dr. ir. Joaquin Vanschoren

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Professional Profile

My passion is to empower everyone to truly understand and use machine learning. My research focuses on automating machine learning, as well as making it open and collaborative. I founded OpenML.org, a popular online machine learning platform where people can share data, code, models and experiments, and I develop algorithms that learn from all these experiments to help people build better machine learning models, faster.

Professional Experience

- **Eindhoven University of Technology**
  - **Assistant Professor** in Machine Learning (Tenured) — Jan 2014 - now
- **CityLife (now Joyn)**
  - **Data Scientist** on large-scale recommender systems. 150,000+ users. — Jan 2013 - Dec 2013
- **Leiden University**
  - **Post-doctoral Fellow and Lecturer**, Data Mining — Sep 2010 - Sept 2013
- **University of Leuven**
  - **Post-doctoral Fellow**. Computer Science Department. — May 2010 - Sep 2010
  - **PhD Candidate**. Computer Science Department. — Aug 2005 - May 2010

Education and Degrees

- **PhD in Engineering**, *University of Leuven, Belgium* — 17 May 2010
  - PhD thesis: "Understanding Machine Learning Performance with Experiment Databases"
- **Master in Engineering: Computer Science**, *University of Leuven*, cum laude — 8 July 2005
  - Master's thesis: "Development of a framework for high-level perception", magna cum laude
- **High school education**
  - Sint Jan Berchmansinstituut Zonhoven: Latin-Mathematics — 1995-1999
  - Vrije Middenschool Zonhoven: Latin — 1993-1995

References

Recommendations can also be found at http://www.linkedin.com/in/jvanschoren

- **Prof. dr. Mykola Pechenizkiy**, Eindhoven University of Technology.
  Phone: +31 40 247 26 02, e-mail: m.pechenizkiy@tue.nl
- **Prof. dr. ir. Hendrik Blockeel**, University of Leuven, Belgium
  Phone: +32 16 32 76 43, e-mail: hendrik.blockeel@cs.kuleuven.be

Professional Skills

- **Programming languages**: Python, R, Java, PHP, Javascript
- **Languages**: English (proficient), Dutch (native), Spanish (native), French (fluent), German (basic)
- **Technologies**: Machine learning algorithms and systems (including deep learning), MapReduce/Spark, Web technology, Databases, Semantic Web
- **Software development**: Data structures, Algorithms, Design patterns. Agile, Scrum, Git. Open source development (OpenML), production-level recommender systems (CityLife app)
- **Leadership**: Research project leader, Open source project lead, PhD/MSc Supervisor, Conference chair.
- **Speaking and authorship**: University lecturer, (invited) speaker at many international conferences and workshops. Author of many scientific publications, book chapters, grant applications and project reports.

Awards

- Microsoft Azure Research Award, July 2016 + July 2017
- Dutch Data Prize, Research Data Netherlands, Nov 2016
- Best Demo Award, 17th European Conference on Machine Learning (ECML-PKDD), 2009

Grants

- NWO Commit2Data on Evolutionary data €854,045, Jul 2017
  - 'Dynamic Data Analytics through Automatically Constructed Machine Learning Pipelines'
- DARPA Data Driven Discovery of Models, €324,000, Apr 2017
  - 'AutoFlow: Automatic Workflow Construction and Optimization'
- Microsoft Azure Research Award, €40,000, Sep 2016-2017
  - 'A Cloud-Based Platform for Automated Machine Learning', Principal Investigator
- Dutch Science Foundation (NWO) Free Competition research grant, €240,000, Sep 2012 - Sep 2016
  - 'Massively Collaborative Data Mining', Principal Investigator
- EU PASCAL Harvest grant, €30,000, Aug 2012 - Feb 2013
  - 'MLOpen Machine Learning Platform', Principal Investigator

Selected Invited Talks

Videos available on *https://joaquinvanschoren.github.io*

- National eScience Symposium, Amsterdam, The Netherlands, Oct 2017
- ICML Workshop on Reproducible Machine Learning, Sydney, Australia, Aug 2017
- Amazon Research, Berlin, Germany and Cambridge, UK, Feb-Apr 2017
- NIPS Workshop on Challenges in Machine Learning (CiML), Barcelona, Spain, Dec 2016
- IBM Watson Research Center, New York, USA, Jun 2016
- Heavy Flavour Physics Data Mining workshop, Zurich, Switzerland, Feb 2016
- Open Data Science @ Sheffield workshop, Sheffield, UK, Dec 2015
- Intelligent Data Analysis 2015 (IDA), Horizon Talk, St Etienne, France, Oct 2015
- Statistical Computing (StatComp) Keynote, Ulm, Germany, Jul 2015
- ICML AutoML Workshop, Lille, France, Jul 2015
- European Conference on Data Analysis (ECDA) Keynote, Bremen, Germany, Jul 2014
- SIS Classification and Data Analysis Group Conference (CLADAG), Modena, Italy, Sep 2013

Society Membership

- OpenML steering committee member, Mar 2017 - ...
- Co-chair of the W3C ML-Schema Community Group, Oct 2015 - ...
- Senior member of the Dutch School for Information and Knowledge Systems (SIKS), Jan 2014 - ...

Academic Supervision

Doctoral Advisor for PhD Students

- Chris Wendler, Automatic Machine Learning on Evolving Data Streams, TU Eindhoven, 2018-...
- Pieter Gijsbers, Automatic Machine Learning Pipeline Synthesis, TU Eindhoven, 2017-...
- Chao Zhang, e-Coaching in Continuous Personal Health, TU Eindhoven, 2015-...
- Rafael Mantovani, Using Meta-learning for Hyperparameter Tuning, University of Sao Paolo, 2014-...
- Jan van Rijn, Massively Collaborative Machine Learning, Leiden University, 2012-2016

PDEng Thesis supervision (Professional Doctorates)

- Karthik Srinivasan, PDEng, Preventing Burglaries and Other Incidents, TU Eindhoven, 2014-2015.

Selected Teaching Activities

University Courses:

- Data Mining, Jheronimus Academy of Data Science (JADS), The Netherlands (2016 - . . .)
  - Responsible lecturer. 1st year Bachelor. Evaluation: 80% (teaching), 84% (course)
- Foundations of Data Mining, Eindhoven University of Technology, The Netherlands (2015 - . . .)
  - Responsible lecturer. 1st year Master. Evaluation: 75% (teaching), 78% (course)
- Web Technology, Eindhoven University of Technology, The Netherlands (2014 - 2018)
  - Responsible lecturer. 2nd year Bachelor. Evaluation: 72% (teaching), 69% (course)
- SINTEF Geilo Winter School, Norway (2017). 128 students.

Conference Tutorials:

- Automatic Machine Learning (ECMLPKDD, 2017)
- Connecting R to the Machine Learning Platform OpenML (UseR, 2017)
- Meta-learning and Algorithm Selection (ECMLPKDD, 2015)
- Meta-learning and Algorithm Selection (ECAI, 2014)

Selected Academic Community Activities

Conference organization

- Associate Chair (Industry Track), BeNeLearn 2017, Eindhoven, The Netherlands
- Workshop Chair, Automatic Machine Learning at ICML 2017, ECMLPKDD 2017, ICML 2016
- General Chair, Learning and Intelligent OptimizatioN Conference (LION 2016), Ischia, Italy
- Workshop Chair, Meta-Learning and Algorithm Selection at ECMLPKDD 2015, ECAI 2014
- Associate Chair (Demo track), European Conference on Machine Learning (ECMLPKDD 2013)
- Program Chair, BeNeLearn 2010-2011, The Hague - Leuven

Refereeing

- Programme Committee member: NIPS 2016-2017, ECML-PKDD 2012-2017, ECAI 2014-2016, KDD 2016, LION 2016, IJCNN 2015, IJCAI 2015, ESWC 2011-2015
- Journal referee: Machine Learning Journal (MLJ), Journal of Machine Learning Research (JMLR), Data Mining and Knowledge Discovery (DaMi), Semantic Web Journal (SWJ)

Other interests

Triathlon, Marathon running, Photography (published), Improvisational theater

Publications

All full texts available on *http://www.win.tue.nl/∼jvanscho*

(: Joint first author, **bold**: 25+ citations)*

Refereed Articles (Journal and Conference papers)

1. van Rijn, J.N., Holmes, G., Pfahringer, B., Vanschoren, J. (2017) The online performance estimation framework: Heterogeneous Ensemble Learning for Data Streams. *Machine Learning*, 107 (1), 149-176.
2. Olier, I., Sadawi, N., Bickerton, G.R., Vanschoren, J., Grosan, C., Soldatova, L., King, R.D. (2017) Meta-QSAR: learning how to learn QSARs. *Machine Learning*, 107 (1), 285-311.
3. Abdulrahman, S, Brazdil, P., van Rijn, J.N., Vanschoren, J. (2017) Speeding up Algorithm Selection via Meta-learning and Active Testing. *Machine Learning*, 107 (1), 79-108.
4. Gijsbers, P., Vanschoren, J., Olson, R. (2017) Layered TPOT: Speeding up Tree-based Pipeline Optimization. ECML 2017 Workshop on Automatic Selection, Configuration and Composition of Machine Learning Algorithms (AutoML 2017). CEUR Workshop Proceedings; vol. 1998.
5. Casalicchio, G., Hofner, B., Lang, M., Kirchhoff, D., Kerschke, P., Seibold, H., Bossek, J., Vanschoren, J., Bischl, B. (2017) OpenML: An R Package to Connect to the Networked Machine Learning Platform. *Computational Statistics* 32 (3), 1-15
6. Mantovani, R.G., Horvath, T., Cerri, R., Carvalho, A.P.L.F., Vanschoren, J. (2016) Hyper-parameter Tuning of a Decision Tree Induction Algorithm, *Brazilian Conference on Intelligent Systems (BRACIS 2016)*
7. Eerikainen, 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
8. **Bischl, B., Kerschke, P., Kotthoff, L., Lindauer, M., Malitsky, Y., Frechette, 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**
9. Gao, B., Berendt, B. and Vanschoren, J. (2016) Towards understanding online sentiment expression. An interdisciplinary approach with subgroup comparison and visualization. *Social Network Analysis and Mining*, 6 (1), 68:1-68:16
10. van Rijn, J.N., Abdulrahman, S.M., Brazdil, P. and Vanschoren, J. (2016) On the Evaluation of Algorithm Selection Problems. *Machine Learning Conference of Belgium and The Netherlands*, 1-2.
11. van Rijn, J.N., Holmes, G., Pfahringer, B., Vanschoren, J. (2015) Having a Blast: Meta-Learning and Heterogeneous Ensembles for Data Streams. *IEEE Proceedings of ICDM 2015*, 1003-1008.
12. Vanschoren, J., Bischl, B., Hutter, F., Sebag, M., Kegl, B., Schmid, M., Napolitano, G., Wolstencroft, K., Williams, A.R, and Lawrence, N (2015) Towards a Data Science Collaboratory. *Lecture Notes in Computer Science* (IDA 2015), 9385, XIX-XXI
13. van Rijn, J.N., Abdulrahman, S.M., Brazdil, P. and Vanschoren, J. (2015) Fast Algorithm Selection Using Learning Curves. *Lecture Notes in Computer Science* (IDA 2015), 9385, 298-309
14. Eerikainen, 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. *IEEE Computing in Cardiology*, 42, 293-297
15. Vanschoren, J,. van Rijn, J.N. and Bischl, B. (2015) Taking machine learning research online with OpenML. *JMLR Workshop and Conference Proceedings* (BigMine 2015), 41, 1-4.
16. van Rijn, J.N., Holmes, G., Pfahringer, B., Vanschoren, J. (2015) Case Study on Bagging Stable Classifiers for Data Streams. *Machine Learning Conference of Belgium and The Netherlands*, 1-6.
17. Gao, B., Berendt, B. and Vanschoren, J. (2015) Who is more positive in private? Analyzing sentiment differences across privacy levels and demographic factors in Facebook chats and posts. *IEEE/ACM Proceedings of ASONAM 2015*, 605-610
18. Mantovani, R.G., Rossi, A.D.L, Vanschoren, J., Bischl, B., Carvalho A.C.P.L.F. (2015) To tune or not to tune: recommending when to adjust SVM hyper-parameters via Meta-learning. *IEEE Proceedings of the International Joint Conference on Neural Networks (IJCNN 2015)*, 1-8
19. Mantovani, R.G., Rossi, A.D.L, Vanschoren, J., Bischl, B., Carvalho A.C.P.L.F. (2015) Effectiveness of Random Search in SVM hyper-parameter tuning. *IEEE Proceedings of the International Joint Conference on Neural Networks (IJCNN 2015)*
20. van Rijn, J.N., Holmes, G., Pfahringer, B. and Vanschoren, J. (2014) Algorithm Selection on Data Streams. *Lecture Notes in Computer Science* (Discovery Science), 8777, 325-336.

21. **Vanschoren, J., van Rijn, J.N., Bischl, B. and Torgo, L. (2013) OpenML: networked science in machine learning. *ACM SIGKDD Explorations*, 15 (2), 49-60.**
22. **van Rijn, J., Bischl, B., Torgo, L., Gao, B., Umaashankar, V., Fischer, S., Winter, P., Wiswedel, B., Berthold, M.R., and Vanschoren, J. (2013) OpenML: A Collaborative Science Platform. *Lecture Notes in Computer Science* (ECML PKDD 2013), 8190, 645-649**
23. Vanschoren, J., Braun, M. and Ong, C.S. (2013) Open science in machine learning. *Proceedings of CLADAG 2013*, 462-465. ISBN: 9788867871179
24. van Rijn, J., Umaashankar, V., Fischer, S., Bischl, B., Torgo, L., Gao, B., Winter, P., Wiswedel, B., Berthold, M.R., and Vanschoren, J. (2013) A RapidMiner extension for Open Machine Learning. *Proceedings of RCOMM 2013*, 59-70. ISBN: 978-3-8440-2145-5
25. **Serban, F.*, Vanschoren, J.*, Kietz, J.U. and Bernstein, A. (2012) A Survey of Intelligent Assistants for Data Analysis. *ACM Computing Surveys*, 45 (3), Art. 31**
26. **Vanschoren, J., Blockeel, H., Pfahringer, B. and Holmes, G. (2012) Experiment Databases: A new way to share, organize and learn from experiments. *Machine Learning*, 87(2), 127-158**
27. Reutemann, P., Vanschoren, J. (2012) Scientific Workflow Management with ADAMS. *Lecture Notes in Computer Science* (ECML PKDD 2012), 7524, 833-837
28. Vespier, U., Knobbe, A.J., Nijssen, S., Vanschoren, J. (2012) MDL-Based Analysis of Time Series at Multiple Time-Scales. *Lecture Notes in Computer Science* (ECML PKDD 2012), 7524, 371-386
29. **Leite, R., Brazdil P., Vanschoren, J. (2012) Selecting Classification Algorithms with Active Testing. *Lecture Notes in Computer Science* (MLDM 2012), 7376, 117-13**1
30. Gao, B. and Vanschoren, J. (2011) Visualizations of Machine Learning Behavior with Dimensionality Reduction Techniques. *Machine Learning Conference of Belgium and The Netherlands*, 35-42.
31. Vespier, U., Knobbe, A., Vanschoren, J., Miao, S., Koopman, A., Obladen, B., and Bosma, C. (2011) Traffic Events Modeling for Structural Health Monitoring. *Lecture Notes in Computer Science* (IDA 2011), 7014, 276-387
32. Vanschoren, J., Soldatova, S. (2010). Exposé: An Ontology for Data Mining Experiments. *Workshop on Third Generation Data Mining at ECML PKDD 2010*, 31-46.
33. Vanschoren, J., Blockeel, H. (2009). A community-based platform for machine learning experimentation. *Lecture Notes In Computer Science* (ECML-PKDD 2009), 5782, 750-754 - Best demo award
34. Vanschoren, J., Pfahringer, B., Holmes, G. (2008). Learning from the past with experiment databases. *Lecture Notes in Artificial Intelligence* (PRICAI 2008), 5351, 485-496
35. Vanschoren, J., Blockeel, H., Pfahringer, B., Holmes, G. (2008). Organizing the world's machine learning information. *Comm. in Computer and Information Science* (ISOLA 2008), 17, 693-708
36. Vanschoren, J. (2008). Experiment databases for machine learning. *NIPS Workshop on Machine Learning Open Source Software at NIPS 2008.*
37. Vanschoren, J., Blockeel, H. (2008). Investigating classifier learning behavior with experiment databases. *Data Analysis, Machine Learning and Applications* (GfKL 2007), 421-428
38. **Blockeel, H.*, Vanschoren, J.* (2007). Experiment databases: Towards an improved experimental methodology in machine learning. *Lecture Notes in Computer Science* (ECML 2007), 4702, 6-17. (Best Demo Award)**
39. 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*, 120-127.
40. Vanschoren, J., Blockeel, H. (2006). Towards understanding learning behavior. *Machine Learning Conference of Belgium and The Netherlands*, 89-96.

Refereed Workshop Articles and Abstracts

41. Gijsbers, P., Vanschoren, J., Olson, R.S. (2017) Layered TPOT: Speeding up Tree-based Pipeline Optimization. *Proceedings of the 2017 ECMLPKDD AutoML Workshop.*
42. Lawrynowicz, A., Esteves, D., Panov. P., Soru, T., Džeroski, S., Vanschoren, J (2016) An Algorithm, Implementation and Execution Ontology Design Pattern. *ISWC Workshop on Ontology and Semantic Web Patterns: 1-12*
43. Bernard, H. F., Heinrich, A., Vanschoren, J. (2016) Improved driver sleepiness prediction with CASH. *European Data Forum 2016.*
44. Zhang, C., van Wissen, A., Lakens, D., Vanschoren, J., de Ruyter, B.E.R., IJsselsteijn, W.A. (2016) Anticipating habit formation: a psychological computing approach to behavior change support. *UbiComp Adjunct 2016*: 1247-1254
45. Bischl, B., Bossek, J., 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 2016*.

46. Abdulrahman, S, Brazdil, P., van Rijn, J.N., Vanschoren, J. (2015) Algorithm Selection via Meta-learning and Sample-based Active Testing. *CEUR Workshop Proceedings* (ECMLPKDD 2015 Workshop on Metalearning and Algorithm Selection), 1455, 55-66
47. Mantovani, R.G., Rossi, A.L.D., Vanschoren, J., Carvalho, A.C.P.L.F. (2015) Meta-learning Recommendation of Default Hyper-parameter Values for SVMs in Classification Tasks. *CEUR Workshop Proceedings* (ECMLPKDD 2015 Workshop on Metalearning and Algorithm Selection), 1455, 80-92
48. van Rijn, J.N., Vanschoren, J. (2015) Sharing RapidMiner Workflows and Experiments with OpenML. *CEUR Workshop Proceedings* (ECMLPKDD 2015 Workshop on Metalearning and Algorithm Selection), 1455, 93-103
49. Vukicevic, M., Radovanovic, S., Vanschoren, J., Napolitano, G., Delibasic, B. (2015) Towards a Collaborative Platform for Advanced Meta-Learning in Healthcare Predictive Analytics. *CEUR Workshop Proceedings* (MetaSel @ ECMLPKDD 2015), 1455, 112-114
50. Knobbe A.J., Meeng M. Vanschoren J., Rees Jones S., Merlo Penning S. (2015) Reconstructing Medieval Social Networks from English and Latin Charters. Population Reconstruction 2014
51. van Rijn, J.N., Holmes, G., Pfahringer, B. and Vanschoren, J. (2014) Towards Meta-learning on Data Streams. Workshop on Meta-learning and Algorithm Selection *CEUR Workshop Proceedings* (MetaSel @ ECMLPKDD 2014), 1201, 37-38.
52. van Rijn, J. and Vanschoren, J. (2013) OpenML: An Open Science Platform for Machine Learning. *Machine Learning Conference of Belgium and The Netherlands*, 99-100.
53. Vanschoren, J. (2012). The Experiment Database for Machine Learning. *CEUR Workshop Proceedings* (ECAI 2012 Workshop on Planning to Learn), 950, 30-37.
54. Vespier, U., Knobbe, A., Nijssen, S., Vanschoren, S. (2012). MDL-Based Identification of Relevant Temporal Scales in Time Series. *Workshop on Information Theoretic Methods in Science and Engineering, WITMSE 2012*.
55. Miao, S., Knobbe, A., Vanschoren, J., Vespier, U., Koopman, A., Cachucho, R., Chen, X. (2011). A Range of Data Mining Techniques to Correlate Multiple Sensor Types. *Dutch-Belgian Database Day*, Art.5.
56. Vanschoren, J., Soldatova, S. (2010). Collaborative Meta-Learning. *Planning to Learn workshop at ECAI 2010*, 37-46.
57. Vanschoren, J., Blockeel, H. (2009). Stand on the shoulders of giants: towards a portal for collaborative experimentation in data mining. *3rd Generation DM Workshop, ECML PKDD '09*, 88-99
58. Vanschoren, J., Blockeel, H., Pfahringer, B., Holmes, G. (2008). Organizing the world's machine learning information. *Workshop on Third Generation Data Mining at ECML PKDD 2008*.
59. Vanschoren, J., Blockeel, H., Pfahringer, B., Holmes, G. (2008). Experiment databases: Creating a new platform for meta-learning research. *Planning to Learn Workshop, ICML 2008*, 10-15.

Books and proceedings edited

60. Hutter, F., Kotthoff, L., Vanschoren, J., (Eds.): Automatic Machine Learning 2016. Proceedings of the ICML Workshop on Automatic Machine Learning, *Proceedings of Machine Learning Research, 64*.
61. Festa, P., Sellmann, M., Vanschoren, J., (Eds.): Learning and Intelligent Optimization 2016, Proceedings of the 10th International Conference, LION 10, Ischia Island, Italy, *Lecture Notes in Computer Science, 10079, Springer*.
62. Vanschoren, J., Brazdil, P., Soares, C., Kotthoff, L. (Eds.): Meta-learning and Algorithm Selection 2015. Proceedings of the ECMLPKDD Workshop on Meta-learning and Algorithm Selection, *CEUR Workshop Proceedings, 1455* (2015). Online CEUR-WS.org/Vol-1455.
63. Vanschoren, J., Brazdil, P., Soares, C., Kotthoff, L. (Eds.): Meta-learning and Algorithm Selection 2014. Proceedings of the ECMLPKDD Workshop on Meta-learning and Algorithm Selection, *CEUR Workshop Proceedings, 1201* (2014). Online CEUR-WS.org/Vol-1201.
64. Vanschoren, J., Brazdil, P., Kietz, J-U (Eds.): Planning to Learn 2012. Proceedings of the ECAI Workshop on Planning to Learn (PlanLearn 2012), *CEUR Workshop Proceedings, 950* (2012). Online CEUR-WS.org/Vol-950, urn:nbn:de:0074-560-7.
65. van der Putten, P.H.W, Veenman, C., Vanschoren, J., Israel, M., Blockeel, H. (Eds.): Proceedings of the 20th Annual Belgian-Dutch Conference on Machine Learning (BENELEARN 2011). The Hague, Universiteit Leiden (2011)

Book chapters

66. Lawrynowicz, A., Esteves, D., Panov. P., Soru, T., Džeroski, S., Vanschoren, J (2016) An Algorithm, Implementation and Execution Ontology Design Pattern. *In: Studies on the Semantic Web 25* (Hitzler. P., Gangemi, A., Janowicz, K., Krisnadhi, A., Presutti, V., eds.) IOS Press.
67. Vanschoren, J., Vespier, U., Miao, S., Cachucho, R. and Knobbe, A. (2013) Large-scale sensor network analysis. *In: Big Data Management, Technologies, and Applications* (Hu W.C., Kaabouch, N., eds.), IGI Global.
68. Vanschoren, J. (2011) Meta-learning architectures. *In: Meta-learning in Computational Intelligence* (N. Jankowski, W. Duch, K. Grabczewski, eds.), Springer.
69. **Berendt, B., Vanschoren, J. and Gao, B. (2011) Datenanalyse und -visualisierung. In: Handbuch Forschungsdatenmanagement (S. Büttner, H-C. Hobohm, L. Müller, eds.), Bock+Herchen.**
70. Vanschoren, J., Blockeel, H. (2010) Experiment Databases. *In: Inductive Databases and Constraint-Based Data Mining* (S. Dzeroski, B. Goethals, P. Panov, eds.), Springer.

Dissertations

71. Vanschoren, J. (2010). Understanding Machine Learning Performance with Experiment Databases. PhD Thesis, Katholieke Universiteit Leuven.