

## 8. CURRICULUM VITAE AND PUBLICATIONS

### PART 1

1a. Personal details				
<b>Full name</b>	<i>Title</i> Associate Professor	<i>First name</i> Bernhard	<i>Second name(s)</i> Markus	<i>Family name</i> Pfahringer
<b>Present position</b>	Professor			
<b>Organisation/Employer</b>	The University of Waikato			
<b>Contact address</b>	Hillcrest Road			
	Hillcrest			
	Hamilton		<b>Post code</b>	3240
<b>Work telephone</b>	07-838 4041	<b>Mobile</b>	021-027 021 03	
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<b>Personal website (if applicable)</b>	http://www.cs.waikato.ac.nz/~bernhard			

### 1b. Academic qualifications

1995, *Dr.techn.*, Computer Science, Vienna University of Technology  
 1985, *Dipl.-Ing.*, Computer Science, Vienna University of Technology

### 1c. Professional positions held

2015 - present: Professor, Computer Science Department, University of Waikato  
 2013 - present: Head of Department, Computer Science, University of Waikato  
 2007 - 2014: Associate Professor, Computer Science Department, University of Waikato  
 2000 - 2007: Senior Lecturer, Computer Science Department, University of Waikato  
 1997 - 2000: Research Fellow, Austrian Research Institute for AI  
 1996 - 1997: Postdoctoral Research Fellow, Computer Science, University of Waikato  
 1992 - 1998: Research Fellow, Austrian Research Institute for AI, Machine Learning  
 1986 - 1991: Research Assistant, Inst. for Medical Cybernetics and AI, University of Vienna  
 1985 - 1991: Research Associate, Austrian Research Institute for AI, Expert Systems

### 1d. Present research/professional speciality

*Machine Learning, data mining.*

### 1e. Total years research experience:

24 years

### 1f. Professional distinctions and memberships (including honours, prizes, scholarships, boards or governance roles, etc)

2015 - ongoing: Editorial board member *Data Mining and Knowledge Discovery Journal*  
 2004 - ongoing: Editorial board member *Machine Learning Journal*

2014 - ongoing: Founding member, and Co-Vice Chair: ACM SIGKDD ANZ Chapter  
 2013 - ongoing: Member of the IEEE Data Mining TC of the CI Society  
 2010 - ongoing: Steering Committee Member for Asian Conference on Machine Learning  
 2010 - ongoing: Steering Committee Member for Discovery Science Conference

2014 invited keynote talk at the 14th International Conference on Knowledge Management and Knowledge Technologies, Graz, Austria

2013 invited keynote talk at the Machine Learning for Sensory Data Analysis Workshop (MLSDA 2013), Dunedin

2012 invited keynote talk at The First International Workshop on Learning with Weak Supervision (LAWS'12), ACML, Singapore

2015 Program co-chair, Joint Australasian AI Conference 2015, Canberra, Australia

2010 Program co-chair Discovery Science 2010, Canberra, Australia

2005 Co-organizer and program co-chair ILP2005, Bonn, Germany

2015 Social Media Chair, 21th ACM SIGKDD Conference, KDD15, Sydney, Australia

2014 Area Chair, ECML PKDD 2014, Nancy, France

2013 Area Chair, ECML PKDD 2013, Prague, Czech Republic

2012 Special Session Chair, PRICAI2012, Kuching, Malaysia

2012 Area Chair, ECML PKDD 2012, Bristol, UK

2011 Area Chair, ICML2011, Bellevue, Washington, USA

2009 Workshop chair, PAKDD2009, Bangkok, Thailand

2007 Area Chair, ECML/PKDD2007, Warsaw, Poland

2006 Area Chair, ECML/PKDD2006, Berlin, Germany

2004 Workshop chair, PRICAI2004, Auckland, New Zealand

2002 - ongoing: Program committee member / reviewer for various conferences, including KDD2014, ACML2014, ILP2014, DS2014, KDD2013, ILP2013, DS2013, ACML2013, KDD2012, ILP2012, DS2012, ACML2012, KDD2011, ECMLPKDD2011, IJCAI2011, ILP2011, PAKDD2011, ACML2011, ICML2010, KDD2009, ECML2009, ECML2008, ECML2007, ACML2009, PAKDD2010, PAKDD2009, PAKDD2008, PAKDD2007, DS2009, DS2008, DS2007, ECAI2006, ICML2006, KDD2006, DS2006, IJCAI2005, ICML2005, DS2005, ECML2005, PKDD2005, ICML2004, ECML2004, IJCAI2003, ICML2003, ECML2003, ICML2002.

2009 PAKDD 2<sup>nd</sup> place: credit card default prediction challenge

2006 ECML/PKDD Challenge, Creative Award, and tied for 1<sup>st</sup> place classification award

2005 ACM SIGKDD service award for the Weka team

2004 Winning entry for the 2004 KDD Cup protein prediction task

2003 2<sup>nd</sup> place in the EUNITE competition on 'Prediction of glass production quality'

*Student supervision*

PhD students: 7 (chief supervisor), 3 (co-supervisor)

Masters students: 6 (chief supervisor), 3 (co-supervisor)

Honours students: 14

*Grants (since arriving in New Zealand in 2000)*

BuildIT Post-Doctoral Award for Dr.Bifet, 2010-2012

Objective Leader, FRST project on GCMS prediction, 2008-2012

Principal Investigator, Marsden Grant, 2004-2007

Objective Leader, FRST project on NIR prediction, 2004-2007

Consulting for Metrix, Orica, Crop and Food, Hill Labs and Mariner7.com

<b>1g. Total number of peer reviewed publications and patents</b>	Journal articles	Books, book chapters, books edited	Conference proceedings	Patents
	21	9	79	0

## PART 2

### 2a. Research publications and dissemination

#### Peer reviewed journal articles

Hapfelmeier A., **Pfahring B.**, Kramer S. (2014) Pruning Incremental Linear Model Trees with Approximate Lookahead. *IEEE Trans. Knowl. Data Eng.* 26(8): 2072-2076

Torgo L., Branco P., Ribeiro R.P., **Pfahring B.** (2014) Re-sampling Strategies for Regression. *Expert Systems*, doi: 10.1111/exsy.12081.

Zliobaite I., Bifet A., Read J., **Pfahring B.**, Holmes G. (2014) Evaluation methods and decision theory for classification of streaming data with temporal dependence. *Machine Learning*, April 2014, 1–28.

Indre Zliobaite, Albert Bifet, **Pfahring B.**, Geoffrey Holmes (2014) Active Learning With Drifting Streaming Data. *IEEE Trans. NNLS* 25(1): 27-39.

Quan Sun, **Pfahring B.** (2013) Pairwise meta-rules for better meta-learning-based algorithm ranking. *Machine Learning* 93(1): 141-161.

Albert Bifet, Eibe Frank, Geoff Holmes, **Pfahring B.** (2012) Ensembles of Restricted Hoeffding Trees, *ACM TIST*, 3, 30.

Jesse Read, Albert Bifet, Geoff Holmes, **Pfahring B.** (2012) Scalable and efficient multi-label classification for evolving data streams, *Machine Learning Journal*, 88, 243-272.

Joaquin Vanschoren, Hendrik Blockeel, **Pfahring B.** and Geoffrey Holmes (2012) Experiment databases: A new way to share, organize and learn from experiments, *Machine Learning Journal*, 87, 127-158.

Jesse Read, **Pfahring B.**, Geoff Holmes and Eibe Frank (2011) Classifier chains for multi-label classification, *Machine Learning Journal*, 85, 333-359.

Bifet, A., Holmes, G., Kirkby, R. and **Pfahring B.** (2010) MOA: Massive Online Analysis. *Journal of Machine Learning Research* 11, 1601-1604.

Bouckaert, R. R., Frank, E., Hall, M. A., Holmes, G., **Pfahring B.**, Reutemann, P. and Witten, I. H. (2010) WEKA: Experiences with a Java open-source project. *Journal of Machine Learning Research (JMLR)* 11, 2533-2541.

Mark Hall, Eibe Frank, Geoffrey Holmes, **Pfahring B.**, Peter Reutemann, Ian H. Witten (2009) The WEKA data mining software: an update, *ACM SIGKDD Explorations*, v11, July, pp.10-18.

#### Peer reviewed books, book chapters, books edited

**Pfahring B.**, Holmes, G. and Hoffmann, A. (eds), (2010) *Discovery Science: Thirteenth International Conference, DS 2010 Proceedings*, LNAI 6332. Canberra, Australia, 1-384. Springer, Germany.

Stefan Kramer, **Pfahring B.** (Eds) (2005) *Inductive Logic Programming, 15th International Conference, ILP2005*, LNAI 3625.

Stefan Kramer, **Pfahring B.** (Eds) (2005) *Late-breaking papers, Inductive Logic Programming, 15th International Conference, ILP2005*, TUM-I0510, Munich University of Technology.

Eibe Frank, Mark Hall, Geoffrey Holmes, Richard Kirkby, **Pfahring B.**, Ian H. Witten, and Len Trigg (2005) *WEKA: A Machine Learning Workbench for Data Mining*. *Data Mining and Knowledge Discovery Handbook*. Springer-Verlag.

Giraud-Carrier C., **Pfahring B.**(eds.):*Proceedings of the ICML-99 Workshop on Recent Advances in Meta-Learning and Future Work* Bled, Slovenia, 1999.

Fuernkranz J., **Pfahring B.**:*Guest Editorial: First-Order Knowledge Discovery in Databases*, *Applied Artificial Intelligence*, 12(5), 345-362, 1998.

**Pfahring B.**, Fuernkranz J.(eds.):*Proceedings of the MLnet Familiarization Workshop on Data Mining with Inductive Logic Programming*, Bari, Italy., 1996.

Refereed conference proceedings

- Rijn J.van, **Pfahring B.**, Holmes G. and Vanschoren J. (2014) Algorithm Selection Problem in Stream Mining, Discovery Science, 325–336.
- Sun Q., **Pfahring B.** (2014) Hierarchical Meta-Rules for Scalable Meta-Learning, PRI-CAI, 383–395.
- Dino Ienco, Albert Bifet, **Pfahring B.**, Pascal Poncelet (2014) Change Detection in Categorical Evolving Data Streams, SAC2014, 792–797.
- Eibe Frank, **Pfahring B.** (2013) Propositionalisation of Multi-instance Data Using Random Forests. Australasian Conference on Artificial Intelligence 2013: 362-373.
- Dino Ienco, Albert Bifet, Indre Zliobaite, **Pfahring B.** (2013) Clustering Based Active Learning for Evolving Data Streams. Discovery Science 2013: 79-93.
- Lus Torgo, Rita P. Ribeiro, **Pfahring B.**, Paula Branco (2013) SMOTE for Regression. EPIA 2013: 378-389.
- Albert Bifet, Jesse Read, **Pfahring B.**, Geoff Holmes, Indre Zliobaite (2013) CD-MOA: Change Detection Framework for Massive Online Analysis. IDA 2013: 92-103.
- Quan Sun, **Pfahring B.**, Michael Mayo (2013) Towards a Framework for Designing Full Model Selection and Optimization Systems. MCS 2013: 259-270.
- Albert Bifet, Jesse Read, Indre Zliobaite, **Pfahring B.**, Geoff Holmes (2013) Pitfalls in Benchmarking Data Stream Classification and How to Avoid Them. ECML/PKDD (1) 2013: 465-479.
- Madeleine Seeland, Stefan Kramer, **Pfahring B.** (2013) Model Selection Based Product Kernel Learning for Regression on Graphs, SAC 2013, 136-143.
- Albert Bifet, Jesse Read, **Pfahring B.**, Geoff Holmes (2013) Efficient Data Stream Classification via Probabilistic Adaptive Windows, SAC 2013, 801-806.
- Quan Sun, **Pfahring B.** (2012) Bagging Ensemble Selection for Regression. Australasian Conference on Artificial Intelligence 2012, 695-706.
- Jesse Read, Albert Bifet, **Pfahring B.**, Geoff Holmes (2012) Batch-Incremental versus Instance-Incremental Learning in Dynamic and Evolving Data. IDA 2012, 313-323.
- Madeleine Seeland, Fabian Buchwald, Stefan Kramer, **Pfahring B.** (2012): Maximum Common Subgraph based locally weighted regression. SAC 2012, 165-172.
- Jörg Wicker, **Pfahring B.**, Stefan Kramer (2012): Multi-label classification using boolean matrix decomposition. SAC 2012, 179-186.
- Indre Zliobaite, Albert Bifet, **Pfahring B.**, Geoff Holmes (2011) Active Learning with Evolving Streaming Data. ECML/PKDD 2011:597-612.
- Pfahring B.** (2011) Semi-random Model Tree Ensembles: An Effective and Scalable Regression Method. Australasian Conference on Artificial Intelligence 2011:231-240.
- Quan Sun, **Pfahring B.** (2011) Bagging Ensemble Selection. Australasian Conference on Artificial Intelligence 2011:251-260.
- Albert Bifet, Geoffrey Holmes, **Pfahring B.** (2011) MOA-TweetReader: Real-Time Analysis in Twitter Streaming Data. Discovery Science 2011:46-60.
- Albert Bifet, Geoff Holmes, **Pfahring B.**, Jesse Read, Philipp Kranen, Hardy Kremer, Timm Jansen, Thomas Seidl (2011) MOA: A Real-Time Analytics Open Source Framework. ECML/PKDD 2011:617-620.
- Albert Bifet, Geoff Holmes, **Pfahring B.**, Ricard Gavaldà (2011) Mining frequent closed graphs on evolving data streams. KDD 2011:591-599.
- Hardy Kremer, Philipp Kranen, Timm Jansen, Thomas Seidl, Albert Bifet, Geoff Holmes, **Pfahring B.** (2011) An effective evaluation measure for clustering on evolving data streams. KDD 2011:868-876.

Bifet, A., Frank, E., Holmes, G. and **Pfahring B.** (2010) Accurate ensembles for data streams: combining restricted Hoeffding trees using stacking. Sugiyama, M. and Yang, Q. (eds), Proc Second Asian Conference on Machine Learning (ACML2010), JMLR: Workshop and Conference Proceedings 13, Tokyo, Japan, 225-240. JMLR.

Bifet, A., Holmes, G. and **Pfahring B.** (2010) Leveraging bagging for evolving data streams. Balczar, J. L., Bonchi, F., Gionis, A., et al. (eds), Proc European Conference on Machine Learning and Knowledge Discovery in Databases 2010 (ECML PKDD 2010), Part I, LNAI 6321, Barcelona, Spain, 135-150.

Bifet, A., Holmes, G., **Pfahring B.** and Frank, E. (2010) Fast perceptron decision tree learning from evolving data streams. Zaki, M. J., Yu, J. X., Ravindran, B., et al. (eds), Proc Fourteenth Pacific-Asia Conference on Advances in Knowledge Discovery and Data Mining (PAKDD 2010), LNCS 6119, Hyderabad, India, 299-310.

Jesse Read, **Pfahring B.**, Geoffrey Holmes, Eibe Frank (2009): Classifier chains for multi-label classification, ECML/PKDD 2009, Bled, Slovenia.

Remco Bouckaert, Geoffrey Holmes, **Pfahring B.**, Dale Fletcher (2009): Gaussian processes on graphics cards for NIRS, NIR2009, Bangkok, Thailand.

Albert Bifet, Geoffrey Holmes, **Pfahring B.**, Ricard Gavaldà (2009): Improving adaptive bagging methods for evolving data streams, ACML2009, Nanjing, China.

**Pfahring B.**, Dale Fletcher, Remco Bouckaert, Geoffrey Holmes (2009): Random model trees: a competitive off-the-shelf technology for NIRS, NIR2009, Bangkok, Thailand.

Stefan Mutter, **Pfahring B.**, Geoffrey Holmes (2009): The positive effects of negative information: extending one-class classification models in binary proteomic sequence classification, AI2009, Melbourne, Australia.

Albert Bifet, Geoffrey Holmes, **Pfahring B.**, Richard Kirkby, Ricard Gavaldà (2009): New Ensemble Methods for Evolving Data Streams. KDD2009, Paris, France.

Grant Anderson and **Pfahring B.** (2009): Relational Random Forests based on Random Relational Rules, IJCAI2009, Pasadena, California, USA.

Stefan Mutter, **Pfahring B.**, Geoffrey Holmes: Propositionalisation of Profile Hidden Markov Models for Biological Sequence Analysis. Australasian Conference on Artificial Intelligence 2008: 278-288.

Xing Wu, Geoffrey Holmes, **Pfahring B.**: Mining Arbitrarily Large Datasets Using Heuristic k-Nearest Neighbour Search. Australasian Conference on Artificial Intelligence 2008: 355-361.

Jesse Read, **Pfahring B.**, Geoffrey Holmes: Multi-label Classification Using Ensembles of Pruned Sets. ICDM 2008: 995-1000.

Joaquin Vanschoren, Hendrik Blockeel, **Pfahring B.**, Geoffrey Holmes: Organizing the World's Machine Learning Information. ISoLA 2008: 693-708.

Joaquin Vanschoren, **Pfahring B.**, Geoffrey Holmes: Learning from the Past with Experiment Databases. PRICAI 2008: 485-496.

**Pfahring B.**, Geoffrey Holmes, Richard Kirkby: Handling Numeric Attributes in Hoeffding Trees. PAKDD2008, Osaka, Japan.

Grant Anderson and **Pfahring B.**: Exploiting Propositionalization based on Random Relational Rules for Semi-Supervised Learning, PAKDD2008, Osaka, Japan.

**Pfahring B.**, Claire Leschi, Peter Reutemann: Scaling Up Semi-supervised Learning: An Efficient and Effective LLGC Variant. PAKDD 2007: 236-247.

**Pfahring B.**, Geoffrey Holmes, Richard Kirkby: New Options for Hoeffding Trees. Australian Conference on Artificial Intelligence 2007: 90-99.