Curriculum Vitae of Robert Craig Holte

(November 18, 2022)

current status: Professor Emeritus
contact via email to: rholte@ualberta.ca

Education

B.Sc. (1st Class Honours), Computer Science, University of Manitoba (1977)
M.Sc., Computer Science, University of Manitoba (1980)
Ph.D., Brunel University, England (1988)

Academic Experience

Professor Emeritus (01/2018 to present). Computing Science Department, University of Alberta.

Visiting Professor (01/2018 to 07/2018). Computer Science and Engineering Dept., Universidad Carlos III de Madrid, Spain.

Visiting Professor (01/2017 to 02/2017). Departamento de Informatica, Universidade Federal de Viçosa, Brazil.

Visiting Professor (01/2016 to 02/2016). Departamento de Informatica, Universidade Federal de Viçosa, Brazil.

Visiting Professor (03/2015 to 04/2015). Departamento de Informatica, Universidade Federal de Viçosa, Brazil.

Contract Professor (01/2015 to 12/2017). Computing Science Department, University of Alberta.

Visiting Professor (01/2014 to 02/2014). Dept. Mathematics and Computer Science, University of Basel, Switzerland.

Vice Dean (07/2007 to 06/2013). Faculty of Science, University of Alberta.

Full Professor (tenured) (07/2001 to 12/2014). Computing Science Department, University of Alberta.

Visiting Professor (02/98 to 04/98). Computer Science Department, University of Waikato, New Zealand.

Associate Professor (tenured) (07/92 to 06/2001). Computer Science Department/SITE, University of Ottawa.

Assistant Professor (07/89 to 06/92). Computer Science Department, University of Ottawa.

Visiting Research Scholar (01/88 to 04/89). Computer Sciences Department, University of Texas at Austin.

Lecturer (06/88 to 08/88). Computer Sciences Department, University of Texas at Austin.

Lecturer (09/86 to 12/86). Department of Electrical Engineering and Electronics, Brunel University.

Research Fellow (06/85 to 04/86). Department of Computer Science, Brunel University.

Research Associate (10/79 to 10/80). Special Devices Dept., Rehabilitation Centre for Children, Winnipeg.

Honours and Awards

2021 - CS-Can|Info-Can Lifetime Achievement Award in Computer Science.

2019 - Lifetime Achievement Award, Canadian AI Association (CAIAC).

2018 - Career Achievement Award, presented by the Symposium on Combinatorial Search.

2018 - Santander Chair of Excellence, Universidad Carlos III de Madrid, Spain.

2017 - keynote speaker at the Canadian Artificial Intelligence Conference

2016 - invited speaker at the International Joint Conference on Artificial Intelligence (IJCAI)

2016 - Outstanding Paper Award, Conference of the Association for the Advancement of Artificial Intelligence (AAAI).

2013 - invited speaker at the workshop on Learning and Planning associated with the International Conference on Automated Planning and Scheduling (ICAPS).

2011 - elected Fellow of the Association for the Advancement of Artificial Intelligence (AAAI).

2011 - invited speaker at the 24th Florida Artificial Intelligence Research Society conference.

2011 - best Program Committee member (Symposium on Combinatorial Search)

2009 - invited speaker at the joint session of the Symposium on Abstraction, Reformulation, and Approximation (SARA) and the Symposium on Combinatorial Search (SoCS).

2008 - invited speaker at the Twelfth Pacific-Asia Conference on Knowledge Discovery and Data Mining (PAKDD'08), Osaka, Japan, May 21-23, 2008.

2006 - member of the AICML team that was awarded the Outstanding Leadership in Alberta Technology Award, by the Alberta Science and Technology Leadership Foundation (ASTech).

2006 - awarded the Computing Science department's Service award

Research Grants

The amounts shown are average amounts per annum. In addition, I have been a co-investigator in the Alberta Ingenuity Centre for Machine Learning (AICML), now called Amii, since its inception. It has received major funding (millions per year) continuously since 2002 from various provincial sources and, more recently, from the Federal Pan-Canadian Artificial Intelligence Strategy.

2012-2017. NSERC Discovery Grant. $42,000.

2007-2013. Faculty of Science Vice-Dean's Research Support. $18,000.

2003-2012 NSERC Discovery Grant. $34,000.

2007. Google research gift. $70,000. co-investigator: Joel Martin (NRC).

2006. IBM. "Machine Learning for the Eclipse Environment". $29,600.

2004-2007. NSERC Strategic Grant. "Intelligent Agents for Interactive Entertainment". $195,000. co-investigators: J. Schaeffer (p.i.), D. Szafron, M. Buro, M. Bowling, D. Schuurmans.

2002-2006. CFI. "High-Performance Infrastructure for Search and Optimization". $200,000. Intelligent Agents in co-investigators: Nelson Amaral (p.i.), G. Lin, J. Sander, M. Mueller, D. Rafiei.

2002-2005. IRIS. "Commercial Computer Games". $157,333. co-investigators: J. Schaeffer (p.i.), M. Mueller, R. Greiner, J. Denziger, D. Szafron.

2001-2002. University of Alberta startup grant. $45,000.

2000-2002. CITO. "Content Extraction from On-line Documents". $70,000. co-investigators: Stan Matwin, Stan Szpakowicz, Ken Barker

1999-2003. NSERC Discovery Grant. $23,100.

1998-2001. NSERC. "Data Analysis: Integrated Methodologies for Knowledge Discovery and Machine Learning". $144,000. co-investigators: Nick Cercone (p.i.), H. Hamilton, W. Ziarko, S. Matwin.

1998-2000 CITO. "Case-based Reasoning: Knowledge Management and Applications". $100,000. co-investigators: Janice Glasgow (p.i.), Nick Cercone, Igor Jurisica, Stan Matwin.

1996-99. Industrial Partnership Access. $170,000. co-investigators: Stan Matwin, Stan Szpakowicz, NRC research staff.

1995-99. NSERC Discovery Grant. $17,100.

1997. ProMira. "Manufacturing Planning Algorithms". $25,000. co-investigator: Sylvia Boyd.

1995-97. ITRC. "Case-based planning and Learning for Software Reuse". $120,000. co-investigators: Janice Glasgow (p.i.), Stan Matwin, Qiang Yang.

1995-97. PRECARN and MDA. "Research into Learning Techniques to Aid Automatic Detection of and Environmental Hazards". $104,000. co-investigator: Stan Matwin.

1992-95. NSERC Discovery Grant. $15,000.

1990-93. NSERC Strategic Grant. "Machine learning Applied to Software Re-use". $94,000. co-investigators: Stan Matwin (p.i.), Franz Oppacher.

1990-92. NSERC Discovery Grant. $16,896

Publications in Refereed Journals

Robert C. Holte, Ariel Felner, Guni Sharon, Nathan R. Sturtevant, and Jingwei Chen (2017), MM: a Bidirectional Search Algorithm that is Guaranteed to Meet in the Middle, *Artificial Intelligence* 252:232-266.

Levi H. S. Lelis, Roni Stern, Shahab Jabbari Arfaee, Sandra Zilles, Ariel Felner, and Robert C. Holte (2015), Predicting Optimal Solution Costs with Bidirectional Stratified Sampling in Regular Search Spaces, *Artificial Intelligence* 230:51-73.

Levi H. S. Lelis, Roni Stern, Ariel Felner, Sandra Zilles, and Robert C. Holte (2014), Predicting optimal solution cost with conditional probabilities, *Annals of Mathematics and Artificial Intelligence* 72(3-4): 267-295.

Robert C. Holte and Neil Burch (2014), Automatic Move Pruning for Single-Agent Search, *AI Communications*, volume 27, no.4, pp.363-383.

Meir Goldenberg, Ariel Felner, Roni Stern, Guni Sharon, Nathan Sturtevant, Robert C. Holte, and Jonathan Schaeffer (2014), Enhanced Partial Expansion A*, *Journal of Artificial Intelligence Research* 50:141-187.

Levi H. S. Lelis, Sandra Zilles, and Robert C. Holte (2013), Predicting the Size of IDA*'s Search Tree, *Artificial Intelligence* 196:53-76.

Shahab Jabbari Arfaee, Sandra Zilles, and Robert C. Holte (2011), Learning Heuristic Functions for Large State Spaces, *Artificial Intelligence* 175:2075-2098.

Ariel Felner, Uzi Zahavi, Robert Holte, Jonathan Schaeffer, Nathan Sturtevant, and Zhifu Zhang (2011), Inconsistent Heuristics in Theory and Practice, *Artificial Intelligence* 175(9-10): 1570-1603.

Sandra Zilles, Steffen Lange, Robert Holte, and Martin Zinkevich (2011), Models of Cooperative Teaching and Learning, *Journal of Machine Learning Research* 12:349-384.

Sandra Zilles and Robert C. Holte (2010), The computational complexity of avoiding spurious states in state space abstraction, *Artificial Intelligence* 174:1072-1092.

U. Zahavi, A. Felner, N. Burch, and R. Holte (2010), Predicting the Performance of IDA* with Conditional Distributions, *Journal of Artificial Intelligence Research* 37: 41-83.

Finnegan Southey, Bret Hoehn, and Robert C. Holte (2009), Effective Short-Term Opponent Exploitation in Simplified Poker, *Machine Learning*, vol. 74(2), pp. 159-189.

Fan Yang, Joseph Culberson, Robert Holte, Uzi Zahavi, and Ariel Felner (2008), A General Theory of Additive State Space Abstractions, *Journal of Artificial Intelligence Research*, vol.32, pp.631-662.

Uzi Zahavi, Ariel Felner, Robert C. Holte, and Jonathan Schaeffer (2008), Duality in Permutation State Spaces and the Dual Search Algorithm, *Artificial Intelligence*, vol. 172, pp. 514-540.

Ariel Felner, Rich Korf, Ram Meshulam, and Robert C. Holte (2007), Compressed Pattern Databases, *Journal of Artificial Intelligence Research*, vol. 30, pp. 213-247.

Robert C. Holte, Ariel Felner, Jack Newton, Ram Meshulam, and David Furcy (2006), Maximizing over Multiple Pattern Databases Speeds up Heuristic Search, *Artificial Intelligence*, vol. 170, pp. 1123-1136.

Chris Drummond and Robert C. Holte (2006), Cost Curves: An Improved Method for Visualizing Classifier Performance, *Machine Learning* 65(1): 95-130.

Robert Niewiadomski, Jose Nelson Amaral, and Robert C. Holte (2004), A Performance Study of Data Layout Techniques for Improving Data Locality in Refinement-Based Pathfinding, ACM Journal of Experimental Algorithmics, 9(1.2):1-28.

Robert C. Holte and Berthe Y. Choueiry (2003), Abstraction and Reformulation in Artificial Intelligence, *Philosophical Transactions of the Royal Society: Biological Sciences,* volume 358, no. 1435, pp. 1197-1204.

Chris Drummond, Dan Ionescu, and Robert C. Holte (2000), A Learning Agent that Assists the Browsing of Software Libraries, *IEEE Transactions on Software Engineering*, vol. 26, no. 12, pp. 1179-1196.

Miroslav Kubat, Robert C. Holte, and Stan Matwin (1998), Machine Learning for the Detection of Oil Spills in Satellite Radar Images, *Machine Learning*, vol. 30, no. 2-3, pp. 195-216.

R.C. Holte, T. Mkadmi, R.M. Zimmer, and A.J. MacDonald (1996), Speeding Up Problem-Solving by Abstraction: A Graph-Oriented Approach, *Artificial Intelligence*, vol. 85, pp. 321-361.

Robert C. Holte (1993), Very Simple Classification Rules Perform Well on Most Commonly-Used Datasets, *Machine Learning*, vol. 11, pp. 63-91.

Robert Holte, Louis Rosier, Igor Tulchinsky, and Donald Varvel (1992), Pinwheel Scheduling with Two Distinct Numbers, *Theoretical Computer Science Part A*, vol. 100(1), pp. 105-135.

Robert Zimmer, A J MacDonald and R. C. Holte (1991), CAD for Verified Hardware Design via Category Theory, *Microprocessing and Microprogramming* Journal, vol. 32, pp. 691-698.

Bruce W. Porter, E. Ray Bareiss, and Robert C. Holte (1990), Concept Learning and Heuristic Classification in Weak-Theory Domains, *Artificial Intelligence* 45(1-2):229-263. Reprinted in Readings in Machine Learning, J. Shavlik and T.G. Dietterich (editors), Morgan-Kaufmann, pp. 710-746.

H.C. Williams and R. Holte (1978), Some Observations on Primality Testing, *Mathematics of Computation*, vol.XXXII (July), pp. 905-917.

Publications in Refereed Conferences

Sofia Lemons, Carlos Linares López, Robert C. Holte and Wheeler Ruml (2022), Beam Search: Faster and Monotonic, *ICAPS*.

Robert C. Holte, Seyyed Mahmoud Mousavi, and Sandra Zilles (2022), Distinguishing Relational Pattern Languages With a Small Number of Short Strings, 33rd International Conference on Algorithmic Learning Theory (*ALT*).

Elham Parhizkar, Mohammad Hossein Nikravan, Robert C. Holte, and Sandra Zilles (2022), Using Change Detection to Adapt to Dynamically Changing Trustees„ *Canadian Conference on Artificial Intelligence*.

Elham Parhizkar, Mohammad Hossein Nikravan, Robert C. Holte, and Sandra Zilles (2020), Combining Direct Trust and Indirect Trust in Multi-Agent Systems, *IJCAI*.

Robert C. Holte and Sandra Zilles (2019), On the Optimal Efficiency of Cost-Algebraic A*, *AAAI*.

Robert C. Holte, Ruben Majadas, Alberto Pozanco, and Daniel Borrajo (2019), Error Analysis and Correction for Weighted A*'s Suboptimality, *Symposium on Combinatorial Search (SoCS)*. See also the extended version on arXiv.

Gaojian Fan, Robert Holte, Martin Mueller (2018), MS-lite: A Lightweight, Complementary Merge-and-Shrink Method, *ICAPS*.

Jingwei Chen, Robert C. Holte, Sandra Zilles, and Nathan R. Sturtevant (2017), Front-to-End Bidirectional Heuristic Search with Near-Optimal Node Expansions, *IJCAI*.

Juergen Eckerle, Jingwei Chen, Nathan R. Sturtevant, Sandra Zilles, and Robert C. Holte (2017), Sufficient Conditions for Node Expansion in Bidirectional Heuristic Search, *ICAPS*.

Gaojian Fan, Martin Mueller and Robert Holte (2017), The Two-edged Nature of Diverse Action Costs, *ICAPS*.

Robert C. Holte, Ariel Felner, Guni Sharon, and Nathan R. Sturtevant (2016), Bidirectional Search that is Guaranteed to Meet in the Middle, *AAAI*. **Winner of the AAAI-16 Outstanding Paper award.**

Zaheen Farraz Ahmad, Robert C. Holte, and Michael Bowling (2016), Action Selection for Hammer Shots in Curling, *IJCAI*.

Andre G. Pereira, Robert C. Holte, Jonathan Schaeffer, Luciana S. Buriol and Marcus Ritt (2016), Improved Heuristic and Tie-Breaking for Optimally Solving Sokoban, *IJCAI*.

Levi H. S. Lelis, Santiago Franco, Marvin Abisrror, Mike Barley, Sandra Zilles, and Robert C. Holte (2016), Heuristic Subset Selection in Classical Planning, *IJCAI*.

Robert C. Holte, Yusra Alkhazraji, and Martin Wehrle (2015), A Generalization of Sleep Sets Based on Operator Sequence Redundancy, *AAAI*, pp. 3291-3297.

Fan Xie, Martin Mueller, and Robert C. Holte (2015), Understanding and Improving Local Exploration for GBFS, *ICAPS*, pp. 244-248 (short paper).

Gaojian Fan and Robert C. Holte (2015), The Spurious Path Problem in Abstraction, *Symposium on Combinatorial Search (SoCS)*, pp. 18-27.

Fan Xie, Martin Mueller, Robert C. Holte, and Tatsuya Imai (2014), Type-based Exploration with Multiple Search Queues for Satisficing Planning, *AAAI*.

Fan Xie, Martin Mueller, and Robert C. Holte (2014), Adding Local Exploration to Greedy Best-First Search in Satisficing Planning, *AAAI*.

Gaojian Fan, Martin Mueller, and Robert C. Holte (2014), Non-Linear Merging Strategies for Merge-and-Shrink Based on Variable Interactions, *Symposium on Combinatorial Search (SoCS)*.

Zhaoxing Bu, Roni Stern, Ariel Felner, and Robert C. Holte (2014), A* with Lookahead Re-evaluated, *Symposium on Combinatorial Search (SoCS)*.

Mehdi Sadeqi, Robert C. Holte, and Sandra Zilles (2014), A Comparison of h2 and MMM for Mutex Pair Detection Applied to Pattern Databases, *Canadian Conference on Artificial Intelligence*.

Mehdi Sadeqi, Robert C. Holte, and Sandra Zilles (2013), Detecting Mutex Pairs in State Spaces by Sampling, *26th Australasian Joint Conference on Artificial Intelligence*.

Levi H. S. Lelis, Sandra Zilles, and Robert C. Holte (2013), Stratified Tree Search: A Novel Suboptimal Heuristic Search Algorithm, *International Conference on Autonomous Agents and Multiagent Systems (AAMAS)*.

Meir Goldenberg, Ariel Felner, Nathan Sturtevant, Robert C. Holte, and Jonathan Schaeffer (2013), Optimal-Generation Variants of EPEA*, *Symposium on Combinatorial Search (SoCS)*.

Robert C. Holte (2013), Move Pruning and Duplicate Detection, *Canadian Conference on Artificial Intelligence*.

Shahin Jabbari, Robert C. Holte, and Sandra Zilles (2012) PAC-Learning with General Class Noise Models, *KI'2012 - the 35th German Conference on Artificial Intelligence*. **Winner of the best paper award**.

Xiaomin Zhang, Sandra Zilles, and Robert C. Holte (2012), Improved Query Suggestion by Query Search, *KI'2012 - the 35th German Conference on Artificial Intelligence*.

Bo Pang and Robert C. Holte (2012), Multimapping Abstractions and Hierarchical Heuristic Search, *Symposium on Combinatorial Search (SoCS)*.

Roni Stern, Ariel Felner, and Robert C. Holte (2012), Search-aware Conditions for Probably Approximately Correct Heuristic Search, *Symposium on Combinatorial Search (SoCS)*.

Levi H. S. Lelis, Shahab Jabbari Arfaee, Sandra Zilles, and Robert C. Holte (2012), Learning Heuristic Functions Faster by Using Predicted Solution Costs, *Symposium on Combinatorial Search (SoCS)*. (short paper)

Ariel Felner, Meir Goldenberg, Guni Sharon, Roni Stern, Tal Beja, Nathan Sturtevant, Jonathan Schaeffer, and Robert C. Holte (2012), Partial-expansion A* with Selective Node Generation, *AAAI*, pp. 471-477.

Levi H. S. Lelis, Sandra Zilles, and Robert C. Holte (2012), Fast and Accurate Predictions of IDA*'s Performance, *AAAI*, pp. 514-520.

Levi Lelis, Roni Stern, Ariel Felner, Sandra Zilles, and Robert C. Holte (2012), Predicting Optimal Solution Cost with Bidirectional Stratified Sampling, *ICAPS*.

John Hawkin, Robert Holte, and Duane Szafron (2012), Using Sliding Windows to Generate Action Abstractions in Extensive-Form Games, *AAAI*, pp. 1924-1930.

Neil Burch and Robert C. Holte (2012), Automatic Move Pruning Revisited, Proc. 5th Symposium on Combinatorial Search (SoCS'12).

Neil Burch and Robert C. Holte (2011), Automatic Move Pruning in General Single-Player Games, Proc. 4th Symposium on Combinatorial Search (SoCS'11).

Levi Lelis, Sandra Zilles, and Robert C. Holte (2011), Improved Prediction of IDA*'s Performance via ϵ-Truncation, Proc. 4th Symposium on Combinatorial Search (SoCS'11).

Bo Pang and Robert C. Holte (2011), State-Set Search, Proc. 4th Symposium on Combinatorial Search (SoCS'11).

Michael J Leighton, Wheeler Ruml, and Robert C. Holte (2011), Faster Optimal and Suboptimal Hierarchical Search, Proc. 4th Symposium on Combinatorial Search (SoCS'11).

Mokhtar Khorshid, Robert C. Holte, and Nathan Sturtevant (2011), A Polynomial-time Algorithm for Non-optimal Multi-Agent Pathfinding, Proc. 4th Symposium on Combinatorial Search (SoCS'11).

Roni Stern, Ariel Felner, and Robert C. Holte (2011), Probably Approximately Correct Heuristic Search, Proc. 4th Symposium on Combinatorial Search (SoCS'11).

Pat J. Riddle, Robert C. Holte, and Michael W. Barley (2011), Does Representation Matter in the Planning Competition?, Symposium on Abstraction, Reformulation and Approximation (SARA'11).

Peter Yap, Jonathan Schaeffer, Neil Burch, and Robert Holte (2011), Any-angle Path-Planning for Computer Games, Seventh AAAI Conference on Artificial Intelligence and Interactive Digital Entertainment (AIIDE-11).

Peter Yap, Neil Burch, Rob Holte, and Jonathan Schaeffer (2011), Block A*: Database-Driven Search with Applications in Any-angle Path-Planning, Twenty-Fifth AAAI Conference on Artificial Intelligence (AAAI-11).

John Hawkin, Robert Holte, and Duane Szafron (2011), Automated Action Abstraction of Imperfect Information Extensive-Form Games, Twenty-Fifth AAAI Conference on Artificial Intelligence (AAAI-11).

Shahab Jabbari Arfaee, Sandra Zilles, and Robert C. Holte (2010), Bootstrap Learning of Heuristic Functions, Symposium on Combinatorial Search (SoCS), pp. 52-60.

Neil Burch, Rob Holte, Martin Mueller, David O'Connell, and Jonathan Schaeffer (2010), Automating Layouts of Sewers in Subdivisions, European Conference on Artificial Intelligence (ECAI), pp. 655-660.

Roni Stern, Ariel Felner, Robert Holte (2010), Using Lookaheads with Optimal Best-First Search, Twenty-Fourth AAAI Conference on Artificial Intelligence (AAAI-10), pp. 185-190.

Wheeler Ruml, Brad Larsen, Ethan Burns, Robert Holte (2010) Searching Without a Heuristic: Efficient Use of Abstraction, Twenty-Fourth AAAI Conference on Artificial Intelligence (AAAI-10), pp. 114-120.

Shen Jiang, Sandra Zilles, and Robert Holte (2009), Query suggestion by query search: a new approach to user support in web search, Proceedings of the 2009 IEEE/WIC/ACM International Conference on Web Intelligence. pp. 679-684.

R. C. Holte, J. Schaeffer, N. Sturtevant, Z. Zhang and A. Felner (2009), A* Search with Inconsistent Heuristics, Proceedings of the Twenty-first International Joint Conference on Artificial Intelligence (IJCAI'09), pp. 634-639.

Shen Jiang, Sandra Zilles, and Robert Holte (2008), Empirical analysis of the rank distribution of relevant documents in web search, Proceedings of the 2008 IEEE/WIC/ACM International Conference on Web Intelligence. pp. 208-213.

Marcel Ball and Robert C. Holte (2008). The Compression Power of Symbolic Pattern Databases, Proceedings of the International Conference on Automated Planning and Scheduling (ICAPS), pp. 2-11.

Uzi Zahavi, Ariel Felner, Neil Burch, and Robert Holte (2008), Predicting the Performance of IDA* with Conditional Probabilities 23rd AAAI Conference on Artificial Intelligence (AAAI), pp. 381-386.

Sandra Zilles, Steffen Lange, Robert Holte, and Martin Zinkevich (2008), Teaching Dimensions based on Cooperative Learning, 21st Annual Conference on Learning Theory (COLT), pp. 135-146.

Mehdi Samadi, Maryam Siabani, Ariel Felner, and Robert Holte (2008), Compressing Pattern Databases with Learning, 18th European Conference on Artificial Intelligence (ECAI), pp. 495-499. Full paper.

Ken Dwyer and Robert Holte (2007), Decision Tree Instability and Active Learning, 18th European Conference on Machine Learning (ECML/PKDD'07). (12 pages)

Yuxi Li, Janelle Harms, Robert Holte, and Baochun Bai (2007), Stable and Robust Multipath Oblivious Routing for Traffic Engineering, 20th International Teletraffic Congress (ITC-20).

Yuxi Li, Janelle Harms, and Robert Holte (2007), Fast Exact MultiConstraint Shortest Path Algorithms, IEEE International Conference on Communications (ICC 2007).

Maria-Luiza Antonie, Osmar R. Zaiane, and Robert C. Holte (2006), Learning to Use a Learned Model: A Two-Stage Approach to Classification IEEE International Conference on Data Mining (ICDM'06). (10 pages)

Uzi Zahavi, Ariel Felner, Robert Holte, and Jonathan Schaeffer (2006), Dual Search in Permutation State Spaces, Twenty-First National Conference on Artificial Intelligence (AAAI-06), pp. 1076-1081.

Robert Niewiadomski, Jose Nelson Amaral, and Robert Holte (2006), Sequential and Parallel Algorithms for Frontier A* with Delayed Duplicate Detection Twenty-First National Conference on Artificial Intelligence (AAAI-06), pp. 1039-1044.

Robert Niewiadomski, Jose Nelson Amaral, and Robert Holte (2006), A Parallel External-Memory Frontier Breadth-First Traversal Algorithm for Clusters of Workstations, 35th International Conference on Parallel Processing (ICPP), pp. 531-538.

Yuxi Li, Janelle Harms, and Robert Holte (2006), Optimal Traffic-Oblivious Energy-Aware Routing for Multihop Wireless Networks, IEEE INFOCOM 2006. (12 pages)

Chris Drummond and Robert Holte (2005), Severe Class Imbalance: Why Better Algorithms Aren't the Answer, Proceedings of the 16th European Conference on Machine Learning (ECML/PKDD'05), pp. 539-546.

Yuxi Li, Janelle Harms, Robert Holte (2005), A simple method for balancing network utilization and quality of routing, Proceedings of the International Conference on Computer Communications and Networks (ICCCN), pp. 71-76.

Yuxi Li, Janelle Harms, Robert Holte (2005), Impact of lossy links on performance of multihop wireless networks, Proceedings of the International Conference on Computer Communications and Networks (ICCCN), pp. 303-308.

Bret Hoehn, Finnegan Southey, Robert C. Holte and Valeriy Bulitko (2005), Effective Short-Term Opponent Exploitation in Simplified Poker, Proceedings of the Twentieth National Conference on Artificial Intelligence (AAAI'05), pp. 783-788.

Gang Xiao, Finnegan Southey, Robert C. Holte and Dana Wilkinson (2005), Software Testing by Active Learning for Commercial Games, Proceedings of the Twentieth National Conference on Artificial Intelligence (AAAI'05), pp. 898-903.

Ariel Felner, Uzi Zahavi, Jonathan Schaeffer, and Robert Holte (2005), Dual Lookups in Pattern Databases, Proceedings of the Nineteenth International Joint Conference on Artificial Intelligence (IJCAI'05), pp. 103-108.

Finnegan Southey, Gang Xiao, Robert C. Holte, Mark Trommelen, and John Buchanan (2005), Semi-Automated Gameplay Analysis by Machine Learning, Artificial Intelligence and Interactive Entertainment Conference (AIIDE), pp. 123-128.

Yngvi Bjornsson, Markus Enzenberger, Robert Holte and Jonathan Schaeffer (2005), Fringe Search: Beating A* at Pathfinding on Game Maps, IEEE Symposium on Computational Intelligence and Games, pp. 125-132.

Yuxi Li, Janelle Harms, Robert Holte (2005), IDA*_MCSP: A Fast Exact MCSP Algorithm, IEEE International Conference on Communications (ICC), pp. 93-99.

Darse Billings, Aaron Davidson, Terence Schauenberg, Neil Burch, Michael Bowling, Robert Holte, Jonathan Schaeffer, and Duane Szafron (2004), Game Tree Search with Adaptation in Stochastic Imperfect Information Games, Computers and Games (CG'04), Springer.

Robert C. Holte, Jack Newton, Ariel Felner, Ram Meshulam, and David Furcy (2004), Multiple Pattern Databases, Proceedings of the International Conference on Automated Planning and Scheduling (ICAPS'04), pp. 122-131. **(runner up for Best Paper award)**

Ariel Felner, Ram Meshulam, Robert C. Holte, Richard E. Korf (2004), Compressing Pattern Databases, Proceedings of the Nineteenth National Conference on Artificial Intelligence (AAAI'04) pp. 638-643.

Robert Niewiadomski, Jose Nelson Amaral, and Robert C. Holte (2003), Crafting Data Structures: A Study of Reference Locality in Refinement-Based Path Finding, in the proceedings of 10th International Conference on High Performance Computing (HiPC), T.M. Pinkston and V.K. Prasanna (eds.), Lecture Notes in Computer Science 2913, Springer, pp. 438-448.

Darse Billings, Neil Burch, Aaron Davidson, Robert C. Holte, Jonathan Schaeffer, Terence Schauenberg, and Duane Szafron (2003), Approximating Game-Theoretic Optimal Strategies for Full-scale Poker, Proceedings of the Eighteenth International Joint Conference on Artificial Intelligence (IJCAI'03), pp. 661-668. **Best Paper Award.**

Yngvi Bjornsson, Markus Enzenberger, Robert C. Holte, Jonathan Schaeffer, and Peter Yap (2003), Comparison of Different Abstractions for Pathfinding on Maps, Proceedings of the Eighteenth International Joint Conference on Artificial Intelligence (IJCAI'03), pp. 1511-1512.

D. Schuurmans, F. Southey, and R. C. Holte (2001), The Exponentiated Subgradient Algorithm for Heuristic Boolean Programming, Proceedings of the Seventeenth International Joint Conference on Artificial Intelligence (IJCAI'01), pp. 334-341.

Robert C. Holte (2001), Combinatorial Auctions, Knapsack Problems, and Hill-climbing Search, *Advances in Artificial Intelligence* (proc. AI'2001, the 14th Biennial Conference of the Canadian Society for Computational Studies of Intelligence), E. Stroulia and S. Matwin (eds.), Lecture Notes in Artificial Intelligence 2056, Springer, pp. 57-66.

C. Drummond and R.C. Holte (2000), Explicitly Representing Cost: An Alternative to ROC Representation, Proceedings of the Sixth ACM SIGKDD International Conference on Knowledge Discovery and Data Mining (KDD'2000), pp. 198-207.

C. Drummond and R.C. Holte (2000), Exploiting the Cost (In)sensitivity of Decision Tree Splitting Criteria, Proceedings of the Seventeenth International Conference on Machine Learning (ICML'2000), pp. 239-246.

R.C. Holte and I. Hernadvolgyi (1999), A Space-Time Tradeoff for Memory-based Heuristics, proceedings of the Sixteenth National Conference on Artificial Intelligence (AAAI'99), pp. 704-709.

B. deBruijn, R.C. Holte, and J. Martin (1999), An Automated Method for Studying Interactive Systems, ASIS '99: Knowledge: Creation, Organization and Use. Proceedings of the 62nd Annual Meeting of the American Society for Information Science, pp. 751-762.

R. Zimmer and R.C. Holte (1999), Introducing a Continuum of Abstraction-Led Heuristic Search Techniques, SAICSIT'99, proceedings of the 1999 South African Institute of Computer Scientists and Information Technologists Annual Research Conference. (5 pages)

J. Martin and R.C. Holte (1998), Searching for content-based addresses on the World-Wide Web, proceedings of the Third ACM Conference on Digital Libraries (DL'98), pp. 299-300.

M. Kubat, R.C. Holte, and S. Matwin (1997), Learning When Negative Examples Abound, Machine Learning: ECML-97, Lecture Notes in Artificial Intelligence 1224, M. van Someren and G. Widmer (eds.), Springer, pp. 146-153.

R.C. Holte, M.B. Perez, R.M. Zimmer, A.J. MacDonald (1996), Hierarchical A*: Searching Abstraction Hierarchies Efficiently, AAAI'96, pp. 530-535.

R.C. Holte and J. Ng Yuen Yan (1996), Inferring What a User is Not Interested In, *Advances in Artificial Intelligence* (proc. AI'96, the 11th Biennial Conference of the Canadian Society for Computational Studies of Intelligence), G. McCalla (ed.), Lecture Notes in Artificial Intelligence 1081, Springer, pp. 159-171.

R. Zimmer, A. MacDonald and R. Holte (1996), Categorical Decompositions, Graph Searching and Problem Solving, Fourth International Symposium on Artificial Intelligence and Mathematics, pp. 170-173.

P. Auer, R.C. Holte, W. Maass (1995), Theory and Applications of Agnostic PAC-Learning with Small Decision Trees, Proceedings of the Twelfth International Conference on Machine Learning (ML'95), pp. 21-29.

R.C. Holte, C. Drummond, M.B. Perez, R.M. Zimmer, A.J. MacDonald (1994), Searching With Abstractions: A Unifying Framework and New High-Performance Algorithm, Proc. of the 10th Canadian Conference on Artificial Intelligence (AI'94), Morgan-Kaufmann, pp. 263-270.

R.C. Holte, R. Zimmer, and A.J. Macdonald (1994), A Study of the Representation-Dependency of Abstraction Techniques, Proc. of the Seventh Irish Conference on Artificial Intelligence and Cognitive Science, M. Keane, P. Cunningham, M. Brady, and R. Byrne (eds.), Dublin University Press, pp. 143-150.

H. Inazumi, K-i. Tokiwa, and Robert C. Holte (1994), A Step Towards a New Test for Learnability of Machine Learning, Proc. of the IEEE International Conference on Systems, Man, and Cybernetics. (6 pages).

C. Drummond, R.C. Holte and D. Ionescu (1993), Accelerating Browsing by Automatically Inferring a User's Search Goal, Proceedings of the Conference on Knowledge-Based Software Engineering, pp. 160-167.

R. Zimmer, C. Heide-Korbel, A. MacDonald, R. Holte (1993), Effects of Granularity of Representation on Learning: An Application to Genetic Algorithms, Florida AI Research Symposium.

A. MacDonald, R.C. Holte, R. Zimmer (1993), Optimising The Induction of Decision Trees, Florida AI Research Symposium, pp. 203-207.

R. Zimmer, A. MacDonald, R. Holte (1993), Automated Representation Change for Problem Solving and Hardware CAD, Applications of Artificial Intelligence 1993: Knowledge-Based Systems in Aerospace and Industry, Usama M. Fayad and Ramasmy Uthurusamy (editors), Proc. SPIE volume 1963, pp. 126-137.

C. Drummond, D. Ionescu, and R. Holte (1992), Automatic Goal Extraction from User Actions when Browsing Software Libraries, Canadian Conference on Electrical and Computer Engineering, pp. WA6.31.1-WA6.31.4.

C. Drummond, R.C. Holte and D. Ionescu (1993), Accelerating Browsing by Automatically Inferring a User's Search Goal, Proceedings of the Conference on Knowledge-Based Software Engineering, pp. 160-167.

R. Zimmer, C. Heide-Korbel, A. MacDonald, R. Holte (1993), Effects of Granularity of Representation on Learning: An Application to Genetic Algorithms, Florida AI Research Symposium.

A. MacDonald, R.C. Holte, R. Zimmer (1993), Optimising The Induction of Decision Trees, Florida AI Research Symposium, pp. 203-207.

R. Zimmer, A. MacDonald, R. Holte (1993), Automated Representation Change for Problem Solving and Hardware CAD, Applications of Artificial Intelligence 1993: Knowledge-Based Systems in Aerospace and Industry, Usama M. Fayad and Ramasmy Uthurusamy (editors), Proc. SPIE volume 1963, pp. 126-137.

C. Drummond, D. Ionescu, and R. Holte (1992), Automatic Goal Extraction from User Actions when Browsing Software Libraries, Canadian Conference on Electrical and Computer Engineering, pp. WA6.31.1-WA6.31.4.

R. Holte, T. Mkadmi, R. Zimmer and A. MacDonald (1992), Translating Theory into Practice: The Agony and the Ecstasy, 6th International Conference on Systems Research, Informatics, and Cybernetics. (6 pages)

P. Clark and R.C. Holte (1992), Lazy Partial Evaluation: An Integration of Explanation-Based Generalisation and Partial Evaluation, in D. Sleeman and P. Edwards (Eds.), Machine Learning: Proceedings of the Ninth International Conference (ML'92), Morgan-Kaufmann, pp.82-91.

R. Zimmer, A. MacDonald, and R. Holte (1991), Reasoning about Representations: Towards the Automation of Representation Change, Proceedings of the Florida Artificial Intelligence Research Symposium, pp. 201-205.

Robert C. Holte, Louis Rosier, Igor Tulchinsky, and Donald Varvel (1989), Pinwheel Scheduling with Two Distinct Numbers, Proceedings of the 14th International Symposium on the Mathematical Foundations of Computer Science, Rytro, Poland. Springer-Verlag Lecture Notes in Computer Science. (10 pages)

R. Holte (1990), Efficient Candidate Elimination Through Test Incorporation, Change of Representation and Inductive Bias, Paul Benjamin (editor), Kluwer, pp. 223-230.

Robert C. Holte, Liane Acker, and Bruce W. Porter (1989), Concept Learning and the Problem of Small Disjuncts, Proceedings of the International Joint Conference on Artificial Intelligence (IJCAI), Morgan-Kaufmann, pp. 813-818.

Robert C. Holte (1989), Alternative Information Structures in Incremental Learning Systems, Machine and Human Learning, edited by Yves Kodratoff and Alan Hutchison, Kogan Page, pp. 121-142.

Robert C. Holte and Robert M. Zimmer (1989), A Mathematical Framework for Studying Representation, Proceedings of the 6th International Workshop on Machine Learning, A. Segre (editor), Morgan-Kaufmann, pp. 454-456.

M. Fourman, R. Holte, W. Palmer, and R. Zimmer (1987), Top-Down Design as Bottom-Up Proof, Proceedings of the 1987 Electronic Design Automation conference, A.P. Ambler (ed.), pp. 617-627.

Robert C. Holte and Michael R. Wharton (1986), Generative Structure in Enumerative Learning Systems, Sixth Biennial Conference of the Canadian Society for the Computational Study of Intelligence, pp. 11-16.

P.A. Buhr and R.C. Holte (1978), Assessment Methods for a Microcomputer Communication Aid, 3rd Annual Canadian Congress of the Council for Exceptional Children, Winnipeg.

R.C. Holte, P.A. Buhr, A.O. Quanbury, and F.J. Burkowski (1978), A Microcomputer Communication Aid, 7th Canadian Medical and Biological Engineering Conference, Vancouver.

Books Edited

Sven Koenig and Robert C. Holte (2002), Abstraction, Reformulation, and Approximation, proceedings of the 5th International Symposium, SARA 2002. Lecture Notes in Artificial Intelligence #2371. Springer.

Invited Presentations and Papers

Robert C. Holte and Chris Drummond (2018), Cost-sensitive Classifier Evaluation Using Cost Curves, invited presentation at the Palo Alto Research Center (PARC) Forum.

Robert C. Holte (2018), Holte's History of A*, invited talk at the Symposium on Combinatorial Search (SoCS).

Robert C. Holte (2017), Heuristic Search: Something New and Something Old, invited talk at the Canadian Conference on Artificial Intelligence.

Robert C. Holte (2016), Heuristic Search: Something New and Something Old, invited talk at the International Joint Conference on Artificial Intelligence (IJCAI).

Robert C. Holte (2013), Learning and Search, invited talk at the workshop on Learning and Planning associated with ICAPS 2013.

Robert C. Holte and Chris Drummond (2011), Cost-sensitive Classifier Evaluation Using Cost Curves, invited presentation at the Twenty-fourth Florida Artificial Intelligence Research Society conference (FLAIRS-24), West Palm Springs, Florida (May 17-20, 2011). Invited Talk.

Robert Holte, Jonathan Schaeffer, and Ariel Felner (2010), Mechanical Generation of Admissible Heuristics, Chapter 3 in *Heuristics, Probability and Causality. a Tribute to Judea Pearl*, edited by Rina Dechter, Hector Geffner, Joseph Y Halpern.

Robert C. Holte (2009), Abstraction and Search, invited talk at the joint session of the Symposium on Abstraction, Reformulation, and Approximation (SARA) and the Symposium on Combinatorial Search (SoCS).

Robert C. Holte and Chris Drummond (2008), Cost-sensitive Classifier Evaluation Using Cost Curves, invited plenary presentation at the Pacific-Asia Conference on Knowledge Discovery and Data Mining (PAKDD), Osaka, Japan (May 21-23, 2008). Invited Talk.

Robert C. Holte (2006), Elaboration on Two Points Raised in 'Classifier Technology and the Illusion of Progress', Statistical Science Vol. 21, No. 1, pp. 24-26. an invited response to a feature article by David J. Hand.

Robert C. Holte (2006), Cost-Sensitive Classifier Evaluation, invited presentation at the workshop on Evaluation Methods for Machine Learning at the American National Conference on Artificial Intelligence (AAAI'06).

Robert C. Holte (2005), Two Fielded Machine Learning Applications Requiring Comprehensibility, invited presentation at the AAAI workshop on Human Comprehensible Machine Learning.

Robert C. Holte and Chris Drummond (2005), What ROC Curves Can't Do (and cost curves can), invited presentation at the Conference of Applied and Industrial Mathematics (June 2005, Winnipeg).

Robert C. Holte and Chris Drummond (2005), Cost-Sensitive Classifier Evaluation, invited presentation at the KDD'05 workshop on Utility-Based Data Mining.

Robert C. Holte (2005), Cost Curves, invited presentation at the ICML'05 workshop on ROC Analysis in Machine Learning.

Finnegan Southey, Gang Xiao, Robert C. Holte, Mark Trommelen, and John Buchanan (2005), Machine Learning for Semi-Automated Gameplay Analysis, Game Developers Conference.

Robert C. Holte, Bret Hoehn, and Finnegan Southey (2004), Opponent Modelling in Poker, invited presentation at Electronic Arts (December 2004, Vancouver).

Nada Lavrac, Hiroshi Motoda, Tom Fawcett, Robert Holte, Pat Langley, and Pieter Adriaans (2004), Introduction: Lessons Learned from Data Mining Applications and Collaborative Problem Solving, *Machine Learning* special issue on Data Mining Lessons Learned, Volume 57:1,2 (Oct-Nov), pp. 13-34.

Robert C. Holte (2002), Lessons Learned from Machine Learning Applications, workshop on Data Mining Lesson Learned at the International Conference on Machine Learning.

Robert C. Holte (1997), Lessons Learned Applying Machine Learning to Oil Spill Detection, Second Dagstuhl Seminar on The Theory and Praxis of Machine Learning.

Robert C. Holte (1994), Occam's Razor in Theory and Practice, Dagstuhl Seminar on The Theory and Praxis of Machine Learning.

Robert C. Holte (1994), Empirical Analyses of Learning Systems, advanced tutorial on Learning DNF, 11th International Conference on Machine Learning.

Robert C. Holte (1990), Commentary on 'PROTOS: An Exemplar-based Learning Apprentice' by Bareiss, Porter and Weir, in Machine Learning: An Artificial Intelligence Approach, volume III, edited by Y. Kodratoff and R.S. Michalski, Morgan-Kaufmann, pp. 128-139.

Robert C. Holte (1989), The Art of Machine Learning, Fourth European Working Session on Learning, Montpellier (France), K. Morik (program chairperson).

Robert C. Holte and A.J. MacDonald (1987), Learning Tasks Studied in Artificial Intelligence, pp.121-141 in Interactions in Artificial Intelligence and Statistical Methods, B. Phelps (editor), Gower Technical Press.

Robert C. Holte, Peter Elleby, and Hugh Fargher (1986), Scheduling a Wafer Fabrication Plant, IEE Colloquium on Knowledge-Based Planning and Scheduling (Digest # 1986/50). (4 pages)

Unrefereed Contributions

Robert C. Holte (2013), Korf's Conjecture and the Future of Abstraction-based Heuristics, Symposium on Abstraction, Reformulation and Approximation (SARA).

Mehdi Sadeqi, Robert C. Holte, and Sandra Zilles (2013), Using Coarse State Space Abstractions to Detect Mutex Pairs, Symposium on Abstraction, Reformulation and Approximation (SARA).

S. Zilles and R. C. Holte (2009). Downward Path Preserving State Space Abstractions (Extended Abstract), Symposium on Abstraction, Reformulation, and Approximation (SARA'09).

Robert C. Holte (2009), Common Misconceptions Concerning Heuristic Search, Symposium on Combinatorial Search (SoCS'09).

Kenneth Anderson, Robert Holte, and Jonathan Schaeffer (2007), Partial Pattern Databases, Symposium on Abstraction, Reformulation, and Approximation. LNAI 4612 (SARA 2007), I. Miguel and W. Ruml (eds.), pp. 20-34.

Fan Yang, Joseph Culberson, and Robert Holte (2007), Using Infeasibility to Improve Abstraction-Based Heuristics (extended abstract), Symposium on Abstraction, Reformulation, and Approximation. LNAI 4612 (SARA 2007), I. Miguel and W. Ruml (eds.), pp. 413-414.

Robert C. Holte (2005), Where Do Heuristics Come From ? (Using Abstraction to Speed Up Search), Tutorial presented at AAAI 2005.

Robert C. Holte, Jeffery Grajkowski, Brian Tanner (2005), Hierarchical Heuristic Search Revisited, Symposium on Abstraction, Reformulation, and Approximation. LNAI 3607 (SARA 2005), J.-D. Zucker and L. Saitta (eds.), pp. 121-133.

Chris Drummond and Robert C. Holte (2005), Learning to Live with False Alarms, KDD'05 workshop on Data Mining Methods for Anomaly Detection.

Finnegan Southey and Robert C. Holte (2004), Semi-automated Gameplay Analysis, AAAI workshop on Challenges in Game AI, pp. 97-102.

Chris Drummond and Robert Holte (2004), What ROC Curves Can't Do (and Cost Curves Can), ECAI 2004 workshop on ROC Analysis in AI (7 pages).

I.T. Hernadvolgyi and R.C. Holte (2004), Steps Towards the Automatic Creation of Search Heuristics, technical report TR04-02, Computing Science Dept., University of Alberta.

C. Drummond and R.C. Holte (2003), C4.5, Class Imbalance, and Cost Sensitivity: Why under-sampling beats over-sampling, ICML Workshop on Learning from Imbalanced Datasets II.

R.C. Holte and Istvan Hernadvolgyi (2000), Experiments with Automatically Created Memory-based Heuristics, proceedings of the Symposium on Abstraction, Reformulation and Approximation (SARA-2000), Lecture Notes in Artificial Intelligence, volume 1864, pp. 281-290, Springer-Verlag.

I. Hernadvolgyi and R.C. Holte (1999), PSVN: A Vector Representation for Production Systems, Computer Science technical report TR-99-04, SITE, U. of Ottawa.

R. Zimmer, R.C. Holte, and A.J. MacDonald (1997), The Impact of Representation on the Efficacy of Artificial Intelligence: The Case of Genetic Algorithms, *AI and Society*, 11: 76-87.

R.C. Holte, M.B. Perez, R.M. Zimmer, A.J. MacDonald (1996), The Tradeoff Between Speed and Optimality in Hierarchical Search, AAAI Fall Symposium on Flexible Computation in Intelligent Systems: Results, Issues, and Opportunities.

R.C. Holte and J. Ng Yuen Yan (1996), Inferring What a User is Not Interested In, AAAI Spring Symposium on Machine Learning in Information Access.

R.C. Holte, M.B. Perez, R. Zimmer, and A.J. MacDonald (1995), Hierarchical A*, proceedings of the Symposium on Abstraction, Reformulation and Approximation, pp. 73-77.

R.C. Holte and Chris Drummond (1994), A Learning Apprentice for Browsing, AAAI Spring Symposium on 'Software Agents'. (5 pages).

R. Holte and B. Porter (1993), When and Why are Array Representations Advantageous ?, commentary on J. Glasgow, The Imagery Debate Revisited: A Computational Perspective. Computational Intelligence, vol. 9, no. 4, pp. 387-390.

R.C. Holte and Chris Drummond (1993), Speeding Up Human Problem-Solving by Machine Learning, ML'93 workshop on Knowledge Compilation and Speedup Learning, June, 1993, pp. 86-89.

R.C. Holte, R. Zimmer, and A.J. Macdonald (1993), A Study of the Representation-Dependency of Abstraction Techniques, ML'93 workshop on Knowledge Compilation and Speedup Learning, June, 1993. (3 pages)

R. Holte, R. Zimmer, and A. MacDonald (1992), When does Changing Representation Improve Problem-Solving Performance ?, in M. Lowry (ed.), Proceedings of the Workshop on Change of Representation and Problem Reformulation, NASA Ames technical report FIA-92-06. May 1992. (6 pages)

Robert C. Holte and Xin Xu (1991), Dynamic Generate-and-Test Search, Proceedings of the AAAI Workshop on Automating Software Design, USC/ISI tech report number RS-91-287, Lewis Johnson (editor). (6 pages)

Robert C. Holte (1985), A Conceptual Framework for Concept Identification, 3rd International Machine Learning Workshop, Skytop, Pennsylvania. published (1986) as Machine Learning: A Guide to Current Research, Kluwer, pp. 99-102.

Robert C. Holte (1985), Artificial Intelligence Approaches to Concept Learning, Advanced Digital Information Systems, Igor Aleksander (editor), Prentice-Hall International, pp.309-498.

Supervision

visiting researchers:
K. Saito (09/1991-12/1992) ; H. Inazumi (01-03/1993), H. Brucher (07-09/1999); R. Alaiz-Rodriguez (05-07/2006); M. Barley (08-12/2009); P. Riddle (08-12/2009).

postdoctoral fellows:
D. Duchier (09/91-09/94); D. Aha (10/92-05/93); P. Clark (09/91-12/92); G. Fouque (09/91-12/92); M. Kubat (11/95-07/97); B. deBruijn (01/98-11/99); C. Drummond (10/99-06/2001); F. Southey (09/2003-03/2006); S. Zilles (06/2007-06/2009)

Ph.D. students (supervisor):
C. Drummond (01/1993-10/1999) ; I. Hernadvolgyi (09/1996-05/2004).

Ph.D. students (co-supervisor):
P. Yap (11/2001-06/2004), Y. Li (03/2003-09/2006), R. Niewiadomski (09/2003-04/2008), B. Fraser (09/2005-07/2007), W. Bonney (09/2007-04/2008), L. Antonie (04/2005-10/2008), F. Yang (07/2005-12/2010), J. Hawkin (09/2006-08/2014), K. Dwyer (01/2007-09/2013), L. Lelis (10/2009-07/2013), F. Xie (09/2013-01/2016), G. Fan (09/2012-08/2019).

Ph.D. students (advisory committee):
M. Ouerd, J. Morin, R. Rios, J. Sayyad, S. Kiritchenko, T. Wang, D. Billings, C. Rayner, R. Gibson, H. Nakhost, B. Tanner, N. Bard, A. Pereira Grahl (Institute of Informatics, Federal University of Rio Grande do Sul, Brazil), Trevor Davis, Jingwei Chen.

Master's students (co-supervisor's name is in square brackets):
X. Xu (11/89-07/91); T. Mkadmi (09/90-04/93); C. Drummond (04/91-12/92); T. Rovel (09/91-03/93); M.B. Perez (09/92-06/95); J. Ng Yuen Yan (09/92-11/96); M. Israel (09/92-04/97); W. Elazmeh (01/97-04/2001); R. Niewiadomski (05/2002-08/2003) [J.N. Amaral]; J. Newton (07/2002-10/2005); B. Hoehn (04/2003-12/2005); G. Xiao (04/2003-02/2007); Q. Zhang (08/2003-12/2004) [R. Goebel]; K. Dwyer (04/2005-01/2007); M. Ball (04/2006-01/2009); K. Anderson (04/2006-07/2007); S. Jiang (04/2007-01/2009) [S. Zilles]; Z. Zhang (05/2007-09/2008) [J. Schaeffer]; D. O'Connell (08/2004-09/2007) [J. Schaeffer]; M. Samadi (09/2007-11/2008) [J. Schaeffer]; X. Zhang (04/2009-12/2010) [S. Zilles]; Shahin Jabbari Arfaee (04/2009-11/2010) [S. Zilles]; Shahab Jabbari Arfaee (04/2009-09/2010) [S. Zilles]; M. Khorshid (04/2010-09/2011) [N. Sturtevant]; B. Pang (04/2010-09/2012); C. Pham (09/2010-2017) [J. Culberson]; Z. Bu (04/2013-09/2014); Z. Ahmad (04/2014-01/2017)

Ph.D. thesis examiner:
Ken Murray (12/1994, University of Texas at Austin), Tim Lethbridge (11/1994, University of Ottawa), Craig Nevill-Manning (07/1996, University of Waikato, New Zealand), Riverson Rios (01/1998, University of Ottawa), Eibe Frank (04/2000, University of Waikato, New Zealand), Sylvain Letourneau (08/2003,

University of Ottawa), David Furcy (09/2004, Georgia Institute of Technology, USA), Adi Botea (10/2005, University of Alberta), Yuhong Guo (09/2007, University of Alberta), Tim Furtak (09/2013, University of Alberta), Richard Gibson (12/2013, University of Alberta), Chris Wilt (04/2014, University of New Hampshire). Fazlul Hasan Siddiqui (10/2015, Australian National University).

M.Sc. thesis examiner:
Josh Davidson (01/2014, University of Alberta), Mostafa Vafadoost (08/2013, University of Alberta), Babak Bostan (09/2009, University of Alberta), Nolan Bard (02/2008, University of Alberta), John Arnold (09/2006, University of Alberta), Siddhartha Chinthapally (12/2005, University of Alberta), Paul Berube (09/2005, University of Alberta), Jack Newton (12/2004, University of Alberta), Aaron Davidson (06/2002, University of Alberta), Martin Fontaine (08/2000, University of Ottawa), Michael Potter (11/98, University of Ottawa), Hui Xia (08/96, University of Ottawa), Guiming Chen (05/96, University of Ottawa), Thierry Rouget (11/95, University of Ottawa), Mark Weedmark (12/94, University of Ottawa), D. Nguyen (04/93, Carleton University), A. Bieszczad (12/92, Carleton University), S. Lapointe (06/92, University of Ottawa), V. Acciaro (09/91, Carleton University), Maude Salembier (10/90, University of Ottawa), Jean Genest (06/90, University of Ottawa).

Teaching

Undergraduate Courses

CMPUT 114. Introduction to Computing Science.
CMPUT 115. Programming with Data Structures.
CSI 1100. Introduction to Computer Science I.
CSI 1101. Introduction to Computer Science II.
CSI 1190. Computer Programming for Engineers.
CSI 2114. Data Structures.
CSI 2301. Computing Concepts and Data Structures.
CSI 4106. Introduction to Artificial Intelligence.
CMPUT 495. Honor's Seminar.

Graduate Courses

CSI 5180. Topics in Artificial Intelligence.
CSI 5387. Concept Learning Systems.
CSI 5388. Topics in Machine Learning.
CMPUT 651. Single-Agent Search.
CMPUT 652. Single-Agent Search.

Academic Service Activities

Editing scholarly publications.

executive editor, Machine Learning (1998-2003)

editor, Machine Learning (1993-1998, 2004-05)

editorial board, Journal of Artificial Intelligence Research (1997-1999)

Academic Consultation and Management

2002-2007 - co-director of the Alberta Ingenuity Centre for Machine Learning

2005-2011 - IBM Center for Advanced Studies (Alberta) Executive Advisory Council

2006-2010 - member of the governing board of the International Machine Learning Society

2001 - external assessor for candidates for the Chair in Machine Learning at the University of Edinburgh

2000 - reviewer of grant proposals for the NASA Research Program on Intelligent Systems

1998-2014 - reviewer of NSERC individual research grant proposals

2002-2005 - review committee for Alberta Ingenuity Studentships

2003 - awards committee for the joint ECML/PKDD conference

1999-2001 - advisory committee, International Conference on Machine Learning

1994-2013 - steering committee, Symposium on Abstraction, Reformulation, and Approximation (SARA)

1995 - Academic consultant for the Ontario Council on Graduate Studies

Conference Committee work.

I was co-chairman of these conferences/workshops:

AAAI workshop on Planning, Search, and Optimization (2015)
AAAI program co-chair (2007)
AAAI workshop on Heuristic Search, Memory-based Heuristics and Their Applications (2006)
Symposium on Abstraction, Reformulation, and Approximation (2002)
AAAI workshop on Learning from Imbalanced Datasets (2000)
IJCAI workshop on Data Engineering for Inductive Learning (1995)
Symposium on Abstraction, Reformulation, and Approximation (1995)
workshop on Theory Reformulation and Abstraction (1994)
Canadian workshop on Machine Learning (1994)

workshop on Change of Representation and Problem Reformulation (1992)
Canadian workshop on Machine Learning (1992)
workshop on Change of Representation and Problem Reformulation (1990)
workshop on Change of Representation and Inductive Bias (1988)

I was local arrangements chairman for these conferences:

ICML (International Conference on Machine Learning): 2004
COLT (conference on Computational Learning Theory): 2004
UAI (conference on Uncertainty in Artificial Intelligence): 2004

I was a member of the program committee for these conferences:

AAAI (ordinary PC member): 1993, 1997
AAAI (senior PC member): 2000, 2006, 2012, 2013, 2015, 2016, 2019
AAAI (co-chair of the track on related conferences): 2014
IJCAI (senior PC member): 2009, 2016
ICAPS: 2015, 2016, 2017, 2018
K-CAP (International Conference on Knowledge Capture): 2003, 2005
ICML workshop on Learning from Imbalanced Datasets: 2003
CG (International Conference on Computers and Games: 2002
SoCS (Symposium on Combinatorial Search): 2010-15, 2018
SARA (Symposium on Abstraction, Reformulation, and Approximation): 2000, 2009-2013
ICML (International Conference on Machine Learning): 1990, 1992, 1993, 2001
COLT (conference on Computational Learning Theory): 1996, 1997
Canadian AI conference: 1992, 1996, 2001, 2002, 2006, 2013
CLNL'93 (1993 workshop on Computational Learning and Natural Learning)
EWSL'87 (1987 European Conference on Machine Learning)

Committee work within the university.

department Academic Recruiting Committee. (2014-17)
Vice Dean, Faculty of Science. (2007-13)
Faculty of Science Martha Cook Piper Research Prize Committee. (2006)
department Associate Chair (Research). (2005-06)
Faculty of Science Visiting Committee. (2004,2005)
Faculty of Science Kaplan Nomination Committee. (2004)
Faculty of Science Research Award Committee. (2004)
course co-ordinator (CMPUT 115). (2002,2003)
department undergraduate curriculum committee. (2002-03)
University Academic Planning Committee. (2002-05)
department External Affairs Committee. (2001-2)
Faculty Council (1999-2000)
Computer Science program committee. (1997, 1998)
department Academic Standing Committee. (1996-97)
co-ordinator, department Co-op program. (1994-97)

department Space Committee. (1993)
department/school Teaching Personnel Committee. (1992-96, 1999)
department Research and Development Day Committee. (1991-93)
member, University Commission on Graduate Studies in the Sciences. (1990-92)
Director, Ottawa-Carleton Institute for Computer Science. (1990-92)
department Graduate Affairs Committee. (1989-94, 2001)
Board of Directors, Ottawa-Carleton Institute for Computer Science. (1989-93)
department Co-op Committee. (1989-93)