 8/2025 **Visiting Faculty Researcher, Google DeepMind**, Paris, France.
– Researched technologies enabling AI Assistants to work with structured datasets.
– Released Eclair, an MCP framework to help AI agents work with datasets.

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**.
Educational Leadership Programme, EWUU, 2025
Academic Leadership for Associate Professors, TU Eindhoven, 2024
Academic Leadership for Assistant Professors, TU Eindhoven, 2020
Dutch University Teaching Qualification (BKO), 2016

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)

Education (continued)

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 *Royal Society* - Science in the age of AI.
16/4/2024 *IEEE Spectrum* - Announcing a Benchmark to Improve AI Safety.
5/12/2023 *Nature* vol 624, issue 7990 - Is AI leading to a reproducibility crisis in science?
6/5/2022 *Science* 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 *The Biotech podcast*, Season 1, Episode 20 - Dr Joaquin Vanschoren on Making Data Public
5/2020 *KDnuggets* - Automated Machine Learning: The Free eBook
13/4/2020 *Science* - Artificial intelligence is evolving all by itself
16/2/2018 *Science* vol 365, issue 6451 -Artificial intelligence faces reproducibility crisis.
10/2016 *Open Science Radio podcast*, Episode 59 - OpenML
8/2014 *KDnuggets* - 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 nomination for TU/e Best Teacher in 2022.

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

2025 — **CCAIM AI and Machine Learning Summer School** Auto-Continual Learning. Cambridge, UK.

ELLIS-CISPA Summer School on Trustworthy AI AI Safety Benchmarks. Saarbrucken, Germany.

Boston University Auto-Continual Learning. Boston, USA.

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

2025-... — Qingren Yao (TU Eindhoven). Multimodal foundation models.

Advisor Experience (continued)

- Shreya Sajid (TU Eindhoven). Multimodal foundation models.
- Fabian Denoodt (TU Eindhoven). Safety-Critical Multimodal Learning.
- Shawon Ashraf (TU Eindhoven). Open multilingual foundation models.
- Diana Alexandra Onutu (TU Eindhoven). Open multilingual foundation models.
- Dalton Harmsen (TU Eindhoven). Open multilingual foundation models.

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 Gijsbers (TU Eindhoven, MCS). Systems for AutoML research.

2015-2019
- Chao Zhang (TU Eindhoven, IEIS, co-advisor). Data analysis for digital health.

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

2025-...
- Jie Liu, Post-Doc (TU Eindhoven).
- Thilina Chathuranga, Post-Doc (TU Eindhoven).
- Anna Vettoruzzo, Post-Doc (TU Eindhoven).
- Gennaro Gala, Post-Doc (TU Eindhoven).
- Matthew Danish, Post-Doc (TU Eindhoven).

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

2025-...
- Ivan Slobozhan, AI Engineer, Multimodal Foundation Models (TU Eindhoven).
- Mohamed Salah Mahmoud, AI Engineer, Large Language Models (TU Eindhoven).

2024-...
- Subhaditya Mukherjee, AI Engineer, Machine learning (TU Eindhoven).

2022-...
- Pieter Gijsbers, 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).

Advisor Experience (continued)

Other Mentorship

2024-... Prabhant Singh, University Teacher (TU Eindhoven).

Aaqib Saeed, Assistant Professor (TU Eindhoven).

Invited Talks

- Keynote, International Conference on Discovery Science, Ljubljana, Slovenia, September 2025
- ICLR Workshop on Future Machine Learning Data Practices and Repositories, Singapore, April 2025
- Santa Fe Institute Workshop on Measuring AI in the World, Santa Fe, March 2025
- Keynote, Leuven.AI Scientific Meeting, Leuven, May 2024
- NIST AI Metrology Colloquium, Virtual, Dec 2023
- VUB AI Lab Seminar. Brussels, October 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
- 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

Invited Talks (continued)

- 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)

2025-…	EU Horizon Europe, *ELLIOT - European Large Open Multi-Modal Foundation Models For Robust Generalization On Arbitrary Data Streams* (WPL) €1,560,000
	EU Digital Europe, *OpenEuroLLM - Open European Family of Large Language Models* (WPL) €1,620,000
	EU Digital Europe, *LLMs4EU - Large Language Models for the European Union* (P) €885,000
	EU Horizon Europe, *MOSAIC - Essential Electronic Components and Systems for our Automated Digital Future in Industry and Mobility* (P) €780,000
2024-…	EU Horizon Europe, *ALFIE: Assessment of Learning technologies and Frameworks for Intelligent and Ethical AI* (P) €330,000
	EU Digital Europe, *European Digital Innovation Hub South Netherlands* (P) €120,000
	EU Horizon Europe, *SYNERGIES: Cooperative, Connected and Automated Mobility* (P) €734,000
2024-2025	Dutch Science Foundation, Open Science Fund, *Automated Machine Learning for all* (PI) €50,000
2022-…	EU Horizon Europe, *AI4Europe: Building the European AI on-demand platform* (WPL) €506,000
	Dutch Government, *Machine Learning for building renovations* (P) €240,000
	Dutch Science Foundation, Merian Fund, *Digital Twin of a Vertical Farm* (Co-PI) €278,000
2020-2024	EU Horizon 2020, *Stairway to AI* (P) €218,000
	ITEA Inno4Health, *Continuous monitoring in personal and physical health* (P) €517,000
	Dutch Science Foundation, TTW, *Multi Modal Photochemistry* (WPL) €122,000
	EU Horizon 2020, *TAILOR Network of AI Excellence* (WPL) €350,000 (+ managing a €1.5M networking fund)
	Dutch Science Foundation, *SkyHigh: Leveraging AI in Vertical Farming* (PL) €300,000
2019-2021	BOOST, *Educational platform for machine learning and medical image analysis* (P) €60,000
2019-2020	Amazon Research Award, *The AutoML Gym* (PI) $100,000
2017-2021	Dutch Science Foundation, Commit2Data, *Dynamic Data Analytics through Automatically Constructed Machine Learning Pipelines* (P) €240,000
	DARPA, *Data Driven Discovery of Models* (P) €500,000
2016-2016	Microsoft Azure Research Award, *A Cloud-Based Platform for AutoML* (PI) €40,000
2012-2016	Dutch Science Foundation, Free Competition, *Massively Collaborative ML* (PI) €240,000
2012-2013	EU PASCAL Harvest, *MLOpen Machine Learning Platform* (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

- 2025 **Datasets & Benchmarks Chair**. Conference on Neural Information Processing Systems (NeurIPS)
- 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

- 2025 EurIPS Workshop on the Science of Benchmarking and Evaluation
- ICLR Workshop on Future Machine Learning Data Practices and Repositories
- 2018-2022 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

- 2025 Nabeel Seedat (Univ. of Cambridge)
- Zehao Xiao (Univ. of Amsterdam)
- Linhao Meng (TU Eindhoven)
- Rudy Semola (Univ. Pisa)
- 2024 Sigrid Hellan (Univ. Edinburgh)
- Ziqi Wang (TU Delft)
- 2022 Xingchen Ma (KU Leuven)
- Herilalaina Rakotoarison (Univ. Paris-Saclay)
- Matthias Feurer (Univ. Freiburg)

Professional Activities (continued)

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 - 2025	Neural Information Processing Systems (NeurIPS) Senior Area Chair
2022 - 2025	Conference on Lifelong Learning Agents (CoLLAs) Senior Reviewer
2022	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

Research Publications (Google Scholar: 12600+ citations, h-index 47)

Journal Articles

1. Bischl, B., Casalicchio1, G., Das, T., Feurer, M., Fischer, S., Gijsbers, P., Mukherjee, S., Müller, A. C., Németh, L., Oala, L., Purucker, L., Ravi, S., van Rijn, J. N., Singh, P., **Vanschoren, J.**, van der Velde, J., & Wever, M. (2025). OpenML: Insights from ten years and more than a thousand papers. *Patterns, 6(7)*.
2. Cvetkov-Iliev, A., Soulios, V., Xu, L., Abbas, G. M., Kyrou, E., Havinga, L., Hoes, P. J., Loonen, R., & **Vanschoren, J.** (2025). In-depth sensitivity analysis of heating demand and overheating in dutch terraced houses using interpretable machine learning. *Energy and Buildings, 337*, 115611.
3. 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.
4. 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.
5. 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*.
6. 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.
7. 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.
8. Celik, B., Singh, P., & **Vanschoren, J.** (2023). Online AutoML: An adaptive AutoML framework for online learning. *Machine Learning, 112*(6), 1897–1921.
9. 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).
10. 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.
11. 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.
12. Rivolli, A., Garcia, L. P., Soares, C., **Vanschoren, J.**, & de Carvalho, A. C. (2022). Meta-features for meta-learning. *Knowledge-Based Systems, 240*, 108101.
13. Zhang, C., **Vanschoren, J.**, van Wissen, A., Lakens, D., de Ruyter, B., & IJsselsteijn, W. A. (2022). Theory-based habit modeling for enhancing behavior prediction in behavior change support systems. *User Modeling and User-Adapted Interaction, 23*.
14. 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.
15. 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.

16. 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.

17. 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).

18. 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.

19. Gijsbers, P., & **Vanschoren, J.** (2019). GAMA: a Genetic Automated Machine learning Assistant. *Journal of Open Source Software (JOSS), 4*(33), 1132.

20. 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.

21. 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.

22. 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.

23. 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.

24. 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.

25. 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.

26. 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.

27. Eerikäinen, L. M., **Vanschoren, J.**, Rooijakkers, 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.

28. 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.

29. **Vanschoren, J.**, Van Rijn, J. N., Bischl, B., & Torgo, L. (2014). OpenML: Networked science in machine learning. *ACM SIGKDD Explorations, 15*(2), 49–60.

30. 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.

31. **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. Manolache, G., Schouten, G., & **Vanschoren, J.** (2025). Crypticbio: A large multimodal dataset for visually confusing biodiversity. *Advances in Neural Information Processing Systems (**NeurIPS 2025**)*.

2 Onutu, D.-A., Zhao, Y., **Vanschoren, J.**, & Menkovski, V. (2025). Score matching on large geometric graphs for cosmology generation. *International Conference on Discovery Science* (***DS 2025***).

3 Singh, P., & **Vanschoren, J.** (2025). On supernet transfer learning for effective task adaptation. *Conference on Lifelong Learning Agents* (***CoLLAs 2025***).

4 Vettoruzzo, A., Braccaioli, L., **Vanschoren, J.**, & Nowaczyk, M. (2025). Unsupervised meta-learning via in-context learning. *International Conference on Learning Representations* (***ICLR 2025***).

5 Yildirim, M. O., Gok Yildirim, E. C., Mocanu, D. C., & **Vanschoren, J.** (2025). Self-regulated neurogenesis for online data-incremental learning. *Conference on Lifelong Learning Agents* (***CoLLAs 2025***).

6 Akhtar, M., Benjelloun, O., Conforti, C., Gijsbers, P., Giner-Miguelez, J., Jain, N., Kuchnik, M., Lhoest, Q., Marcenac, P., Maskey, M., Mattson, P., Oala, L., Ruyssen, 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 - Spotlight paper***).

7 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.

8 Pan, J., Falkner, S., Berkenkamp, F., & **Vanschoren, J.** (2024). MALIBO: Meta-learning for Likelihood-free Bayesian Optimization. *International Conference on Machine Learning* (***ICML 2024 - Spotlight paper***).

9 Vettoruzzo, A., **Vanschoren, J.**, Bouguelia, M.-R., & Rögnvaldsson, T. (2024). Learning to learn without forgetting using attention. *Conference on Lifelong Learning Agents* (***CoLLAs 2024***).

10 Yildirim, M. O., Gok, E. C., Sokar, G., Mocanu, D. C., & **Vanschoren, J.** (2024). Continual learning with dynamic sparse training: Exploring algorithms for effective model updates. *Conference on Parsimony and Learning* (***CPAL 2024***). pp. 94–107.

11 Zhou, F., Kilickaya, M., **Vanschoren, J.**, & Piao, R. (2024). Hytas: A hyperspectral image transformer architecture search benchmark and analysis. *European Conference on Computer Vision* (***ECCV 2024***).

12 Boot, T., Cazin, N., Sanberg, W., & **Vanschoren, J.** (2023). Efficient-DASH: Automated radar neural network design across tasks and datasets. *IEEE Intelligent Vehicles Symposium* (***IV 2023***). pp. 1–7.

13 Jurado, I. C., & **Vanschoren, J.** (2023). An analysis of evolutionary migration models for multi-objective, multi-fidelity automl. *2023 IEEE International Conference on Systems, Man, and Cybernetics* (***SMC 2023***). pp. 2940–2945.

14 Kerssies, T., & **Vanschoren, J.** (2023). Neural architecture search for visual anomaly segmentation. *AutoML Conference* (***AutoML 2023***).

15 Kilickaya, M., & **Vanschoren, J.** (2023a). Are labels needed for incremental instance learning? *IEEE/CVF Conference on Computer Vision and Pattern Recognition* (***CVPR 2023***). pp. 2401–2409.

16 Mazumder, M., Banbury, C., Yao, X., Karlaš, B., Gaviria Rojas, W., Diamos, S., Diamos, G., He, L., Parrish, A., Kirk, H. R., Quaye, J., Rastogi, C., Kiela, D., Jurado, D., Kanter, D., Mosquera, R., Cukierski, W., Ciro, J., Aroyo, L., Acun, B., Chen, L., Raje, M., Bartolo, M., Eyuboglu, E. S., Ghorbani, A., Goodman, E., Howard, A., Inel, O., Kane, T., Kirkpatrick, C. R., Sculley, D., Kuo, T.-S., Mueller, J. W., Thrush, T., **Vanschoren, J.** et al. (2023). Dataperf: Benchmarks for data-centric AI development. *Advances in Neural Information Processing Systems* (***NeurIPS 2023***).

17 Singh, P., & **Vanschoren, J.** (2023). AutoML for outlier detection with optimal transport distances. *Proceedings of the Thirty-Second International Joint Conference on Artificial Intelligence* (***IJCAI 2023***). pp. 7175–7178.

18 Yildirim, E. C. G., Yildirim, M. O., Kilickaya, M., & **Vanschoren, J.** (2023). AdaCL: Adaptive Continual Learning. *Continual AI Unconference* (***ContinualAI 2024***), *PMLR*. Vol. 249. pp. 15–24.

19 Zhou, F., Kilickaya, M., & **Vanschoren, J.** (2023). Locality-aware hyperspectral classification. *The British Machine Vision Conference* (***BMVC 2023***).

20 Campero-Jurado, I., & **Vanschoren, J.** (2022). Multi-fidelity optimization method with Asynchronous Generalized Island Model for AutoML. *Genetic and Evolutionary Computation Conference* (***GECCO 2022***).

21 Ullah, I., Carrión-Ojeda, D., Escalera, S., Guyon, I., Huisman, M., Mohr, F., van Rijn, J. N., Sun, H., **Vanschoren, J.**, & Vu, P. A. (2022). Meta-Album: Multi-domain meta-dataset for few-shot image classification. *Advances in Neural Information Processing Systems 35* (***NeurIPS 2022***). pp. 3232–3247.

22 van Gastel, R., & **Vanschoren, J.** (2022). Regularized Meta-Learning for Neural Architecture Search. *Automated Machine Learning conference* (***AutoML 2022***).

23 Bischl, B., Casalicchio, G., Feurer, M., Hutter, F., Lang, M., Mantovani, R. G., van Rijn, J. N., & **Vanschoren, J.** (2021). OpenML benchmarking suites. *Advances in Neural Information Processing Systems, Datasets and Benchmarks Track* (***NeurIPS 2021***).

24 Gijsbers, P., Pfisterer, F., van Rijn, J. N., Bischl, B., & **Vanschoren, J.** (2021). Meta-learning for symbolic hyperparameter defaults. *Genetic and Evolutionary Computation Conference* (***GECCO 2021***). pp. 151–152.

25 Gijsbers, P., & **Vanschoren, J.** (2021). GAMA: a General Automated Machine learning Assistant. *Joint European Conference on Machine Learning and Knowledge Discovery in Databases* (***ECMLPKDD 2021***). pp. 560–564.

26 Grootendorst, M., & **Vanschoren, J.** (2019). Beyond bag-of-concepts: Vectors of locally aggregated concepts. *Joint European Conference on Machine Learning and Knowledge Discovery in Databases* (***ECMLPKDD 2019***). pp. 681–696.

27 Bischl, B., Casalicchio, G., Hofner, B., Kerschke, P., Kirchhoff, D., Lang, M., Seibold, H., & **Vanschoren, J.** (2016). Connecting R to the OpenML project for Open Machine Learning. *UseR! Conference* (***UseR 2016***). pp. 1–11.

28 Mantovani, R. G., Horváth, T., Cerri, R., **Vanschoren, J.**, & De Carvalho, A. C. (2016). Hyper-parameter tuning of a decision tree induction algorithm. *2016 5th Brazilian Conference on Intelligent Systems (BRACIS)*. pp. 37–42.

29 Zhang, C., van Wissen, A., Lakens, D., **Vanschoren, J.**, De Ruyter, B., & IJsselsteijn, W. A. (2016). Anticipating habit formation: A psychological computing approach to behavior change support. *Proceedings of the 2016 ACM International Joint Conference on Pervasive and Ubiquitous Computing* (***UbiComp 2016***). pp. 1247–1254.

30 Eerikäinen, L. M., **Vanschoren, J.**, Rooijakkers, M. J., Vullings, R., & Aarts, R. M. (2015). Decreasing the false alarm rate of arrhythmias in intensive care using a machine learning approach. *Computing in Cardiology Conference* (***CinC 2015***). pp. 293–296.

31 Gao, B., Berendt, B., & **Vanschoren, J.** (2015). Who is more positive in private? Analyzing sentiment differences across privacy levels and demographic factors in Facebook chats and posts. *Proceedings of the IEEE/ACM International Conference on Advances in Social Networks Analysis and Mining* (***ASONAM 2015***). pp. 605–610.

32 Mantovani, R. G., Rossi, A. L., **Vanschoren, J.**, Bischl, B., & Carvalho, A. C. (2015). To tune or not to tune: recommending when to adjust SVM hyper-parameters via meta-learning. *2015 International Joint Conference on Neural Networks (**IJCNN 2015**)*. pp. 1–8.

33 Mantovani, R. G., Rossi, A. L., **Vanschoren, J.**, Bischl, B., & De Carvalho, A. C. (2015). Effectiveness of random search in SVM hyper-parameter tuning. *International Joint Conference on Neural Networks (**IJCNN 2015**)*. pp. 1–8.

34 van Rijn, J. N., Abdulrahman, S. M., Brazdil, P., & **Vanschoren, J.** (2015). Fast algorithm selection using learning curves. *International Symposium on Intelligent Data Analysis (**IDA 2015**)*. pp. 298–309.

35 van Rijn, J. N., Holmes, G., Pfahringer, B., & **Vanschoren, J.** (2015). Having a Blast: Meta-learning and heterogeneous ensembles for data streams. *IEEE International Conference on Data Mining (**ICDM 2015**)*. pp. 1003–1008.

36 **Vanschoren, J.**, Bischl, B., Hutter, F., Sebag, M., Kegl, B., Schmid, M., Napolitano, G., Wolstencroft, K., Williams, A. R., & Lawrence, N. (2015). Towards a data science collaboratory. *International Symposium on Intelligent Data Analysis (**IDA 2015**)*. Vol. 9385.

37 van Rijn, J. N., Holmes, G., Pfahringer, B., & **Vanschoren, J.** (2014). Algorithm selection on data streams. *International Conference on Discovery Science (**DS 2014**)*. pp. 325–336.

38 Miao, S., Vespier, U., **Vanschoren, J.**, Knobbe, A., & Cachucho, R. (2013). Modeling sensor dependencies between multiple sensor types. *Machine Learning Conference of Belgium and The Netherlands (**BeNeLearn 2013**)*.

39 Van Rijn, J. N., & **Vanschoren, J.** (2013). OpenML: An Open Science Platform for Machine Learning. *Machine Learning Conference of Belgium and The Netherlands (**BeNeLearn 2013**)*. pp. 99–100.

40 van Rijn, J. N., Bischl, B., Torgo, L., Gao, B., Umaashankar, V., Fischer, S., Winter, P., Wiswedel, B., Berthold, M. R., & **Vanschoren, J.** (2013). OpenML: A collaborative science platform. *Joint European conference on machine learning and knowledge discovery in databases (**ECMLPKDD 2013 - Best Demo Award**)*. pp. 645–649.

41 **Vanschoren, J.**, Braun, M. L., & Ong, C. S. (2013). Open science in machine learning. *Conference of the CLAssification and Data Analysis Group (**CLADAG 2013**)*.

42 Leite, R., Brazdil, P., & **Vanschoren, J.** (2012a). Selecting classification algorithms with active testing. *Machine learning and data mining in pattern recognition (**MLDM 2012**)*. pp. 117–131.

43 Reutemann, P., & **Vanschoren, J.** (2012). Scientific workflow management with ADAMS. *Joint European Conference on Machine Learning and Knowledge Discovery in Databases (**ECMLPKDD 2012**)*. pp. 833–837.

44 Vespier, U., Knobbe, A., Nijssen, S., & **Vanschoren, J.** (2012a). MDL-based analysis of time series at multiple time-scales. *Joint European Conference on Machine Learning and Knowledge Discovery in Databases (**ECMLPKDD 2012**)*. pp. 371–386.

45 Gao, B., & **Vanschoren, J.** (2011). Visualizations of machine learning behavior with dimensionality reduction techniques. *Machine Learning Conference of Belgium and The Netherlands (**BeNeLearn 2011**)*. pp. 35–42.

46 Miao, S., Knobbe, A., **Vanschoren, J.**, Vespier, U., & Chen, X. (2011). A range of data mining techniques to correlate multiple sensor types. *Dutch-Belgian Database Day (**DBDD 2011**)*. p. 9.

47 Vespier, U., Knobbe, A., **Vanschoren, J.**, Miao, S., Koopman, A., Obladen, B., & Bosma, C. (2011). Traffic events modeling for structural health monitoring. *International Symposium on Intelligent Data Analysis (**IDA 2011**)*. pp. 376–387.

48 **Vanschoren, J.**, & Blockeel, H. (2009a). A community-based platform for machine learning experimentation. *Joint European Conference on Machine Learning and Knowledge Discovery in Databases (**ECMLPKDD 2009**)*. pp. 750–754.

49 **Vanschoren, J.**, & Blockeel, H. (2008b). Investigating classifier learning behavior with experiment databases. *European Conference on Data Analysis (**ECDA 2008**)*. pp. 421–428.

50 **Vanschoren, J.**, Blockeel, H., Pfahringer, B., & Holmes, G. (2008). Organizing the world's machine learning information. *International Symposium On Leveraging Applications of Formal Methods, Verification and Validation (**ISOLA 2008**)*. pp. 693–708.

51 **Vanschoren, J.**, Pfahringer, B., & Holmes, G. (2008). Learning from the past with experiment databases. *Pacific Rim International Conference on Artificial Intelligence (**PRICAI 2008**)*. pp. 485–496.

52 Blockeel, H., & **Vanschoren, J.** (2007). Experiment databases: Towards an improved experimental methodology in machine learning. *Joint European Conference on Machine Learning and Knowledge Discovery in Databases (**ECMLPKDD 2007**)*. pp. 6–17.

53 **Vanschoren, J.**, Van Assche, A., Vens, C., & Blockeel, H. (2007). Meta-learning from experiment databases: An illustration. *Machine Learning Conference of Belgium and The Netherlands (**BeNeLearn 2007**)*. pp. 120–127.

54 **Vanschoren, J.**, & Blockeel, H. (2006). Towards understanding learning behavior. *Machine Learning Conference of Belgium and The Netherlands (**BeNeLearn 2006**)*. pp. 89–96.

Papers at International Workshops

1 Akhtar, M., Benjelloun, O., Conforti, C., Gijsbers, P., Giner-Miguelez, J., Jain, N., Kuchnik, M., Lhoest, Q., Marcenac, P., Maskey, M., Maskey, M., Mattson, P., Oala, L., Ruyssen, P., Shinde, R., Simperl, E., Thomas, G., Tykhonov, V., **Vanschoren, J.**, Vogler, S., & Wu, C.-J. (2024). Croissant: A metadata format for ML-ready datasets. In *SIGMOD/PODS Workshop on Data Management for End-to-End Machine Learning (DEEM 2024)* (pp. 1–6).

2 Carrión-Ojeda, D., Alam, M., Escalera, S., Farahat, A., Ghosh, D., Diaz, T. G., Gupta, C., Guyon, I., Ky, J. R., Lee, X. Y., Liu, X., Mohr, F., Nguyen, M. H., Pintelas, E., Roth, S., Schaub-Meyer, S., Sun, H., Ullah, I., **Vanschoren, J.**, Vidyaratne, L., Wu, J., & Yin, X. (2023). NeurIPS'22 cross-domain MetaDL challenge: Results and lessons learned. In *NeurIPS 2022 Competition Track* (pp. 50–72).

3 Franken, G., Singh, P., & **Vanschoren, J.** (2022). Faster performance estimation for NAS with embedding proximity score. In *Ecmlpkdd workshop on meta-knowledge transfer* (pp. 51–61).

4 Lijffijt, J., Gkorou, D., Van Hertum, P., Ypma, A., Pechenizkiy, M., & **Vanschoren, J.** (2022). Introduction to the special section on ai in manufacturing: Current trends and challenges. In *ACM SIGKDD Explorations newsletter* (Vol. 24, pp. 81–85).

5 Baz, A. E., Guyon, I., Liu, Z., van Rijn, J., Treguer, S., & **Vanschoren, J.** (2021). Advances in MetaDL: AAAI 2021 challenge and workshop. In *AAAI 2021 Workshop on Meta-Learning and MetaDL, PMLR 140:1-16.*

6 Schagen, L., & **Vanschoren, J.** (2021). Variational Task Encoders for Model-Agnostic Meta-Learning with Uncertainty over Task Distributions. In *NeurIPS 2021 Workshop on Meta-Learning.*

7 van Lith, J. W., & **Vanschoren, J.** (2021). From strings to data science: A practical framework for automated string handling. In *ECMLPKDD 2021 Workshop on Automated Data Science.*

8 Zhou, F., & **Vanschoren, J.** (2021). Open-Ended Learning Strategies for Learning Complex Locomotion Skills. In *NeurIPS 2021 Workshop on Meta-Learning.*

9 Castelijns, L. A., Maas, Y., & **Vanschoren, J.** (2019). The ABC of data: A classifying framework for data readiness. In *ECMLPKDD 2019 Workshop on Automated Data Science* (pp. 3–16).

10 Celik, B., & **Vanschoren, J.** (2019). Learning to go with the flow: On the adaptability of automated machine learning to evolving data. In *ECMLPKDD 2019 Workshop on Automated Data Science.*

11. Gijsbers, P., LeDell, E., Thomas, J., Poirier, S., Bischl, B., & **Vanschoren, J.** (2019). An open source AutoML benchmark. In *ICML 2019 Workshop on Automated Machine Learning*.

12. Manolache, G., & **Vanschoren, J.** (2019). Meta-Learning for Algorithm and Hyperparameter Optimization with Surrogate Model Ensembles. In *NeurIPS 2019 Workshop on Meta-Learning*.

13. Robles, J. G., & **Vanschoren, J.** (2019). Learning to Reinforcement Learn for Neural Architecture Search. In *NeurIPS 2019 'New in ML' Workshop*.

14. van Hoof, J., & **Vanschoren, J.** (2019). Hyperboost: Hyperparameter Optimization by Gradient Boosting surrogate models. In *ECMLPKDD 2019 Workshop on Automated Data Science*.

15. Publio, G. C., Esteves, D., Ławrynowicz, A., Panov, P., Soldatova, L., Soru, T., **Vanschoren, J.**, & Zafar, H. (2018). ML-schema: exposing the semantics of machine learning with schemas and ontologies. In *ICML 2018 Workshop on Reproducibility in Machine Learning*.

16. van Rijn, J. N., Pfisterer, F., Thomas, J., Muller, A., Bischl, B., & **Vanschoren, J.** (2018). Meta learning for defaults: Symbolic defaults. In *NeurIPS 2018 Workshop on Meta-Learning*.

17. Zhu, Y., Aoun, M., Krijn, M., **Vanschoren, J.**, & Campus, H. T. (2018). Data Augmentation using Conditional Generative Adversarial Networks for Leaf Counting in Arabidopsis Plants. In *BMVC 2018 Workshop on Computer Vision Problems in Plant Phenotyping* (p. 324).

18. Gijsbers, P., **Vanschoren, J.**, & Olson, R. S. (2017). Layered TPOT: Speeding up tree-based pipeline optimization. In *ECMLPKDD 2017 Workshop on Automated Machine Learning*.

19. Abdulrhaman, S. M., Brazdil, P., Van Rijn, J. N., & **Vanschoren, J.** (2015). Algorithm selection via meta-learning and sample-based active testing. In *ECMLPKDD 2015 Workshop on Meta-learning and Algorithm Selection* (pp. 55–66).

20. Mantovani, R. G., Rossi, A. L., **Vanschoren, J.**, & de Carvalho, A. C. (2015). Meta-learning Recommendation of Default Hyper-parameter Values for SVMs in Classification Tasks. In *ECMLPKDD 2015 Workshop on Meta-learning and Algorithm Selection* (pp. 80–92).

21. Van Rijn, J. N., & **Vanschoren, J.** (2015). Sharing RapidMiner Workflows and Experiments with OpenML. In *ECMLPKDD 2015 Workshop on Meta-learning and Algorithm Selection* (pp. 93–103).

22. **Vanschoren, J.**, Rijn, J. N., & Bischl, B. (2015). Taking machine learning research online with OpenML. In *Workshop on Big Data, Streams and Heterogeneous Source Mining (BigMine 2015)* (pp. 1–4).

23. Vukicevic, M., Radovanovic, S., **Vanschoren, J.**, Napolitano, G., & Delibasic, B. (2015). Towards a Collaborative Platform for Advanced Meta-Learning in Healthcare Predictive Analytics. In *ECMLPKDD 2015 Workshop on Meta-learning and Algorithm Selection* (pp. 112–114).

24. Van Rijn, J. N., Holmes, G., Pfahringer, B., & **Vanschoren, J.** (2014). Towards meta-learning over data streams. In *ECMLPKDD 2014 Workshop on Meta-learning and Algorithm Selection* (pp. 37–38).

25. Leite, R., Brazdil, P., & **Vanschoren, J.** (2012b). Selecting classification algorithms with active testing on similar datasets. In *ECAI 2012 Workshop on Planning to Learn* (pp. 20–28).

26. **Vanschoren, J.** (2012). The experiment database for machine learning. In *ECAI 2012 Workshop on Planning to Learn* (pp. 30–38).

27. Vespier, U., Knobbe, A., Nijssen, S., & **Vanschoren, J.** (2012b). MDL-Based Identification of Relevant Temporal Scales in Time Series. In *Workshop on Information Theoretic Methods in Science and Engineering (WITMSE 2012)* (pp. 64–72).

28. **Vanschoren, J.**, Blockeel, H., Pfahringer, B., & Holmes, G. (2010). Experiment databases for machine learning. In *ICML 2008 Planning to Learn Workshop* (pp. 335–361).

29. **Vanschoren, J.**, & Soldatova, L. (2010a). Collaborative meta-learning. In *ECAI 2010 Workshop on Planning to Learn* (pp. 37–46).

30. **Vanschoren, J.**, & Soldatova, L. (2010b). Exposé: An ontology for data mining experiments. In *ECMLPKDD 2010 workshop on third generation data mining* (pp. 31–46).

31. **Vanschoren, J.**, & Blockeel, H. (2009b). Stand on the shoulders of giants. Towards a portal for collaborative experimentation in data mining. In *ECMLPKDD 2009 workshop on third generation data mining* (pp. 88–99).

32. **Vanschoren, J.**, & Blockeel, H. (2008a). Experiment databases for machine learning. In *NeurIPS 2008 Workshop on Machine Learning Open Source Software* (pp. 335–361).

Books and Chapters

1. **Vanschoren, J.** (2023). Democratising artificial intelligence to accelerate scientific discovery. In *Artificial intelligence in science*. OECD.

2. Brazdil, P., van Rijn, J., Soares, C., & **Vanschoren, J.** (2022). *Metalearning: Applications to Automated Machine Learning and Data Mining*. Springer Nature.

3. Hutter, F., Kotthoff, L., & **Vanschoren, J.** (2019). *Automated machine learning: Methods, systems, challenges*. Springer Nature.

4. **Vanschoren, J.** (2019). Meta-learning. In *Automated machine learning* (pp. 35–61). Springer Nature.

5. **Vanschoren, J.**, Vespier, U., Miao, S., Meeng, M., Cachucho, R., & Knobbe, A. (2014). Large-scale sensor network analysis: Applications in structural health monitoring. In *Big data management, technologies, and applications* (pp. 314–347). IGI Global.

6. Berendt, B., **Vanschoren, J.**, & Gao, B. (2011). Datenanalyse und-visualisierung. In *Handbuch forschungsdatenmanagement*. Bock+Herchen.

7. **Vanschoren, J.** (2011). Meta-learning architectures: Collecting, organizing and exploiting meta-knowledge. In *Meta-learning in computational intelligence* (pp. 117–155). Springer.

8. **Vanschoren, J.**, & Blockeel, H. (2010). Experiment databases. In *Inductive databases and constraint-based data mining* (pp. 335–361). Springer.

Proceedings edited

1. Lindauer, M., Eggensperger, K., Garnett, R., & Vanschoren, J. (2024). International conference on automated machine learning, PMLR, *256*. Retrieved from `https://proceedings.mlr.press/v256/`

2. Guyon, I., van Rijn, J. N., Treguer, S., & **Vanschoren, J.** (2021). Proceedings of the AAAI 2021 Workshop on Meta-Learning and MetaDL Challenge, PMLR.

3. **Vanschoren, J.**, & Yeung, S. (2021). Proceedings of the Neural Information Processing Systems Track on Datasets and Benchmarks, NeurIPS Foundation, Curran Associates.

4. Soldatova, L., **Vanschoren, J.**, Papadopoulos, G., & Ceci, M. (2018). Proceedings of the 23rd International Conference on Discovery Science, Springer International.

5. Duivesteijn, W., Pechenizkiy, M., Fletcher, G., Menkovski, V., Postma, E., **Vanschoren, J.**, & van der Putten, P. (2017). Proceedings of the Twenty-Sixth Benelux Conference on Machine Learning.

6. Festa, P., Sellmann, M., & **Vanschoren, J.** (2016). Proceedings of the 10th International Conference on Learning and Intelligent Optimization, Springer.

7. Hutter, F., Kotthoff, L., & **Vanschoren, J.** (2016). Proceedings of the ICML 2016 Workshop on Automatic Machine Learning, PMLR.

8. **Vanschoren, J.**, Brazdil, P., Giraud-Carrier, C., & Kotthoff, L. (2015). Proceedings of the International ECMLPKDD Workshop on Meta-Learning and Algorithm Selection (MetaSel 2015), CEUR, *1455*.

9. **Vanschoren, J.**, Brazdil, P., Soares, C., & Kotthoff, L. (2014). Proceedings of the ECAI International Workshop on Meta-learning and Algorithm Selection (MetaSel 2014), CEUR, *1201*.

10. **Vanschoren, J.**, Brazdil, P., & Kietz, J.-U. (2012). Proceedings of the ECAI International Workshop on Planning to Learn (PlanLearn 2012), CEUR, *950*.

11. van der Putten, P., Veenman, C., **Vanschoren, J.**, Israel, M., & Blockeel, H. (2011). Proceedings of the Twentieth Belgian-Dutch Conference on Machine Learning.

Other Publications and Preprints

1. Braccaioli, L., Vettoruzzo, A., Singh, P., **Vanschoren, J.**, Bouguelia, M.-R., & Conci, N. (2025). Meta-learning transformers to improve in-context generalization. arXiv preprint arXiv:2507.05019.

2. Ghosh, S., Frase, H., Williams, A., Luger, S., Röttger, P., Barez, F., McGregor, S., Fricklas, K., Kumar, M., Feuillade–Montixi, Q., Bollacker, K., Friedrich, F., Tsang, R., Vidgen, B., Parrish, A., Knotz, C., Presani, E., Bennion, J., Boston, M. F., Kuniavsky, M., Hutiri, W., Ezick, J., Salem, M. B., Sahay, R., Goswami, S., Gohar, U., Huang, B., Sarin, S., Alhajjar, E., Chen, C., Eng, R., Manjusha, K. R., Mehta, V., Long, E., Emani, M., Vidra, N., Rukundo, B., Shahbazi, A., Chen, K., Ghosh, R., Thangarasa, V., Peigné, P., Singh, A., Bartolo, M., Krishna, S., Akhtar, M., Gold, R., Coleman, C., Oala, L., Tashev, V., Imperial, J. M., Russ, A., Kunapuli, S., Miailhe, N., Delaunay, J., Radharapu, B., Shinde, R., Tuesday, Dutta, D., Grabb, D., Gangavarapu, A., Sahay, S., Gangavarapu, A., Schramowski, P., Singam, S., David, T., Han, X., Mammen, P. M., Prabhakar, T., Kovatchev, V., Weiss, R., Ahmed, A., Manyeki, K. N., Madireddy, S., Khomh, F., Zhdanov, F., Baumann, J., Vasan, N., Yang, X., Mougn, C., Varghese, J. R., Chinoy, H., Jitendar, S., Maskey, M., Hardgrove, C. V., Li, T., Gupta, A., Joswin, E., Mai, Y., Kumar, S. H., Patlak, C., Lu, K., Alessi, V., Balija, S. B., Gu, C., Sullivan, R., Gealy, J., Lavrisa, M., … **Vanschoren, J.** (2025). AILuminate: Introducing v1.0 of the AI risk and reliability benchmark from MLCommons. arXiv preprint arXiv:2503.05731.

3. Jurado, I. C., Gijsbers, P., & **Vanschoren, J.** (2025). Automl benchmark with shorter time constraints and early stopping. arXiv preprint arXiv:2504.01222.

4. Martin, I. C., Mukherjee, S., Baimagambetov, A., **Vanschoren, J.**, & Polatidis, N. (2025). Evolving machine learning: A survey. arXiv preprint arXiv:2505.17902.

5. Singh, P., Hess, S., & **Vanschoren, J.** (2025). Occam's model: Selecting simpler representations for better transferability estimation. arXiv preprint arXiv:2502.06925.

6. Yildirim, M. O., Yildirim, E. C. G., & **Vanschoren, J.** (2025). Sculpting [cls] features for pre-trained model-based class-incremental learning. arXiv preprint arXiv:2502.14762.

7. Jain, N., Akhtar, M., Giner-Miguelez, J., Shinde, R., **Vanschoren, J.**, Vogler, S., Goswami, S., Rao, Y., Santos, T., Oala, L. et al. (2024). A Standardized Machine-readable Dataset Documentation Format for Responsible AI. arXiv preprint arXiv:2407.16883.

8. Juodelyte, D., Ferrante, E., Lu, Y., Singh, P., **Vanschoren, J.**, & Cheplygina, V. (2024). On dataset transferability in medical image classification. arXiv preprint arXiv:2412.20172.

9. Pecher, B., Srba, I., Bielikova, M., & **Vanschoren, J.** (2024). Automatic combination of sample selection strategies for few-shot learning. arXiv preprint arXiv:2402.03038.

10. Singh, P., Gijsbers, P., Yildirim, M. O., Gok, E. C., & **Vanschoren, J.** (2024). CLAMS: A system for zero-shot model selection for clustering. arXiv preprint arXiv:2407.11286.

11. Singh, P., & **Vanschoren, J.** (2024). Robust and efficient transfer learning via supernet transfer in warm-started neural architecture search. arXiv preprint arXiv:2407.20279.

12. Sreedhara, A. T., & **Vanschoren, J.** (2024). Can time series forecasting be automated? a benchmark and analysis. arXiv: `2407.16445 [cs.LG]`. Retrieved from `https://arxiv.org/abs/2407.16445`

13. Vettoruzzo, A., Braccaioli, L., **Vanschoren, J.**, & Nowaczyk, M. (2024). Unsupervised meta-learning via in-context learning. arXiv preprint arXiv:2405.16124.

14. Vidgen, B., Agrawal, A., Ahmed, A. M., Akinwande, V., Al-Nuaimi, N., Alfaraj, N., Alhajjar, E., Aroyo, L., Bavalatti, T., Blili-Hamelin, B., ..., & **Vanschoren, J.** (2024). Introducing v0.5 of the AI safety benchmark from MLCommons. arXiv preprint arXiv:2404.12241.

15. Yildirim, E. C. G., Yildirim, M. O., & **Vanschoren, J.** (2024). Continual learning on a data diet. arXiv: 2410.17715 [cs.LG]. Retrieved from https://arxiv.org/abs/2410.17715

16. Yildirim, M. O., Yildirim, E. C. G., Mocanu, D. C., & **Vanschoren, J.** (2024). Focil: Finetune-and-freeze for online class incremental learning by training randomly pruned sparse experts. arXiv preprint arXiv:2403.14684.

17. Kerssies, T., Kılıçkaya, M., & **Vanschoren, J.** (2023). Evaluating continual test-time adaptation for contextual and semantic domain shifts. arXiv preprint arXiv:2208.08767.

18. Kilickaya, M., & **Vanschoren, J.** (2023b). What can automl do for continual learning? arXiv preprint arXiv:2311.11963.

19. Oala, L., Maskey, M., Bat-Leah, L., Parrish, A., Gürel, N. M., Kuo, T.-S., Liu, Y., Dror, R., Brajovic, D., Yao, X., Bartolo, M., Gaviria Rojas, W. A., Hileman, R., Aliment, R., Mahoney, M. W., Risdal, M., Lease, M., Samek, W., Dutta, D., Northcutt, C. G., Coleman, C., Hancock, B., Koch, B., Tadesse, G. A., Karlaš, B., Alaa, A., Dieng, A. B., Noy, N., Janapa Reddi, V., Zou, J., Paritosh, P., van der Schaar, M., Bollacker, K., Aroyo, L., Zhang, C., **Vanschoren, J.**, Guyon, I., & Mattson, P. (2023). DMLR: Data-centric machine learning research – past, present and future. arXiv preprint arXiv:2311.13028.

20. Afshar, R. R., Zhang, Y., **Vanschoren, J.**, & Kaymak, U. (2022). Automated reinforcement learning: An overview. arXiv preprint arXiv:2201.05000.

21. Grobelnik, M., & **Vanschoren, J.** (2022). Warm-starting darts using meta-learning. arXiv preprint arXiv:2205.06355.

22. Beishuizen, T. P., **Vanschoren, J.**, Hilbers, P. A., & Bošnački, D. (2021). Automated feature selection and classification for high-dimensional biomedical data. ResearchSquare 10.21203/rs.3.rs-563410/v1.

23. Brandt, I. v. d., Fok, F., Mulders, B., **Vanschoren, J.**, & Cheplygina, V. (2021). Cats, not CAT scans: a study of dataset similarity in transfer learning for 2D medical image classification. arXiv preprint arXiv:2107.05940.

24. Evchenko, M., **Vanschoren, J.**, Hoos, H. H., Schoenauer, M., & Sebag, M. (2021). Frugal machine learning. arXiv preprint arXiv:2111.03731.

25. Goyal, R., **Vanschoren, J.**, Van Acht, V., & Nijssen, S. (2021). Fixed-point quantization of convolutional neural networks for quantized inference on embedded platforms. arXiv preprint arXiv:2102.02147.

26. Heffels, M. R., & **Vanschoren, J.** (2020). Aerial imagery pixel-level segmentation. arXiv preprint arXiv:2012.02024.

27. Weerts, H. J., Mueller, A. C., & **Vanschoren, J.** (2020). Importance of tuning hyperparameters of machine learning algorithms. arXiv preprint arXiv:2007.07588.

28. Ratner, A., Alistarh, D., Alonso, G., Andersen, D. G., Bailis, P., Bird, S., Carlini, N., Catanzaro, B., Chayes, J., Chung, E. et al. (2019). MLSys: The new frontier of machine learning systems. arXiv preprint arXiv:1904.03257.

29. Rivolli, A., Garcia, L. P., Soares, C., **Vanschoren, J.**, & de Carvalho, A. C. (2018). Towards reproducible empirical research in meta-learning. arXiv preprint arXiv:1808.10406.

30. **Vanschoren, J.** (2018). Meta-learning: A survey. arXiv preprint arXiv:1810.03548.

31 Knobbe, A., Meeng, M., **Vanschoren**, **J.**, Rees, J. S., & Merlo, P. S. (2014). Reconstructing Medieval Social Networks from English and Latin Charters. Population Reconstruction 2014.

32 Van Rijn, J. N., Umaashankar, V., Fischer, S., Bischl, B., Torgo, L., Gao, B., Winter, P., Wiswedel, B., Berthold, M. R., & **Vanschoren**, **J.** (2013). A RapidMiner extension for open machine learning. RapidMiner Community Meeting and Conference 2013.

References

Available on Request