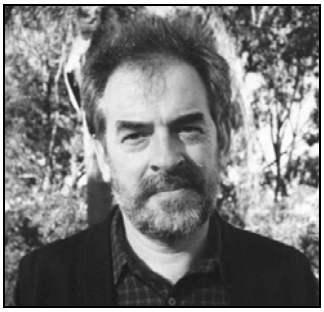
CURRICULUM VITAE



DR. JOHN RICHARD THORNTON

Contact Details

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email:	j.thornton@griffith.edu.au
web:	www.cit.gu.edu.au/~johnt/
dob:	30 December 1959

CURRENT POSITIONS

Associate Director of the Institute for Integrated and Intelligent Systems, Griffith University Research Centre, Queensland, Australia.

Senior Lecturer, School of Information and Communication Technology, Grifffith University Gold Coast.

Researcher, SAFE Agents Group, Queensland Research Lab, National ICT Australia (NICTA).

RESEARCH PROFILE

AREAS OF INTEREST AND EXPERTISE

Computer modelling of neocortical function. Modelling and solving constraint satisfaction problems, over-constrained systems, intelligent scheduling, and satisfiability problems. Local search techniques (constraint weighting, tabu search, simulated annealing, GSAT and variants), linear and integer programming, object-orientated design and development, relational database design and development, mobile robotics (robotic soccer vision, control and architecture) .

DEGREES

PhD in Artificial Intelligence (July 2000) Griffith University: *Constraint Weighting for Constraint Satisfaction.* Examiners: Professor Toby Walsh, Professor Hector Levesque, Professor Kim Marriott.

BSc with Honours (1st Class) in Computer Science (November 1995) Griffith University: *An Enhanced Cyclic Descent Algorithm for Nurse Rostering.*

BBus in Commercial Computing (November 1993) Griffith University. Grade Point Average of 6.83 out of 7.00

PUBLICATIONS

Journal tiers (1, 2, 3) and conference rankings (A^+, A, B, C) from www.core.edu.au Citation counts from Google Scholar, June 2007.

Books

Thornton, J. R. (2007). *The Foundations of Computing and the Information Technology Age: A historical, sociological and philosophical enquiry*. Australia: Pearson Prentice Hall, ISBN 9780733988486.

Journal Papers

Thornton, J. R. (2005). Clause Weighting Local Search for SAT. *Journal of Automated Reasoning. 35*(1-3), 97-142, ISSN 0168-7433 [Tier 2, 4 citations].

Thornton, J. R., Beaumont, M., Sattar, A. & Maher, M. (2004). A Local Search Approach to Modelling and Solving Interval Algebra Problems. *Journal of Logic and Computation, 14*(1), 93-112. Oxford University Press, ISSN 0955-792X [Tier 2, 10 citations].

Conference Papers

2007

Pham, D. N., Thornton, J. R. & Sattar, A. (2007). *Building Structure into Local Search for SAT*. In Manuela M. Veloso (Ed.): **IJCAI 2007**, Proceedings of the 20th International Joint Conference on Artificial Intelligence, Hyderabad, India, January 6-12, 2007, pp. 2359-2364 [**A^+** 1 citation]. **Winner of Distinguished Paper Award**.

2006

Thornton, J. R., Gustafsson, T., Blumenstein, M. & Hine, T. (2006). Robust Character Recognition using a Hierarchical Bayesian Network. In Abdul Sattar, Byeong Ho Kang (Eds.): **AI 2006**: Advances in Artificial Intelligence, 19th Australian Joint Conference on Artificial Intelligence, Hobart, Australia, December 4-8, 2006, Proceedings. *Lecture Notes in Computer Science, 4304*, pp. 1259-1264. Heidelberg: Springer, ISBN 3-540-49787-0 [**B**].

Ishtaiwi, A., Thornton, J. R., Anbulagan, Sattar, A. & Pham, D. N. (2006). Adaptive Clause Weight Redistribution. In F. Benhamou (Ed.): Principles and Practice of Constraint Programming - **CP 2006**, 12th International Conference, Nantes, France, September 25-29, 2006, Proceedings. *Lecture Notes in Computer Science, 4204*, pp. 229-243, Hiedelberg: Springer, ISBN 3-540-46267-8 [**A**].

Pham, D. N., Thornton, J. R. & Sattar, A. (2006). Towards an Efficient SAT Encoding for Temporal Reasoning. In F. Benhamou (Ed.): Principles and Practice of Constraint Programming - **CP 2006**, 12th International Conference, Nantes, France, Sep-

tember 25-29, 2006, Proceedings. *Lecture Notes in Computer Science, 4204*, pp. 421-436, Hiedelberg: Springer, ISBN 3-540-46267-8 [**A**].

2005

Pham, D. N., Thornton, J. R., Sattar, A. & Ishtaiwi, A. (2005). SAT-based versus CSP-based Constraint Weighting for Satisfiability. In Manuela M. Veloso, Subbarao Kambhampati (Eds.): Proceedings, The 20th National Conference on Artificial Intelligence, **AAAI 2005**, July 9-13, 2005, Pittsburgh, Pennsylvania, USA, pp. 455-460. AAAI Press / The MIT Press 2005, ISBN 1-57735-236-X [**A**$^+$ 5 citations].

Bain, S., Thornton, J. R. & Sattar, A. (2005). A Comparison of Evolutionary Methods for the Discovery of Local Search Heuristics. In Shichao Zhang, Ray Jarvis (Eds.): **AI 2005**: Advances in Artificial Intelligence, 18th Australian Joint Conference on Artificial Intelligence, Sydney, Australia, December 5-9, 2005, Proceedings. *Lecture Notes in Computer Science, 3809*, pp. 1068-1074. Heidelberg: Springer, ISBN 3-540-30462-2 [**B**].

Ferreira Jr., V. & Thornton, J. R. (2005). Tie Breaking in Clause Weighting Local Search for SAT. In Shichao Zhang, Ray Jarvis (Eds.): **AI 2005**: Advances in Artificial Intelligence, 18th Australian Joint Conference on Artificial Intelligence, Sydney, Australia, December 5-9, 2005, Proceedings. *Lecture Notes in Computer Science, 3809*, pp. 70-81. Heidelberg: Springer, ISBN 3-540-30462-2 [**B** 1 citation].

Bain, S., Thornton, J. R. & Sattar, A. (2005). Evolving Variable-Ordering Heuristics for Constrained Optimisation. In Peter van Beek (Ed.): Principles and Practice of Constraint Programming - **CP 2005**, 11th International Conference, Sitges, Spain, October 1-5, 2005, Proceedings. *Lecture Notes in Computer Science, 3709*, pp. 732-736, Heidelberg: Springer, ISBN 3-540-29238-1 [**A** 2 citations].

Ishtaiwi, A., Thornton, J. R., Sattar, A. & Pham, D. N. (2005). Neighbourhood Clause Weight Redistribution in Local Search for SAT. In Peter van Beek (Ed.): Principles and Practice of Constraint Programming - **CP 2005**, 11th International Conference, Sitges, Spain, October 1-5, 2005, Proceedings. *Lecture Notes in Computer Science, 3709*, pp. 772-776, Heidelberg: Springer, ISBN 3-540-29238-1 [**A** 1 citation].

2004

Thornton, J. R., Pham, D. N., Bain, S. & Ferreira Jr., V. (2004). Additive versus Multiplicative Clause Weighting for SAT. In Deborah L. McGuinness, George Ferguson (Eds.): Proceedings of the 19th National Conference on Artificial Intelligence, **AAAI 2004**, July 25-29, 2004, San Jose, California, USA, pp. 191-196. AAAI Press / The MIT Press, ISBN 0-262-51183-5 [**A**$^+$ 16 citations].

Ferreira Jr., V. & Thornton, J. R. (2004). Longer-Term Memory in Clause Weighting Local Search for SAT. In Geoffrey I. Webb, Xinghuo Yu (Eds.): **AI 2004**: Advances in Artificial Intelligence, 17th Australian Joint Conference on Artificial Intelligence,

Cairns, Australia, December 4-6, 2004, Proceedings. *Lecture Notes in Computer Science, 3339*, pp. 730-741. Heidelberg: Springer, ISBN 3-540-24059-4 [**B**].

Stantic, B., Khanna, S. & Thornton, J. R. (2004). An Efficient Method for Indexing Now-relative Bitemporal Data. In Klaus-Dieter Schewe, Hugh E. Williams (Eds.): Database Technologies 2004, *Proceedings of the Fifteenth Australasian Database Conference*, **ADC 2004**, Dunedin, New Zealand, 18-22 January 2004. CRPIT, 27, pp. 113-122. Australian Computer Society, ISBN 1-920682-06-6 [**B** 4 citations].

Bain, S., Thornton, J. R. & Sattar, A. (2004). Evolving Algorithms for Constraint Satisfaction. *Proceedings of the 2004 Congress on Evolutionary Computation*, **CEC 2004**, Portland, Oregon, June 19-24, 2004. pp. 265-272. IEEE Computer Society, ISBN 0-7803-8515-2 [**A**$^{+}$ 1 citation].

Zhou, L., Thornton, J. R. & Sattar, A. (2004). Dynamic Agent-Ordering and Nogood-Repairing in Distributed Constraint Satisfaction Problems. In Valerie Barr and Zdravko Markov (Eds.): *Proceedings of the 17th International Florida Artificial Intelligence Research Society Conference*, **FLAIRS 2004**, May 17-19, 2004, Miami Beach, Florida, USA, pp. 20-25. AAAI Press, ISBN 978-1-57735-201-3 [**C**].

Bain, S., Thornton, J. R. & Sattar, A. (2004). Methods of Automatic Algorithm Generation. In C. Zhang, Hans W. Guesgen, Wai-Kiang Yeap (Eds.): **PRICAI 2004**: Trends in Artificial Intelligence, 8th Pacific Rim International Conference on Artificial Intelligence, Auckland, New Zealand, August 9-13, 2004, *Proceedings. Lecture Notes in Computer Science, 3157*, pp. 144-153. Heidelberg: Springer, ISBN 3-540-22817-9 [**B**].

Beaumont, M., Thornton, J. R., Sattar, A. & Maher, M. (2004). Solving Over-constrained Temporal Reasoning Problems using Local Search. In C. Zhang, Hans W. Guesgen, Wai-Kiang Yeap (Eds.): **PRICAI 2004**: Trends in Artificial Intelligence, 8th Pacific Rim International Conference on Artificial Intelligence, Auckland, New Zealand, August 9-13, 2004, Proceedings. *Lecture Notes in Computer Science, 3157*, pp. 134-143. Heidelberg: Springer, ISBN 3-540-22817-9 [**B** 4 citations].

2003

Zhou, L., Thornton, J. R., & Sattar, A. (2003). Dynamic Agent Ordering in Distributed Constraint Satisfaction Problems. In Tamas D. Gedeon, Lance Chun Che Fung (Eds.): **AI 2003**: Advances in Artificial Intelligence, 16th Australian Joint Conference on Artificial Intelligence, Perth, Australia, December 3-5, 2003, Proceedings. *Lecture Notes in Computer Science, 2903*, pp. 427-439. Heidelberg: Springer, ISBN 3-540-20646-9 [**B** 2 citations].

Anbulagan, Thornton, J. R., & Sattar, A. (2003). Dynamic Variable Filtering for Hard Random 3-SAT Problems. In Tamas D. Gedeon, Lance Chun Che Fung (Eds.): **AI 2003**: Advances in Artificial Intelligence, 16th Australian Joint Conference on Artificial Intelligence, Perth, Australia, December 3-5, 2003, Proceedings. *Lecture Notes in*

Computer Science, 2903, pp. 100-111. Heidelberg: Springer, ISBN 3-540-20646-9 [**B**].

Pullan, W., Zhao, L., & Thornton, J. R. (2003). Estimating Problem Metrics for SAT Clause Weighting Local Search. In Tamas D. Gedeon, Lance Chun Che Fung (Eds.): **AI 2003**: Advances in Artificial Intelligence, 16th Australian Joint Conference on Artificial Intelligence, Perth, Australia, December 3-5, 2003, Proceedings. *Lecture Notes in Computer Science, 2903*, pp. 137-149. Heidelberg: Springer, ISBN 3-540-20646-9 [**B** 1 citation].

Leonard, J., Treffner, P., & Thornton, J. R. (2003). Tau Guidance for Mobile Soccer Robots. In S. Rogers & J. Effken (Eds.) **Studies in Perception and Action VII**, 169-172. Lawrence Erlbaum Associates, ISBN 978-0-8058-4805-2.

Stantic, B., Thornton, J. R., & Sattar, A. (2003). A Novel Approach to Model NOW in Temporal Databases. In *Proceedings of the 10th International Symposium on Temporal Representation and Reasoning / 4th International Conference on Temporal Logic* **TIME-ICTL 2003**, 8-10 July 2003, Cairns, Queensland, Australia, pp. 174-181. IEEE Computer Society, ISBN 0-7695-1912-1 [**A** 4 citations].

2002

Kravchuk, O., Pullan, W., Thornton, J. R. & Sattar, A. (2002). An Investigation of Variable Relationships in 3-SAT Problems. In Bob McKay, John K. Slaney (Eds.): **AI 2002**: Advances in Artificial Intelligence, 15th Australian Joint Conference on Artificial Intelligence, Canberra, Australia, December 2-6, 2002, *Proceedings. Lecture Notes in Computer Science, 2557*, pp. 579-590. Heidelberg: Springer, ISBN 3-540-00197-2 [**B** 1 citation].

Thornton, J. R., Bain, S., Sattar, A. & Pham, D. (2002). A Two Level Local Search for MAX-SAT Problems with Hard and Soft Constraints. In Bob McKay, John K. Slaney (Eds.): **AI 2002**: Advances in Artificial Intelligence, 15th Australian Joint Conference on Artificial Intelligence, Canberra, Australia, December 2-6, 2002, Proceedings. *Lecture Notes in Computer Science, 2557*, pp. 603-614. Heidelberg: Springer, ISBN 3-540-00197-2 [**B** 1 citation].

Thornton, J. R., Pullan, W. & Terry, J. (2002). Towards Fewer Parameters for Clause Weighting SAT Algorithms. In Bob McKay, John K. Slaney (Eds.): **AI 2002**: Advances in Artificial Intelligence, 15th Australian Joint Conference on Artificial Intelligence, Canberra, Australia, December 2-6, 2002, Proceedings. *Lecture Notes in Computer Science, 2557*, pp. 569-578. Heidelberg: Springer, ISBN 3-540-00197-2 [**B** 4 citations].

Ferreira, V., Thornton, J. R. & Leonard, J. (2002). A Subsumption Architecture for Robotic Soccer. In *Proceedings of the* **2002 FIRA Robot World Congress**, May 26-29, Seoul, Korea, pp. 648-654. Korea Robot Soccer Association, ISBN 89-86522-47-0-93560 [**C**].

Thornton, J. R., Leonard, J., Wiseby, R. & Lee, Y. (2002). Shape Recognition and Enhanced Control Systems for Robot Soccer. In *Proceedings of the* **2002 FIRA Robot World Congress**, May 26-29, Seoul, Korea, pp. 670-675. Korea Robot Soccer Association, ISBN 89-86522-47-0-93560 [**C**].

Thornton, J. R., Beaumont, M., Sattar, A. & Maher, M. (2002). Applying Local Search to Temporal Reasoning. In *Proceedings of the 9th International Symposium on Temporal Reasoning and Representation*, **TIME 2002**, Manchester, U.K., July 7-9, pp. 94-99. IEEE Computer Society [**A** 3 citations].

2001 and Earlier

Beaumont, M., Sattar, A., Maher, M., & Thornton, J. R. (2001). Solving Over-Constrained Temporal Reasoning Problems. In Markus Stumptner, Dan Corbett, Michael J. Brooks (Eds.): **AI 2001**: Advances in Artificial Intelligence, 14th Australian Joint Conference on Artificial Intelligence, Adelaide, Australia, December 10-14, 2001, Proceedings. *Lecture Notes in Computer Science, 2256*, pp. 37-49. Heidelberg: Springer, ISBN 3-540-42960-3 [**B** 7 citations].

Nagarajan, S., Goodwin, S., Sattar, A, & Thornton, J. R. (2000). On Dual Encodings for Non-Binary Constraint Satisfaction Problems. In Rina Dechter (Ed.): Principles and Practice of Constraint Programming - **CP 2000**, 6th International Conference, Singapore, September 18-21, 2000, Proceedings. *Lecture Notes in Computer Science, 1894*, pp. 531-536. Heidelberg: Springer, ISBN 3-540-41053-8 [**A**].

Thornton, J. R., & Sattar, A. (1999). On the Behaviour and Application of Constraint Weighting. In Joxan Jaffar (Ed.): Principles and Practice of Constraint Programming - **CP '99**, 5th International Conference, Alexandria, Virginia, USA, October 11-14, 1999, Proceedings. *Lecture Notes in Computer Science, 1713*, pp. 446-460. Heidleberg: Springer, ISBN 3-540-66626-5 [**A** 4 citations].

Thornton, J. R., & Sattar, A. (1998). Using Arc Weights to Improve Iterative Repair. In *Proceedings of the 15th National Conference on Artificial Intelligence*, **AAAI '98**, July 26-30, 1998, Madison, Wisconsin, USA, pp. 367-372. AAAI Press / The MIT Press, ISBN 0-262-51098-7 [$\mathbf{A}^+$ 3 citations].

Thornton, J. R., & Sattar, A. (1998). Dynamic Constraint Weighting for Over-Constrained Problems. In Hing-Yan Lee, Hiroshi Motoda (Eds.): **PRICAI '98**, Topics in Artificial Intelligence, 5th Pacific Rim International Conference on Artificial Intelligence, Singapore, November 22-27, 1998, Proceedings. *Lecture Notes in Computer Science, 1531*, pp. 377-388. Heidelberg: Springer, ISBN 3-540-65271-X [**B** 3 citations].

Thornton, J. R., & Sattar, A. (1997). Applied Partial Constraint Satisfaction Using Weighted Iterative Repair. In A. Sattar (Ed.) Proceedings of Tenth Australian Joint Conference on Artificial Intelligence, **AI'97**. *Lecture Notes in Artificial Intelligence 1342*, . Heidelberg: Springer, ISBN 3-540-63797-4 [**B** 2 citations].

Thornton, J. R., & Sattar, A. (1997). Nurse Rostering and Integer Programming Revisited. In B. Verma & X. Yao (Eds.) In *Procceedings of the International Conference on Computational Intelligence and Multimedia Applications*, **ICCIMA '97**, Gold Coast, Australia, February 10-12, 1997, pp. 49-58. ISBN 0-86857-761-8 [**C**].

Thornton, J. R., & Sattar, A. (1996). An Integer Programming-Based Nurse Rostering System. In Joxan Jaffar, Roland H. C. Yap (Eds.): Concurrency and Parallelism, Programming, Networking, and Security: 2nd Asian Computing Science Conference, **ASIAN '96**, Singapore, December 2-5, 1996, Proceedings. *Lecture Notes in Computer Science, 1179*, pp. 357-358. Heidelberg: Springer, ISBN 3-540-62031-1 [**B**].

Published Workshops and Talks

Thornton, J. R. (2006). Causation and Consciousness. In *Proceedings of the 2006 Conference of the Australasian Association for Philosophy*, **AAP 2006**, Canberra, Australia, July 2-7, 2007, p. 35. Australian National University.

Thornton, J. R., Bain, S., Sattar, A. & Pham, D. (2002). Applying Local Search to MAX-SAT Problems with Hard and Soft Constraints. In *Proceedings of the 4th International Workshop on Soft Constraints*, **Soft 2002**, Ithaca, New York, 87-98.

Thornton, J. R. (2000). Robot Soccer in 21 Days. In Stonier, R. (Ed.) *Proceedings of the* **2000 FIRA Robot World Cup**, University of Central Queensland, Rockhampton.

Thornton, J. R. (1997). New Approaches to Solve Constraint Satisfaction Problems Using Constraint Weighting. In Harris, G. (Ed.) *Proceedings of 1st Workshop on Intelligent Scheduling* **IS'97**. School of Information Systems and Management Science, Griffith University.

Theses

Thornton, J. R. (2000). *Constraint Weighting for Constraint Satisfaction.* PhD Thesis, School of Computing and Information Technology, Griffith University Nathan.

Thornton, J. R. (1995). *An Enhanced Cyclic Descent Algorithm for Nurse Rostering.* Honours Thesis, Faculty of Engineering and Applied Science, Griffith University Gold Coast.

HIGHER DEGREE CANDIDATE SUPERVISION

Current PhD Students

Abdelraouf Ishtaiwi, working on new constraint weighting frameworks for constraint satisfaction and over-constrained problems. (Principal supervisor).

Stuart Bain (2007). *Evolving Algorithms for Over-Constrained and Satisfaction Problems*. PhD Thesis. Griffith University. Institute for Integrated and Intelligent Systems [Thesis under examination]. (Principal supervisor).

PhD Completions

Valnir Ferreira Jnr. (2007). *Improvements to Clause Weighting Local Search for Propositional Satisfiability*. PhD Thesis. Griffith University. Institute for Integrated and Intelligent Systems. (Principal supervisor).

Pham, Duc Nghia (2006). *Modelling and Exploiting Structures in Solving Propositional Satisfiability Problems*. PhD Thesis. Griffith University School of Information and Communication Technology, Gold Coast. (Principal supervisor).

Zhou, Lingzong (2006). *Agent Ordering and Nogood Repairs in Distributed Constraint Solving*. PhD Thesis. Griffith University School of Information and Communication Technology, Gold Coast. (Associate supervisor).

Beaumont, Matthew (2004). *Handling Over-Constrained Temporal Constraint Networks*. PhD Thesis. Griffith University. Institute for Integrated and Intelligent Systems. (Associate supervisor).

Cowling, Michael (2004). *Non-speech Environmental Sound Classification System for Autonomous Surveillance*. PhD Thesis. Griffith University School of Information Technology, Gold Coast. (Associate supervisor).

Cole, Richard (2000). *The Managment and Visualisation of Document Collections using Formal Concept Analysis*. PhD Thesis. Griffith University School of Information Technology, Gold Coast. (Associate supervisor).

MPhil Completions

Moore, Ian (2002). *An Intelligent System Archictecture for Knowledge Discovery.* MPhil Thesis. Griffith University School of Information Technology, Gold Coast. (Associate supervisor).

Masters Completions

Tilley, Linda (2005). *Using Kinetic Occlusion in Spatiotemporal Boundary Formation.* Masters Thesis. Griffith University School of Information Technology, Gold Coast. (Principal supervisor).

Ishtaiwi, Abdelraouf (2001). *Tabu Search in Binary Constraint Satisfaction Problems.* Masters Thesis. Griffith University School of Computing and Information Technology. (Associate supervisor).

Honours Completions

Leonard, Joe (2003). *Intercepting a Moving Target - An Ecological Perspective.* Honours Thesis (First Class). Griffith University School of Information Technology, Gold Coast. (Principal supervisor).

Dokter, Jeremy (2003). *Applying Ecological Principles to Vision Smoothing.* Honours Thesis (First Class). Griffith University School of Information Technology, Gold Coast. (Principal supervisor).

Pham, Duc Nghia (2002). *Applying Weight Reduction to Binary Constraint Satisfaction Problems.* Honours Thesis (First Class). Griffith University School of Information Technology, Gold Coast. (Principal supervisor).

Ferreira Jnr., Valnir (2001). *A Subsumption Architecture for Robotic Soccer.* Honours Thesis (First Class). Griffith University School of Information Technology, Gold Coast. (Principal supervisor).

Terry, Justin (2002). New Weighting Heuristics for SAT. Honours Thesis (First Class). Griffith University School of Information Technology, Gold Coast. (Principal supervisor).

RESEARCH GRANTS

Nationally Competitive Research Grants

Barrett, R., Adams, L. Thornton, J. and Kim, N. *Dynamics of Locomotion: Visualisation in skill acquisition and rehabilitation* (2003-2005). Australian Research Council Discovery Project: $342,000.

Sattar, A., Maher, M., Goodwin, S. and Thornton, J. *Intelligent Settlement of Over-Constrained Problems* (1999-2002). Australian Research Council Large ARC Grant: $220,000.

Griffith University Competitive Research Grants

Thornton, J., Blumenstein, M. and Hine, T. *Hierarchical Predictive Memory: A New Architecture for Intelligence* (2006-2007). Institute for Integrated and Intelligent Systems (IIIS) Cognitive Systems Grant: $19,000.

Estivill-Castro, V. and Thornton, J. *Computer image processing for vision and object identification on mobile robots working in environments with uncontrolled illumination* (2004). Griffith University Research Grant: $11,000.

Estivill-Castro, V. Thornton, J. Treffner, P. Sattar, A. and Pullan, P. *Perception, action, reasoning and learning for intelligent mobile agents* (2003) Griffith University Infrastructure Grant: $78,000

Sattar, A., Thornton, J. and Pullan, W. *Local search for temporal reasoning* (2003). Griffith University Research Grant: $5,000.

SCHOLARLY CONTRIBUTIONS

Program Co-Chair of the 2007 Australian Joint Conference on Artificial Intelligence, Gold Coast, Queensland.

Program Committee member of the 2003 and 2004 Australasian Computer Science Conference and the 2004 and 2006 Australian Joint Conference on Artificial Intelligence.

International reviewer for the Journal of Automated Reasoning (JAR), the International Joint Conference on Artificial Intelligence (IJCAI), the International Conference on the Principles and Practice of Constraint Programming (CP), the European Conference on Logics in Artificial Intelligence (JELIA) and the Pacific Rim International Conference on Artificial Intelligence (PRICAI).

RESEARCH GROUP LEADERSHIP

Hierarchical Temporal Memory Group

In this group we are investigating the work of Jeff Hawkins and Dileep George on modelling the operation of the neocortex in software. We have a IIIS research grant and employ one part-time research assistant (Jolon Faichney) to work on the project. Team members include: Staff: Michael Blumenstein, Trevor Hine; Honours students: Torbjorn Gustafsson.

Constraint Satisfaction Problem (CSP) Group

The CSP group has been the "engine" of my research, where the majority of my research students have collaborated and worked to produce a string of influential international conference papers that include publications in IJCAI, AAAI, PRICAI and CP. Members have included: Staff: Wayne Pullan, Abdul Sattar; PhD students: Duc Nghia Pham, Stuart Bain, Valnir Ferreira Jr., Abdelraouf Ishtaiwi, Mathew Beaumont and Lingzhong Zhou. This work has been partly funded by a large ARC grant *Intelligent Settlement of Over-Constrained Problems* and by support from NICTA Queensland.

Mobile Robotics Research Unit

I also built up a Gold Coast Campus Mobile Robotics Research Unit, which was involved in the development of the Griffith University Robot Soccer Team, the Robo-Coasters. This group fielded teams in the 2000, 2001 and 2002 FIRA Robot World Cup, and contributed significant research in the areas of robotic vision and control. In addition, the Robot Soccer Team has generated considerable media and student interest and has been instrumental in promoting and raising the profile of the School of Information Technology both nationally and internationally. Honours and Masters student members of this group have included Jeremy Dokter, Linda Tilley and Joe Leonard. Support was also provided by an ARC Discovery grant *Dynamics of Locomotion.*

PRIZES, AWARDS AND SCHOLARSHIPS

2007 IJCAI Distinguished Paper Award
(IJCAI is the world's premier artificial intelligence conference)

1997 Griffith University Gold Coast Campus Scholarship ($20,000 p.a.)
(Scholarship for highest achieving PhD candidate on Gold Coast Campus)

1996 Australian Postgraduate Award with Stipend
(Australian Government postgraduate scholarship)

1995 University Medal
(Prize for outstanding performance in an Honours degree)

1993 Business Medal
(Prize for highest overall GPA in the Bachelor of Business degree)

1993 Australian Computer Society Prize
(Prize for highest overall results in Commercial Computing Major)

1993 Harcourt Brace & Co Book Prize
(Prize for highest performance in Research Analysis and Design)

1993 Dean's Commendation
(Overall GPA Credit or above)

1993 Distinguished Scholar's Award
(Overall GPA Distinction or above)

1992 GIO Australia Prize
(Prize for highest second year Business Division GPA)

1991 ASCPA DUX-YEAR 1, Accounting Major
(Australian Society of Certified Practising Accountants Prize for highest first year GPA of any student taking Financial Accounting)

TEACHING PROFILE

DEGREE CONVENORSHIPS

Program convenor of the Gold Coast Bachelor of Information Technology Honours (BIT Hons) degree from 2005 to present.

Program convenor of the Gold Coast Bachelor of Information Technology (BIT) degree during 2005.

CURRICULUM DEVELOPMENT

Served on the Griffith University curriculum design committees for both the 2003 Gold Coast BIT review and for the 2005 cross-campus BIT degree program.

New Undergraduate Courses Developed from scratch:

1004ICT Foundations of Computing and Communication
2101INT Principles of Intelligent Systems
3016INT Logical Foundations of Computational Intelligence

New Honours Courses Developed from scratch:

6209INT Constraint Satisfaction and Over-Constrained Problems

Undergraduate Courses that I have significantly remodelled and revised:

2005INT Database Design
2008INT Data Structures and Algorithms
3001INT Database Development
3009INT Programming III
3511ICT Machine Learning and Perception

Honours Courses that I have significantly remodelled and revised:

6201INT Research Methods and Presentation

Masters Courses that I have significantly remodelled and revised:

7006INT Database Design
7008INT Database Implementation
7020INT Scientific Research Methods

TEACHING EXPERIENCE 2000-2007

Duties Key: C = convenor, L = lecturer, T = tutor, R = research leave

Year	Semester	Level	Duties	Course Title
2007	2	3rd Year	CLT	3503ICT Operating Systems
	1	1st Year	CLT	1004ICT Foundations of Comp. and Comm.
	1	3rd Year	CLT	3511ICT Machine Learning and Perception
	1	Honours	CL	6201INT Research Methods and Presentn.
	1 & 2	Honours	C	6207INT Dissertation
	1	Masters	CL	7020INT Scientific Research Methods
2006	2	n/a	R	Academic Studies Program
	1	1st Year	CLT	1004ICT Foundations of Comp. and Comm.
	1	Honours	C	6207INT Dissertation
	1	Honours	CL	6205INT Advanced Topics in IT A
2005	2	n/a	R	Academic Studies Program
	1	1st Year	CLT	1004ICT Foundations of Comp. and Comm.
	1	1st Year	T	1004INT Information Systems
	1	Honours	C	6207INT Dissertation
2004	2	2nd Year	CLT	2101INT Principles of Intelligent Systems
	2	Masters	CLT	7011ICT Software Development II
	1	1st Year	CLT	1010INT Foundations of Computing
	1	3rd Year	CLT	3009INT Programming III
	1 & 2	Honours	C	6207INT Dissertation
2003	2	3rd Year	CLT	3016INT Logical Found. of Comp. Intell.
	2	Masters	CLT	7011ICT Software Development II
	1	1st Year	CLT	1010INT Foundations of Computing
	1	Honours	CL	6209INT Constraint Satisfaction & OCS
2002	1 & 2	n/a	R	ARC Funded Research
2001	2	2nd Year	CLT	2005INT Database Design
	2	Masters	CLT	7006INT Database Design
	1	2nd Year	CLT	2008INT Data Structures and Algorithms
	1	Honours	L	6205INT Advanced Topics in IT A
2000	2	2nd Year	CLT	2005INT Database Design
	2	3rd Year	CLT	3001INT Database Development
	2	Honours	L	6205INT Advanced Topics in IT A
	1	3rd Year	CLT	3009INT C Programming
	1	3rd Year	CLT	3001INT Database Development

TEACHING EXPERIENCE 1994-1999

Duties Key: C = convenor, L = lecturer, T = tutor

Year	Semester	Level	Duties	Course Title
1999	2	2nd Year	CLT	Database Design
	2	Masters	CL	Database Design
	1	3rd Year	CLT	C Programming
1998	2	2nd Year	CLT	Database Design
	2	Masters	CLT	Database Design
	1	2nd Year	CL	Data Structures and Algorithms
	1	Masters	CLT	Database Design
1997	3	Masters	CLT	Database Implemention
	2	2nd Year	CLT	Database Design
	2	Masters	CLT	Database Design
	1	3rd Year	CLT	C Programming
1996	3	Masters	CLT	Database Implemention
	2	2nd Year	CLT	Database Design
	2	Masters	CLT	Database Design
	1	3rd Year	CLT	C Programming
1995	3	Masters	CLT	C Programming Bridging Course
	3	Masters	CLT	Software Development II
	3	2nd Year	T	Database Design
	1	3rd Year	T	Programming Languages II
	1	1st Year	CLT	Application Design and Development
1994	2	1st Year	T	Application Design and Development
	2	3rd Year	T	Human Computer Interaction
	1	1st Year	T	Information Systems

EMPLOYMENT HISTORY

SENIOR LECTURER

School of Information and CommunicationTechnology,
Gold Coast Campus of Griffith University, Parklands Drive, Southport, Qld
January 2002 – present
Promoted to senior lecturer (level C). Continued with teaching and convening of undergraduate, honours and masters level subjects and research higher degree supervision. Appointed program convenor of BIT and BIT Honours degrees and Associate Director of the IIIS Research Centre with special responsibilities for the Gold Coast research staff members. Assumed acting Head of School role as needed. Had considerable input into the curriculum design of the new BIT degrees, co-ordinating and introducing new subjects, revising old ones and developing new assessment items. Also contribute 10% (1 day per fortnight) as a NICTA researcher with the SAFE agents group of the the Queensland Research Lab.

LECTURER

School of Information Technology,
Gold Coast Campus of Griffith University, Parklands Drive, Southport, Qld
January 1999 – December 2001
Employed as lecturer (level B). Involved in teaching and convening various undergraduate and masters level database and programming subjects and the supervision of Honours, MPhil and PhD research students.

SESSIONAL STAFF MEMBER

School of Information Technology,
Gold Coast Campus of Griffith University, Parklands Drive, Southport, Qld
February 1995 – November 1998
During this time I have acted as convenor or co-convenor for sixteen different Information Technology subject offerings across a range of four undergraduate subjects (Application Design and Development, C Programming, Database Design and Data Structures and Algorithms) and three postgraduate Masters subjects (Database Implementation, Database Design and Software Development II). In these subjects I have taught both lectures and tutorials and have been responsible for the co-development and marking of all assessment items.

ASSOCIATE LECTURER (HALF TIME)

Faculty of Business and Hotel Management,
Gold Coast Campus of Griffith University, Parklands Drive, Southport, Qld
February 1994 - December 1994
While studying for my Honours degree I was employed to take tutorials in Application Design and Development, Information Systems and Human Computer Interaction.

SELF EMPLOYED ANALYST /PROGRAMMER

Kennedy Pacific Pty, Unit 4/65 Bundall Road, Bundall, Qld 4217
December 1992 - December 1996.
Initiated a project to develop a large database application for a local direct mail company. Started in sole charge of the project with direct responsibility to the managing director and with the assistance of one other programmer. After developing a conceptual database design and prototype application, the company offered me full-time position to manage the implementation. Due to my academic career, I declined the offer. Subsequently, the company approached me as a consultant to find suitable staff to complete the project. I was able to recommend a systems analyst and junior programmer, who are both still employed in the company, and have successfully implemented the new system. The experience gained during this project has given me a thorough grounding in the realities of developing software in a commercial environment and has significantly enhanced my abilities as a systems analyst.

SELF EMPLOYED ANALYST /PROGRAMMER

PC Software Solutions, 10 Swift Place, Burleigh Waters, Qld
December 1993 - February 1994.
Worked with the business owner, Mr. Chris Gay, in co-developing a database application in Microsoft Access® for a Real Estate Valuation Company. I also tutored Mr. Gay in Microsoft Windows® programming techniques. In working with Mr. Gay I was able to improve my own Windows programming skills and to benefit from his experience in commercial application development - especially in the area of efficient program design.

SELF EMPLOYED TUTOR

Advance Coaching Colleges, 210 Troughton Road, Coopers Plains, Qld 4108
July 1991 - November 1991.
Tutored in Year 10 mathematics and 1st year university level accounting.

DRIVER/GARDENER FOR PLYMOUTH CITY COUNCIL

Plymouth, Devon, England.
February 1990 - October 1990.
This was a temporary position taken after the sale of the landscaping business in London whilst waiting for the Australian immigration papers to be processed.

SELF-EMPLOYED LANDSCAPE GARDENER AND DESIGNER

Muswell Hill, London, England.
June 1987 - January 1990.
Owned and operated a business in partnership with my wife. Responsible directly to over 20 customers for the improvement and maintenance of their gardens. Involved in all phases of landscape project development: from initial customer consultation, planning and design, price negotiation, hiring and co-ordination of temporary workers, co-ordination of suppliers to the actual implementation of the design and maintenance of the finished garden. The work required good design and problem solving skills, a high degree of self-motivation and self-discipline, sound business sense and the ability to communicate well with colleagues, clients, employees and suppliers - all skills that I also bring to my work in computing and academia.

FOREMAN GARDENER

Devon Landscaping, Mill Valley, California, U.S.A.
May 1984 - June 1987
Assisted the owner in the organisation and operation of the business. Had authority over other staff during the execution of large landscaping projects and would take over the running of the business whilst the owner was on holiday.

SELF-EMPLOYED GARDENER

Brighton, Sussex, England
September 1981 - May 1984
Owned and operated a small garden maintenance business.

REFERENCES

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