

Curriculum Vitae of David Billington

Personal Details

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Qualifications

B.Sc. Hons.I, in Mathematics, Monash University, Victoria, Australia, 1969-1972.
 I majored in pure mathematics with a minor in applied mathematics.
 M.Sc., in Mathematical Logic, Monash University, Victoria, Australia, 1973-1975.
 Ph.D., in Graph Theory, University of Melbourne, Victoria, Australia, 1976-1981.
 Dip. Comp. Sci., University of Queensland, Queensland, Australia, 1982-1983.

Research Products

Theses

- (T1) David Billington (1972) *Sentences Preserved Under Model-theoretic Constructions*,
 B.Sc. Hons. Thesis, Department of Mathematics, Monash University, December 1972, 74pp.
 (T2) David Billington (1975) *Two Model Constructions and Unary Algebras*,
 M.Sc. Thesis, Department of Mathematics, Monash University, December 1975, 87pp.
 (T3) David Billington (1981) *Degree Multisets of Hypergraphs*,
 Ph.D. Thesis, Department of Mathematics, University of Melbourne, December 1981, 180pp.

Refereed Journal Publications

- (J1) David Billington (1980) Degree Sequences Uniquely Realisable within sets of Hypergraphs,
Ars Combinatoria, **10** (1980), 65-81.
 (J2) David Billington (1982) A Simple Proof that All 1-Designs Exist,
Discrete Mathematics, **42** (1982), 321-322.
 (J3) David Billington (1983) The Connectedness of the Graph of Exact m-Graphic Realisations of a
 Degree Multiset, *Ars Combinatoria*, **16** (1983), 183-221.
 (J4) David Billington (1986) Lattices and Degree Sequences of Uniform Hypergraphs,
Ars Combinatoria, **21A** (1986), 9-19.
 (J5) David Billington (1987) The (s,p)-Exchange Property,
Ars Combinatoria, **23** (1987), 185-200.
 (J6) David Billington (1988) Conditions for Degree Sequences to be Realisable by 3-Uniform
 Hypergraphs, *The Journal of Combinatorial Mathematics and Combinatorial Computing*, **3**,
 (1988), 71-91.
 (J7) David Billington, Koen De Coster, and Donald Nute (1990)
 A Modular Translation from Defeasible Nets to Defeasible Logics,
Journal of Experimental and Theoretical Artificial Intelligence, **2** (1990), 151-177.
 (J8) David Billington (1993) Using the Context-Free Pumping Lemma,
Communications of the ACM, **36** (4) (1993), 21 & 81.
 (J9) David Billington (1993) Defeasible Logic is Stable,
Journal of Logic and Computation, volume **3** number 4 August 1993, 379-400.
 (J10) David Billington and R. Geoff. Dromey (1996) The Co-invariant Generator: an Aid in
 Deriving Loop Bodies, *Formal Aspects of Computing*, **8**(1) 1996, 108-126. (An electronic
 postscript version is at <http://www.cs.man.ac.uk/fmethods/facj/e-papers/index.html>)

- (J11) David Billington (1999) Proving Quantified Literals in Defeasible Logic, *Information Sciences Journal*, **116**, 1999, 55-81.
- (J12) G. Antoniou, M.J. Maher, and D. Billington (1999) Defeasible Logic versus Logic Programming without Negation as Failure. *Journal of Logic Programming* **42**(1), 1999, 47-57.
- (J13) Marilyn Ford and David Billington (2000) Strategies in Human Nonmonotonic Reasoning, *Computational Intelligence Journal* vol 16 number 3 August 2000, 446-468.
- (J14) David Billington and Andrew Rock (2001) Propositional Plausible Logic: Introduction and Implementation, *Studia Logica* vol 67 number 2, 243-269.
- (J15) G. Antoniou, D. Billington, G. Governatori, and M.J. Maher (2001) Representational Results for Defeasible Logic. *ACM Transactions on Computational Logic* **2**(2), 255-287.
- (J16) M.J. Maher, A. Rock, G. Antoniou, D. Billington, T. Miller (2001) Efficient Defeasible Reasoning Systems. *International Journal of Artificial Intelligence Tools* **10**(4), 483-501.
- (J17) G. Governatori, M.J. Maher, G. Antoniou, D. Billington (2004) Argumentation Semantics for Defeasible Logic. *Journal of Logic and Computation*, **14**(5), 675-702.
- (J18) G. Antoniou, D. Billington, G. Governatori, and M.J. Maher (2006) Embedding Defeasible Logic into Logic Programming. *Theory and Practice of Logic Programming*, **6**(6), 2006, pp703-735. URL: <http://journals.cambridge.org/action/displayIssue?jid=TLP&volumeId=6&issueId=06>

Refereed Conference Publications

- (C1) David Billington (1980) Degree Sequences Uniquely Realisable by Hypergraphs, *Combinatorial Mathematics VII*, Lecture Notes in Mathematics **829**, 59-68. (Springer-Verlag, Berlin, Heidelberg, New York, 1980).
- (C2) David Billington (1981) Connected Subgraphs of the Graph of Multigraphic Realisations of a Degree Sequence, *Combinatorial Mathematics VIII*, Lecture Notes in Mathematics **884**, 125-135. (Springer-Verlag, Berlin, Heidelberg, New York, 1981).
- (C3) David Billington (1982) The Graph of Hypergraphical Realisations of Denumerable Multisets of Degrees, *Combinatorial Mathematics IX*, Lecture Notes in Mathematics **952**, 150-181. (Springer-Verlag, Berlin, Heidelberg, New York, 1982).
- (C4) D.E. Abel, C. Bailes, D. Billington, T.A. Chorvat, R.G. Dromey, D.D. Grant, and F. Suraweera (1989) Program Derivation: A Clarification of Some Issues, *Australian Computer Science Communications*, **11** Nr.1 (1989), 108-119, Proceedings of the 12th Australian Computer Science Conference.
- (C5) David Billington, Koen De Coster, and Donald Nute (1989) Defeasible Nets are Special Defeasible Logics, *Proceedings of the 3rd Australian Joint Artificial Intelligence Conference*, 1989, 363-375.
- (C6) David Billington (1990) Some results on Defeasible Logic, *Australian Computer Science Communications*, **12** Nr.1 (1990), 11-20, Proceedings of the 13th Australian Computer Science Conference.
- (C7) Rachel Fordyce and David Billington (1992) DLog(e): An Implementation of Defeasible Logic, *Proceedings of the 5th Australian Joint Conference on Artificial Intelligence*, 1992, 284-289.
- (C8) David Billington (1994) Adding Disjunction to Defeasible Logic, *Proceedings of the 7th Australian Joint Conference on Artificial Intelligence*, 1994, 259-266.
- (C9) David Billington, G. Antoniou, & M.J. Maher (1997) Representation results for Defeasible Logic, *Proceedings of the 3rd Joint Conference on Information Sciences* (1997), Volume 2: Computational Intelligence, Neural Networks and Semiotics, 188-191.
- (C10) David Billington (1997) Proving Quantified Literals in Defeasible Logic, *Proceedings of the 10th Australian Joint Conference on Artificial Intelligence*, 1997, Lecture Notes in Artificial Intelligence vol. 1342, *Advanced Topics in Artificial Intelligence*, 265-273, Springer-Verlag.

- (C11) G. Antoniou, D. Billington, and M.J. Maher (1998) Normal Forms for Defeasible Logic, *Proceedings of the 1998 Joint International Conference and Symposium on Logic Programming*, 1998, 160-174, MIT press.
- (C12) M.J. Maher, G. Antoniou, & D. Billington (1998) A Study of Provability in Defeasible Logic, *Proceedings of the 11th Australian Joint Conference on Artificial Intelligence*, 1998, Lecture Notes in Artificial Intelligence vol. 1502, *Advanced Topics in Artificial Intelligence*, 215-226, Springer-Verlag.
- (C13) G. Antoniou, M.J. Maher, D. Billington, G. Governatori (1999) Comparison of Sceptical NAF-Free Logic Programming Approaches, *Proceedings of the 5th International Conference on Logic Programming and Nonmonotonic Reasoning (LPNMR'99)*, LNAI 1730, Springer 1999, 347-356
- (C14) G. Antoniou, D. Billington, and M.J. Maher (1999) On the Analysis of Regulations using Defeasible Rules. *Proceedings of the 32nd Hawaii International Conference on Systems Science*, IEEE Press. 7 pages. (No page numbers.)
- (C15) G. Antoniou, D. Billington, G. Governatori, M.J. Maher (1999) On the Modelling and Analysis of Regulations. *Proceedings of the 10th Australasian Conference on Information Systems*, Wellington, New Zealand 1-3 December 1999.
- (C16) D. Billington, G. Antoniou, G. Governatori, M.J. Maher (1999) Revising Nonmonotonic Belief Sets: The Case of Defeasible Logic. *Proceedings of the 23rd German Conference on Artificial Intelligence*, LNAI 1701, Springer 1999, 101-112.
- (C17) A. Rock, and D. Billington (2000) An Implementation of Propositional Plausible Logic. *Proceedings of the Australasian Computer Science Conference 2000-Australian Computer Science Communications*, vol. 22, 204-210. Held at the Australian National University, Canberra, 31 Jan-3 Feb 2000.
- (C18) G. Antoniou, D. Billington, G. Governatori, M.J. Maher (2000) A flexible framework for defeasible logics. *Proceedings of the 17th American National Conference on Artificial Intelligence (AAAI-2000)*, 405-410.
- (C19) G. Antoniou, D. Billington, G. Governatori, M.J. Maher, A. Rock (2000) A Family of Defeasible Reasoning Logics and its Implementation. *Proceedings of the 14th European Conference on Artificial Intelligence (ECAI-2000)* 459-463.
- (C20) G. Governatori, M.J. Maher, G. Antoniou, D. Billington (2000) Argumentation Semantics for Defeasible Logics. *Proceedings of the 6th Pacific Rim International Conference on Artificial Intelligence (PRICAI'2000)*, LNAI, Springer 2000, 27-37.
- (C21) M.J. Maher, A. Rock, G. Antoniou, D. Billington, T. Miller (2000) Efficient Defeasible Reasoning Systems. *Proceedings of 12th IEEE International Conference on Tools with Artificial Intelligence (ICTAI 2000)*, IEEE Computer Society Press, 384-392.
- (C22) G. Antoniou, D. Billington (2001) Relating Defeasible and Default Logic. *Proceedings of the 14th Australian Joint Conference on Artificial Intelligence*, 2001, Lecture Notes in Artificial Intelligence vol. 2256, 13-24. Springer 2001.
- (C23) D. Billington, A. Rock (2003) Constructive Plausible Logic is Relatively Consistent. *Proceedings of the 16th Australian Conference on Artificial Intelligence*, 2003, Lecture Notes in Artificial Intelligence vol. 2903, 954-965. Springer 2003.
- (C24) David Billington (2005) The Proof Algorithms of Plausible Logic Form a Hierarchy. *Proceedings of the 18th Australian Joint Conference on Artificial Intelligence*, Sydney, Australia, 5-9 December 2005. Lecture Notes in Artificial Intelligence vol. 3809, 796-799. Springer 2005.
- (C25) David Billington (2005) A Fixed-Point Semantics for Plausible Logic. *Proceedings of the 18th Australian Joint Conference on Artificial Intelligence*, Sydney, Australia, 5-9 December 2005, Lecture Notes in Artificial Intelligence vol. 3809, 812-815. Springer 2005.
- (C26) David Billington, Vlad Estivill-Castro, Rene Hexel, and Andrew Rock (2005) Non-monotonic Reasoning for Localisation in RoboCup. *Proceedings of the 2005 Australasian Conference on Robotics and Automation*, Claude Sammut (editor) ISBN 0-9587583-7-9 at <http://www.cse.unsw.edu.au/~acra2005/proceedings/index.html> and held at the University of

New South Wales, Sydney, Australia, 5-7 December 2005. 10 pages at
<http://www.cse.unsw.edu.au/~acra2005/proceedings/papers/billington.pdf>

- (C27) David Billington, Vladimir Estivill-Castro, Rene Hexel, and Andrew Rock (2006) Using Temporal Consistency to Improve Robot Localisation. *Proceedings of the 10th RoboCup International Symposium*, 19-20 June 2006, Bremen, Germany. Lecture Notes in Artificial Intelligence vol. ????, ???-???. Springer 2006.
- (C28) David Billington (2007) Entailment Semantics for Rules with Priorities. *Proceedings of the Twentieth International Joint Conference on Artificial Intelligence (IJCAI2007)*, 256-261, Hyderabad, India, January 6-12, 2007.

Refereed Workshop Articles

- (W1) Donald Nute, David Billington, and Koen De Coster (1989) Defeasible Logics and Inheritance Hierarchies with Exceptions, *Proceedings of the Tübingen Workshop on Semantic Nets, Inheritance, and Nonmonotonic Reasoning*, University of Tübingen, Germany 1989, 69-82.
- (W2) David Billington (1991), Defeasible Logic with Disjunction, *Proceedings of the Disjunctive Logic Programs Workshop within the International Logic Programming Symposium*, San Diego, California, USA (1991), 1-15.
- (W3) David Billington (1995) Representing Beliefs Using Defeasible Logic, *Proceedings of the First Australian Workshop on Commonsense Reasoning within the 8th Australian Joint Artificial Intelligence Conference*, Canberra, Australia 1995, 12-22.
- (W4) David Billington (1996) A Defeasible Logic with Quantifiers, *Proceedings of the Workshop on Reasoning with Incomplete and Changing Information within the 4th Pacific Rim International Conference on Artificial Intelligence*, Cairns, Australia 1996. 1-12.
- (W5) David Billington (1997) Conflicting Literals and Defeasible Logic, *Proceedings of the Second Australian Workshop on Commonsense Reasoning in conjunction with the 10th Australian Joint Conference on Artificial Intelligence*, 1997. 1-14.
- (W6) G. Antoniou, D. Billington, and M.J.Maher (1998) Sceptical logic programming based default reasoning -Defeasible logic rehabilitated, *Proceedings of the Formalization of Commonsense Reasoning Workshop*, London, England, 1998, 1-19.
<http://www.ida.liu.se/ext/etai/nj/fcs-98/listing.html>
- (W7) G. Antoniou, D. Billington, and M.J.Maher (1998) Defeasible logic revisited, *Proceedings of the Special Workshop on Formal Aspects and Applications of Nonmonotonic Reasoning*, held in conjunction with the Seventh International Workshop on Nonmonotonic Reasoning, pp1-8. Trento, Italy 1998.
- (W8) G. Antoniou, D. Billington, and M.J.Maher (1998) On the Analysis of Regulations using Defeasible Rules. *Proceedings of the AAAI-98 Workshop on Knowledge Management and Business Process Re-engineering*, AAAI Press 1998.
- (W9) David Billington (1998), Defeasible Deduction with Arbitrary Propositions, *Poster Proceedings of the 11th Australian Joint Conference on Artificial Intelligence*, 1998, 3-14.
- (W10) David Billington (1999) Introduction to Propositional Plausible Logic. *Proceedings of the third Australian Commonsense Reasoning Workshop*, Sydney, 7 Dec 1999, 20-34. Also available at <http://infosystems.newcastle.edu.au/webworld/acw99/proceeding.htm>
- (W11) A. Rock, and D. Billington (1999) A Propositional Plausible Logic Implementation in Haskell. *Proceedings of the third Australian Commonsense Reasoning Workshop*, Sydney, 7 Dec 1999, 131-144. Also available at <http://infosystems.newcastle.edu.au/webworld/acw99/proceeding.htm>
- (W12) G. Antoniou, D. Billington, M. Maher, A. Rock (2000) Efficient Defeasible Reasoning Systems. *Proceedings of Australasian Workshop on Computational Logic*, Australian National University, Canberra, 3-4 February 2000.
- (W13) G. Antoniou, D. Billington, G. Governatori, M.J. Maher (2000) A Flexible Framework for Defeasible Logics. *Proceedings of the Eighth International Workshop on Nonmonotonic Reasoning*, Breckenridge Colorado USA 9-11 April 2000. 7 pages.

- (W14) D. Billington and G. Antoniou (2001) A Plausible Logic with Dynamic Priorities. *Proceedings of the 2nd Australasian Workshop on Computational Logic*, Bond University, Jan 2001, 11-20.
- (W15) D. Billington (2002) An Ambiguity Propagating Plausible Logic. *Proceedings of the Australasian Workshop on Computational Logic*, Australian National University, Canberra 2-3 December 2002, 1-8.
- (W16) D. Billington (2004) A Plausible Logic which Detects Loops. *Proceedings of the Tenth International Workshop on Nonmonotonic Reasoning*, Whistler BC Canada, 6-8 June 2004, 65-71. ISBN 92-990021-0-X
- (W17) Kewen Wang, David Billington, Jeff Blee, and Grigoris Antoniou (2004) Combining Description Logic and Defeasible Logic for the Semantic Web. *Proceedings of the Rules and Rule Markup Languages for the Semantic Web Workshop (RuleML2004) of the 3rd International Semantic Web Conference (ISWC2004)*, Hiroshima, Japan, 8 Nov 2004, Lecture Notes in Computer Science 3323, 170-181.

Book Review

- (R1) David Billington (1994) Review of Gerhard Brewka's book "Nonmonotonic Reasoning: Logical Foundations of Commonsense", *Journal of Logic and Computation*, volume 4 number 3 June 1994, 328-329.

Article Submitted

David Billington, Vladimir Estivill-Castro, Rene Hexel, and Andrew Rock, "Non-monotonic Reasoning on Board a Sony AIBO". Chapter ?? in Pedro U. Lima (ed), "Robot Soccer" see <http://www.ars-journal.com/rs.htm> due to be published in Sept 2007.