Professor Barry O'Sullivan, BTech(UL), PhD(NUI), FECCAI

Director, INSIGHT Centre for Data Analytics, University College Cork, Ireland
Head of Department, Computer Science, UCC – http://osullivan.ucc.ie

In Brief. Professor Barry O'Sullivan is a Full Professor (Chair of Constraint Programming) in the Department of Computer Science at University College Cork. He became Head of Department, Computer Science, in September 2012. He was the Associate Director of the Cork Constraint Computation Centre since 2005 and assumed the Directorship of the Centre in June 2011. Professor O'Sullivan has been a Science Foundation Ireland (SFI) Principal Investigator since 2006. He was listed amongst the "10 Rising Stars" of Irish Science by Science Foundation Ireland in their 2010 anniversary publication entitled "Celebrating 10 Years of Discovery"; he was the only computer scientist so recognised.[1] He was elected a Fellow of ECCAI, the European Coordinating Committee for Artificial Intelligence, and a Senior Member of AAAI, the Association for the Advancement of Artificial Intelligence, in 2012. Professor O'Sullivan is a past winner of the Post-Enrollment Course Timetabling track at the 2007 International Timetabling Competition; overall winner of the 2008 International CSP Solver Competition; winner of the 2007 IEEE Ramamoorthy Award. In 2011 he was a finalist in the ROADEF/Euro Challenge during which his group developed an optimisation technology for managing EDFs national energy network in France. He was, again, a finalist in the 2012 ROADEF/Euro Challenge, where his team was overall runner-up.

In 2010 he was honoured by being the first Irish scientist to give an Invited Talk at AAAI, the annual conference of the Association for the Advancement of Artificial Intelligence. He is serves the International, European and Irish research communities in through several senior roles as current: Past President of the International Association for Constraint Programming; Chair of the Artificial Intelligence Association of Ireland; Coordinator of the European Research Consortium for Informatics and Mathematics (ERCIM) Working Group on Constraints; and Council Member, Analytics Society of Ireland.

The Cork Constraint Computation Centre (4C) is one of the most successful SFI-funded labs in Ireland. The centre has worked in collaboration and technology transfer with dozens of Irish and international companies. In the period 2009-2010 two startup companies were incorporated to commercialise research at 4C: one was acquired by a US multi-national in 2012 and the other closed a significant venture capital round in the same year. 4C has almost 60 members, including academic staff, research scientists, post-doctoral research staff, research students, and administrative staff.

Leadership Achievements.

- Head of Department, Computer Science, University College Cork.
- Director of the Science Foundation Ireland-funded INSIGHT Centre for Data Analytics – launched in July 2013 (approx. €80 million budget over six years);
- Director, Cork Constraint Computation Centre (4C), a leading laboratory focused on constraint programming and its applications, with around 60 members, an annual budget of around €2.5 million, both figures scheduled to increase, and with total funding awards of approximately €50 million since 2001. New awards in 2011, when Professor O'Sullivan became Director, reached €5.4 million.
- Professor O'Sullivan has been involved in winning around €140 million in research funding, of which approximately €25 million has been directly his.
- Past President, Association of Constraint Programming (ACP); Chairman, Artificial Intelligence Association of Ireland, which represents the Irish AI community at ECCAI; Coordinator, ERCIM Working Group on Constraints;
- Founding co-PI on the Enterprise Ireland Technology Centre for Data Analytics – CeADAR, the Centre for Applied Data Analytics Research (launched 2013);
- Assisted in the establishment of EMC Research Europe.[2]
- IJCAI 2013, AAAI 2012, ECAI 2012: Area Chair for Constraint Programming
- Co-Programme Chair, 2012 International Conference on Computational Sustainability.[3]
- SICSA Distinguished Visiting Fellow at St. Andrews University, Edinburgh University, University of Glasgow, and Dundee University.

[1] http://www.sfi.ie/assets/files/downloads/NewsandEvents/Events/sfi_10_years_of_discovery.pdf
[2] http://uk.emc.com/about/news/press/uk/2011/04042011-emc-expands.htm
[3] http://www.computational-sustainability.org/compsust12

Research Funding I list my funding history below, including only those projects with signed contracts as of 30th April 2013. On the right-hand side I indicate the amount of funding under my direct control. In some cases, e.g. SFI CSET and PI Awards, the total award might be larger so I also note the full amount on the left. I break out grants by the year of their start-date and summarise by three year periods with a total figure in bold on the right side of the page, with an overall summary statistics given at the beginning. Unless otherwise stated, I am a/the Principal Investigator.

Total value of research grants I have been involved in (2001-2013): €140 million
Total funding under my direct control (2001-2013): €25 million

2013

1. INSIGHT Centre for Data Analytics — €16.5 million
   Science Foundation Ireland Research Centre
   Other Partners: University College Dublin
   Dublin City University, National University of Ireland Galway
   Total Award: €80 million (approx)

2. Centre for Applied Data Analytics Research (CeADAR) — €240,418
   Enterprise Ireland Technology Centre for Data Analytics
   Other partners: University College Dublin,
   Dublin Institute of Technology; **Total Award: €900,000**

3. Globally optimized ENergy efficient data Centres (GENIC) — €499,200
   European Union FP7 ICT-2013.6.2 Collaborative Project
   Other Partners: Cork Institute of Technology (IRL),
   United Technologies Research Centre (IRL),
   IBM Research GmbH (CH), Acciona Infrastructuras (ES),
   ATOS Spain SA (ES), Technical University of Eindhoven (NL);
   Total Award: €3,295,835

2010-2012

4. The Distributed Core for Unlimited Bandwidth Supply for all Users & Services (DISCUS) — €569,892
   European Union FP7-ICT-2011-8 Integrated Project
   Other Partners: Trinity College Dublin (IRL), Alcatel Lucent (DE),
   Nokia-Siemens Networks (DE), Telefonica (ES), Telecom Italia (IT),
   Swansea University (UK), IMEC (BE), II-V Lab (FR), Polatis (UK),
   Tyndall National Institute (IRL), Kungliga Tekniska Hoegskolan (SE)
   November 2012 – October 2015; **Total Award: €8,096,604**

5. Interoperable Monitoring, Diagnosis, and Maintenance Strategies for Axle Bearings (MAXBE) — €147,606
   European Union FP7-SST-2012-RTD-1 Collaborative Project
   Other Partners: Universidade do Porto (PT), Rede Ferroviria Nacional (PT),
   Ansaldo (IT), Technische Universitaet Braunschweig (DE), COMSA SA (ES),
   EVOLEO Technologies (PT), Nuevas Estratégias de Mantenimiento (ES),
   MERMEC (IT), SKF Industrie SPA (IT), Instituto Superior Tcnico (PT),
   Dynamics, Structures and Systems International (BE),
   Vlaamse Vervoersmaatschappij De Lijn (BE), EMEF (PT),
   I-MOSS (BE), KRESTOS (UK), University of Birmingham (UK)
   November 2012 – October 2015; **Total Award: €3,000,000**

6. Autonomic Home-Area-Network Infrastructure (AUTHENTIC) — €156,744
   University College Dublin, Cork Institute of Technology,
   Tyndall National Institute
   September 2012 – September 2013; **Total Award: €542,858**

7. Inductive Constraint Programming (ICON) — €493,500
   European Union FP7-ICT-2011 FET Open (Scored 15/15 in review)

Other Partners: KU Leuven, Univerity of Pisa, LIRMM Montpellier
January 2012 – December 2014; **Total Award: €1,818,012**

8. Engineering the POlicy-making LIfe CYcle (e -POLICY) — €359,000
European Union FP7-ICT-2011-7 (Ranked in the top 6% of proposals)
Partners: Universita di Bologna (Italy), Regione Emilia Romagna (Italy), PPA Energy (UK), INESC Porto (Portugal), ASTER (Italy), Fraunhofer Institute (Germany), Universit di Ferrara (Italy), The University of Surrey (UK)
October 2011 – September 2014; **Total Award: €2,559,162**

9. UTRC Collaborative Research (Access Control) — €121,211
UTRC Ireland; July 2011 – December 2012

10. Constraint-Based Cloud Resource Mobility — €105,875
EMC Ireland; July 2011 – June 2012

11. Centre for Telecommunications Value-Chain Research II — €810,243
Science Foundation Ireland; (Funded Investigator)
June 2011 – May 2016; **Total Award: €15,022,735**

12. New Paradigms in Constraint Programming: Applications in Data Centres — €1,058,356
Science Foundation Ireland; April 2011 – March 2015

13. Timetabling for the Health Services Executive — €145,623
Science Foundation Ireland; January 2011 – June 2012

14. Network Optimisation for Dynamic Transparent Optical Networks — €79,280
IRCSET and Bell Labs Ireland; February 2011 – January 2013

15. Study the Convergence and Co-existence of Energy information Networks — €25,000
Enterprise Ireland; February 2011 – April 2011

16. Optimisation of Commercial Buildings — €6,905
Enterprise Ireland; February 2011 – April 2011

17. Home-Area Network Energy Management System — €7,577
Enterprise Ireland; February 2011 – April 2011

18. Guided Selling — €145,000
Unum Ireland; January 2011 – April 2012

2007-2009

19. The Centre for Telecommunications Value-Chain Research-II (Interim) — €126,820
Science Foundation Ireland CSET 08/CE/1523 (Funded Investigator)
October 2009 – March 2011, **Total award: €2,658,496**

20. Learning to Detect and Exploit Structure in Real-world Problems — €72,009
IRCSET PhD Fellowship (Mentor); October 2008 – September 2011

21. Approximate Compilation of Flexible Constraints — €2,500
Royal Irish Academy Ulysess Award
Collaborator: Dr. Helene Fargier, IRIT, Toulouse, France
March 2008 – March 2010

22. High Performance Constraint-based Placement and Routing for EDA — €4,680
Science Foundation Ireland UREKA Award
June 2008 – August 2008

23. Algorithmic Decision Theory — €5,000
European Science Foundation COST Action IC0602 (Irish National Rep.)
July 2007 – June 2010

24. Personalisation & Context-Aware Telecoms — €188,595
IRCSET Enterprise Partnership
Collaborator: Dr. David Lesaint, British Telecom
March 2007 – March 2010

25. Constraint Programming for Telecoms Personalisation — €188,595
IRCSET Enterprise Partnership
Collaborator: Dr. David Lesaint, British Telecom
January 2007 – January 2010

26. Robust & Expressive Combinatorial Auctions for Procurement — €443,413
Enterprise Ireland Technology Development Grant
January 2007 – December 2009

27. Visual Techniques for the Analysis of Constraint Programming Models — €96,300
IRCSET Post-doc Fellowship (Mentor)
January 2007 – January 2009

28. High Performance Computer Cluster — €120,000
Science Foundation Ireland Equipment Award 2007

29. Creating Safe, Mobile & Scalable Embedded and Robotic Networks — €59,403
Science Foundation Ireland ETS Walton Award (Host)
Visitor: Professor Brian C. Williams, MIT
June 2007 – May 2008

2004-2006

30. Employing AI to Make CP Easier to use for Decision Making — €1,200,000
Science Foundation Ireland Principal Investigator Award 05/IN/1886
Co-PI with Eugene Freuder
November 2006 – October 2010, **Total award: €3,379,162**

31. A Taxonomy of Global Constraints — €96,300
IRCSET Post-doc Fellowship (Mentor)
October 2006 – September 2008

32. Global Constraints for Nogood Propagation — €2,500
Enterprise Ireland Ulysses Programme
Apirl 2006 – March 2007

33. Similarity and Diversity in Constraint Programming — €2,500
Enterprise Ireland International Collaboration Programme
April 2005 – March 2006

34. Automated Constraint Acquisition — €110,000
IRCSET/CNRS Fellowship
April 2005 – March 2007

35. Risk Management for Combinatorial Auctions — €83,400
Enterprise Ireland Proof Of Concept Programme
October 2005 - September 2006

36. The Centre for Telecommunications Value-Chain Research — €409,006
Science Foundation Ireland CSET O3/CE/31405 (Funded Investigator)
Collaborator: Dr. Dan Kilper, Bell Labs, Murray Hill, New Jersey
July 2004 – September 2009, **Total Award: €19,999,812**

Pre-2004

37. Soft Constraints for Interactive Tradeoff Generation — €4,400
Enterprise Ireland International Collaboration Programme
April 2003 - March 2004

38. Interactive Constraint Acquisition — €4,600
Royal Irish Academy Ulysses Visits Scheme
April 2003 - March 2004

39. Variable Information Document Design — €50,000
Xerox Corporation USA University Associates Programme
October 2002 - September 2005

40. Tradeoff Generation for Interactive Constraint Satisfaction — €150,000
Enterprise Ireland Basic Research Grant Scheme
October 2002 – September 2005

41. Award from Cadcoevolution.com, Cork, Ireland — €10,000
October 2002 - September 2003

42. Interactive Constraint-Aided Conceptual Design — €97,000
Enterprise Ireland Research Innovation Fund
April 2001 - September 2003

43. Constraint Acquisition — €5,700
Enterprise Ireland International Collaboration Programme
April 2001 - March 2002

Publications. My publications have appeared in prestigious journals such as the Journal of the ACM, the Journal of Artificial Intelligence Research, the Journal of Discrete Applied Mathematics, the Constraints Journal, Annals of Operations Research, the Journal of Computer Security, and AI EDAM. Some highlights are that I have published: 29 times at CP, the top ranking Constraint Programming conference; 10 times at AAAI, the top ranking AI conference in the USA; 7 times at IJCAI, the top ranking AI conference in the world; 5 times at ECAI, the top ranking AI conference in Europe.

Journals

1. Daniel Marx, Barry O'Sullivan, and Igor Razgon. Finding Small Separators in Linear-time via Treewidth Reduction. ACM Transactions on Algorithms, 2012 (in press)

2. A Shortest Path-based Approach to the Multileaf Collimator Sequencing Problem. Hadrien Cambazard, Eoin O'Mahony , Barry O'Sullivan. Discrete Applied Mathematics 160(1-2): 81-99 (2012).

3. Local Search and Constraint Programming for the Post Enrolment-based Course Timetabling Problem. Hadrien Cambazard, Emmanuel Hebrard, Barry O'Sullivan and Alexandre Papadopoulos. Annals of Operations Research, 194(1): 111-135 (2012).

4. Reasoning about conditional constraint specification problems and feature models. Raphael A. Finkel, Barry O'Sullivan. AI EDAM 25(2): 163-174 (2011)

5. Domino Portrait Generation: A Fast and Scalable Approach. Hadrien Cambazard, John Horan, Eoin O'Mahony and Barry O'Sullivan. Annals OR 184(1): 79-95 (2011).

6. Soft Constraints of Difference and Equality. Emmanuel Hebrard, Dniel Marx, Barry O'Sullivan, Igor Razgon. Journal of Artificial Intelligence Research (JAIR) 41: 97-130 (2011)

7. Developing Approaches for Solving a Telecommunications Feature Subscription Problem. David Lesaint, Deepak Mehta, Barry O'Sullivan, Luis Quesada and Nic Wilson. Journal of Artificial Intelligence Research (JAIR), 38: 271-305 (2010).

8. Semiring-based Frameworks for Trust Propagation in Small-World Networks and Coalition Formation Criteria. Stefano Bistarelli, Simon Foley, Barry O'Sullivan and Francesco Santini. Journal of Security and Communication Networks 3(6): 595-610 (2010).

9. Almost 2-SAT is fixed-parameter tractable. Igor Razgon, Barry O'Sullivan. Journal of Computer and System Science. 75(8): 435-450 (2009)

10. A Constraint-Based Approach to Enigma 1225. Hadrien Cambazard, Barry O'Sullivan and Barbara M. Smith. Journal of Computers and Mathematics with Applications, 58(8): 1487-1497 (2009).

11. An FPT Algorithm for Directed Feedback Vertex Set. Jianer Chen, Yang Liu, Songjian Lu, Barry O'Sullivan and Igor Razgon. Journal of the ACM (JACM), Vol 55, 2008

12. Reformulating Table Constraints using Functional Dependencies - An Application to Explanation Generation. Hadrien Cambazard and Barry O'Sullivan. Constraints Journal, 2008, Vol 13, Issue 3, pp 385-406

13. A Unifying Framework for Generalized Constraint Learning. Xuan-Ha Vu and Barry O'Sullivan. International Journal on Artificial Intelligence Tools, 2008,Vol 17, ISS 5, pp 803-833

14. Explanation in Product Configuration. Albert Haag, Ulrich Junker and Barry O'Sullivan. IEEE Intelligent Systems, January/February 2007.

15. The Impact of Search Heuristics on Heavy-Tailed Behaviour. Tudor Hulubei and Barry O'Sullivan. Constraints Journal, Volume 11, Issue 2-3, 2006, pp 159-178

16. A Soft Constraint-based Approach to the Cascade Vulnerability Problem. Stefano Bistarelli, Simon N. Foley and Barry O'Sullivan. Journal of Computer Security, Volume 13, Issue 5, pp. 699-720, 2005.

17. Towards Fast Vickrey-Pricing using Constraint Programming. Alan Holland and Barry O'Sullivan. Artificial Intelligence Review, Volume 21, Issue 3-4, pp 335-352, 2004.

18. Interactive Constraint-Aided Conceptual Design. Barry O'Sullivan. Artificial Intelligence for Engineering Design, Analysis and Manufacturing (AIEDAM), Vol.16, Issue 4, pp.303-328, 2002.

19. The Design Advisor: Capturing Design Practices and RFI/EMI Concerns. Barry O'Sullivan. Board Authority, Vol.2, No.4, pp 24-27, December 2000.

Books

20. Recent Advances in Constraints - 14th Annual ERCIM International Workshop on Constraint Solving and Constraint Logic Programming, CSCLP 2009, Barcelona, Spain, June 15-17, 2009, Revised Selected Papers, Javier Larrosa, Barry O'Sullivan, Lecture Notes in Computer Science 6384 Springer 2011

21. Trends in Constraint Programming. Frederic Benhamou, Narendra Jussien and Barry O'Sullivan (eds.). Hermes Science Publications, 2007.

22. Recent Advances in Constraints. Barry O'Sullivan (ed.). Springer Lecture Notes in Artificial Intelligence, Vol.2627, 2003.

23. Constraint-Aided Conceptual Design. Barry O'Sullivan. Professional Engineering Publishing, Suffolk, UK, ISBN: 1-86058-335-0, December 2001.

Book Chapters

24. Case-Based Reasoning for Autonomous Constraint Search. Derek Bridge, Eoin O'Mahony and Barry O'Sullivan. Autonomous Search, accepted.

25. The Next 10 Years of Constraint Programming. Lucas Bordeaux, Barry O'Sullivan and Pascal Van Hentenryck (eds.). Chapter 3, Trends in Constraint Programming, Hermes Science Publications, 2007.

Journal Special Issues Edited

26. Special Issue: Constraints and Design. Barry O'Sullivan. AIEDAM Journal, Volume 20, Number 4, November 2006, pp 295

27. Introduction to the Special Issue of the 11th International Conference on Principles and Practice of Constraint Programming. Barry O'Sullivan and Peter van Beek. Constraints Journal, Volume 11, Issue 2-3, 2006,pp 83-84

28. Introduction to the Special Issue on User-Interaction in Constratint Satisfaction. Barry O'Sullivan. Constraints Journal, Volume 9, Number 4, pp 123-137 October 2004.

Conference Proceedings (Editorship)

29. Proceedings of the 1st Workshop on Combining Constraint Solving with Mining and Learning. Remi Coletta, Tias Guns, Barry O'Sullivan, Andrea Passerini, Guido Tack (editors). ECAI Workshop Proceedings, 2012.

30. Proceedings of the 1st Workshop on Artificial Intelligence for Telecommunications & Sensor Networks.. Ken Brown, Barry O'Sullivan, and Cormac Sreenan (editors). ECAI Workshop Proceedings, 2012.

31. Proceedings of the 1st AAAI Workshop on Artificial Intelligence for Data Centre Management and Cloud Computing. Barry O'Sullivan, Donagh Buckley, and Burt Kaliski (editors). AAAI Press, 2011.

32. Proceedings of the 19th Irish Conference on Artificial Intelligence and Cognitive Science. Derek Bridge, Ken Brown, Barry O'Sullivan and Humphrey Sorensen (editors). University College Cork, August 2008.

33. Proceedings of the AAAI Workshop on Configuration. Barry O'Sullivan and Klas Orsvarn (eds.). Workshop Programme of AAAI-2007, AAAI Technical Report WS07-03, July 2007

34. Proceedings of the First International Workshop on Applications of Constraint Satisfaction and Programming to Computer Security Problems. Giampaolo Bella, Stefano Bistarelli, Simon N. Foley and Barry O'Sullivan (editors). Held alongside CP-2005, October 2005

35. Proceedings of the First International Workshop on Constraints and Design. Laurent Granvilliers and Barry O'Sullivan (editors). Held alongside CP-2005, October 2005

36. Proceedings of the Second International Workshop on User-Interaction in Constraint Satisfaction. Barry O'Sullivan, Eugene C. Freuder (eds.). In association with the Eight International Conference on Principles and Practice of Constraint Programming - CP 2002, Ithaca, New York, September, 2002.

37. Proceedings of the Joint ERCIM CologNet Workshop on Constraint Solving and Constraint Logic Programming. Krzysztof R. Apt, Francois Fages, Eugene Freuder, Barry O'Sullivan, Francesca Rossi and Toby Walsh (eds.). Cork Constraint Computation Centre (4C), University College Cork, Ireland, 19th-21st June 2002.

38. Proceedings of the First International Workshop on User-Interaction in Constraint Satisfaction. Barry O'Sullivan, Eugene C. Freuder (eds.). In association with the Seventh International Conference on Principles and Practice of Constraint Programming - CP 2001, Paphos, Cyprus, December 1st, 2001.

39. Procs of the 10th Irish Conference on Artificial Intelligence & Cognitive Science (AICS'99). Derek Bridge, Ruth Byrne, Barry O'Sullivan, Steven Prestwich and Humphrey Sorensen (eds.). Department of Computer Science, University College Cork, September 1999, ISBN 0-9536826-0-9.

Papers Formally Published in a Peer-Reviewed Proceedings

40. Deepak Mehta, Barry O'Sullivan, and Helmut Simonis. Comparing Solution Methods for the Machine Reassignment Problem. Proceedings of CP 2012, Springer LNCS, 2012.

41. Georgiana Ifrim, Barry O'Sullivan, and Helmut Simonis. Energy-Cost Forecasting for Scheduling. Proceedings of CP 2012, Springer LNCS, 2012.

42. Ignacio Castineiras, Milan De Cauwer, and Barry O'Sullivan. Weibull-based Benchmarks for Bin Packing. Proceedings of CP 2012, Springer LNCS, 2012.

43. Barry O'Sullivan. Opportunities and Challenges for Constraint Programming. Proceedings of AAAI 2012, Invited Spotlight Paper.

44. Barry Hurley and Barry O'Sullivan. Adaptation in a CBR-based Solver Portfolio for the Satisfiability Problem. Proceedings of ICCBR 2012, Springer LNCS, 2012.

45. Michela Milano, Marco Gavanelli, Barry O'Sullivan, Alan Holland. What-If Analysis through Simulation-Optimization Hybrids. Proceedings of the 26th European Conference on Modelling and Simulation, Koblenz, Germany.

46. Marco Ruffini, Deepak Mehta, Barry O'Sullivan, Luis Quesada, Linda Doyle, David B. Payne. Deployment case studies of an energy efficient protected LR-PON architecture. Proceedings of ONDM 2012. Apr 2012.

47. Marco Rufini, Deepak Mehta, Barry O'Sullivan, Luis Quesada, Linda Doyle, David B. Payne. Deployment Strategies for Protected Long-Reach PON. IEEE/OSA Journal of Optical Communications and Networking, vol.4, Issue 2, p118 - 129, Jan 2012.

48. Hadrien Cambazard, Deepak Mehta, Barry O'Sullivan, Luis Quesada: A Computational Geometry-Based Local Search Algorithm for Planar Location Problems. CPAIOR 2012: 97-112

49. Value Ordering for Finding All Solutions: Interactions with Adaptive Variable Ordering. Deepak Mehta, Barry O'Sullivan, Luis Quesada. CP 2011: 606-620

50. Almost Square Packing. Helmut Simonis, Barry O'Sullivan. CPAIOR 2011: 196-209

51. Designing Resilient Long-Reach Passive Optical Networks. Deepak Mehta, Barry O'Sullivan, Luis Quesada, Marco Ruffini, David Payne, Linda Doyle. IAAI 2011

52. A Combinatorial Optimisation Approach to the Design of Dual Parented Long-Reach Passive Optical Networks. Hadrien Cambazard, Deepak Mehta, Barry O'Sullivan, Luis Quesada, Marco Ruffini, David Payne, Linda Doyle. ICTAI 2011: 785-792

53. An Introduction to Constraint Programming and Combinatorial Optimisation. Barry O'Sullivan Reasoning Web 2011: 534

54. Optimal stopping methods for finding high quality solutions to satisfiability problems with preferences. Emanuele Di Rosa, Enrico Giunchiglia, Barry O'Sullivan. SAC 2011: 901-906

55. Constraint Programming meets Machine Learning and Data Mining (Dagstuhl Seminar 11201). Luc De Raedt, Siegfried Nijssen, Barry O'Sullivan, Pascal Van Hentenryck. Dagstuhl Reports 1(5): 61-83 (2011)

56. Automated Modelling and Solving in Constraint Programming. Barry O'Sullivan. AAAI 2010

57. Propagating the Bin Packing Constraint Using Linear Programming. Hadrien Cambazard, Barry O'Sullivan. CP 2010: 129-136

58. Context-Sensitive Call Control Using Constraints and Rules. David Lesaint, Deepak Mehta, Barry O'Sullivan, Luis Quesada, Nic Wilson. CP 2010: 583-597

59. Constraint Programming and Combinatorial Optimisation in Numberjack. Emmanuel Hebrard, Eoin O'Mahony, Barry O'Sullivan CPAIOR 2010: 181-185

60. Hybrid Methods for the Multileaf Collimator Sequencing Problem. Hadrien Cambazard, Eoin O'Mahony, Barry O'Sullivan. CPAIOR 2010: 56-70

61. Improving the Global Constraint SoftPrec. David Lesaint, Deepak Mehta, Barry O'Sullivan, Luis Quesada, Nic Wilson. ECAI 2010: 1061-1062

62. Compilation for Itemset Mining. Hadrien Cambazard, Tarik Hadzic, Barry O'Sullivan. ECAI 2010: 1109-1110

63. Data Mining for Biodiversity Prediction in Forests. Barry O'Sullivan, Steven Keady, Enda Keane, Sandra Irwin, John O'Halloran. ECAI 2010: 289-294

64. Preferred Explanations for Quantified Constraint Satisfaction Problems. Deepak Mehta, Barry O'Sullivan, Luis Quesada. ICTAI (1) 2010: 275-278

65. Treewidth Reduction for Constrained Separation and Bipartization Problems. Dniel Marx, Barry O'Sullivan, Igor Razgon. STACS 2010: 561-572

66. Aggregating Trust Using Triangular Norms in the KeyNote Trust Management System. Simon N. Foley, Wayne Mac Adams, Barry O'Sullivan. STM 2010: 100-115

67. Context-Sensitive Call Control using Constraints and Rules. David Lesaint, Deepak Mehta, Barry O'Sullivan, Nic Wilson and Luis Quesada.
Submitted to CP 2010

68. Preferred Explanations for Quantified Constraint Satisfaction Problems. Deepak Mehta, Barry O'Sullivan and Luis Quesada.
Submitted to CP 2010

69. Propagating the Bin Packing Constraint using Linear Programming. Hadrien Cambazard and Barry O'Sullivan. Submitted to CP 2010

70. Automated Modelling and Solving in Constraint Programming. Barry O'Sullivan. Proceedings of AAAI-2010, AAAI Press, to appear.

71. Knowledge Compilation for Itemset Mining. Hadrien Cambazard, Tarik Hadzic, and Barry O'Sullivan. Proceedings of ECAI-2010, IOS Press, to appear.

72. Improving the Global Constraint `SoftPrec`. Deepak Mehta, Barry O'Sullivan, Luis Quesada, and Nic Wilson. Proceedings of ECAI-2010, IOS Press, to appear.

73. Timetabling a University Dental School. Hadrien Cambazard, Barry O'Sullivan, and John Sisk. Proceedings of PATAT-2010, 2010, to appear.

74. Hybrid Methods for the Multileaf Collimator Sequencing. Hadrien Cambazard, Eoin O'Mahony and Barry O'Sullivan. Proceedings of CPAIOR-2010, Springer, to appear

75. Constraint Programming and Combinatorial Optimisation in Numberjack. Emmanuel Hebrard, Eoin O'Mahony and Barry O'Sullivan. Proceedings of CPAIOR-2010, Springer, to appear

76. Treewidth Reduction for Constrained Separation and Bipartization Problems. Dániel Marx, Barry O'Sullivan, Igor Razgon: Proceeings of STACS 2010: 561-572

77. Minimising Decision Tree Size as Combinatorial Optimisation. Christian Bessiere, Emmanuel Hebrard, Barry O'Sullivan. CP 2009: 173-187.

78. Reasoning about Optimal Collections of Solutions. Tarik Hadzic, Alan Holland, Barry O'Sullivan. CP 2009: 409-423

79. Constraints of Difference and Equality: A Complete Taxonomic Characterisation. Emmanuel Hebrard, Dniel Marx, Barry O'Sullivan, Igor Razgon. CP 2009: 424-438

80. Deepak Mehta, Barry O'Sullivan, Luis Quesada, Nic Wilson. Search Space Extraction. CP 2009: 608-622

81. Compiling All Possible Conflicts of a CSP. Alexandre Papadopoulos, Barry O'Sullivan. CP 2009: 639-653

82. A Shortest Path-Based Approach to the Multileaf Collimator Sequencing Problem. Hadrien Cambazard, Eoin O'Mahony, Barry O'Sullivan. CPAIOR 2009: 41-55

83. Towards Diverse Relaxations of Over-Constrained Models. John Horan, Barry O'Sullivan. ICTAI 2009: 198-205

84. Reasoning about Conditional Constraint Specifications. Raphael A. Finkel, Barry O'Sullivan. ICTAI 2009: 349-353

85. Preferential Attachment in Constraint Networks. David Devlin, Barry O'Sullivan. ICTAI 2009: 708-715

86. Enhanced Inference for the Market Split Problem. Tarik Hadzic, Eoin O'Mahony, Barry O'Sullivan, Meinolf Sellmann. ICTAI 2009: 716-723

87. A Soft Global Precedence Constraint. David Lesaint, Deepak Mehta, Barry O'Sullivan, Luis Quesada, Nic Wilson. IJCAI 2009: 566-571

88. Uncovering functional dependencies in MDD-compiled product catalogues. Tarik Hadzic, Barry O'Sullivan. RecSys 2009: 377-380

89. Personalisation of Telecommunications Services as Combinatorial Optimisation. David Lesaint, Deepak Mehta, Barry O'Sullivan, Luis Quesada, Nic Wilson. AAAI 2008: 1693-1698

90. A Hybrid Approach to Domino Portrait Generation. Hadrien Cambazard, John Horan, Eoin O'Mahony, Barry O'Sullivan. AAAI 2008: 1874-1875

91. A Soft Constraint of Equality: Complexity and Approximability. Emmanuel Hebrard, Barry O'Sullivan, Igor Razgon. CP 2008: 358-371

92. Reformulating Positive Table Constraints Using Functional Dependencies. Hadrien Cambazard, Barry O'Sullivan. CP 2008: 418-432

93. Relaxations for Compiled Over-Constrained Problems. Alexandre Papadopoulos, Barry O'Sullivan. CP 2008: 433-447

94. Approximate Compilation of Constraints into Multivalued Decision Diagrams. Tarik Hadzic, John N. Hooker, Barry O'Sullivan, Peter Tiedemann. CP 2008: 448-462

95. Search Strategies for Rectangle Packing. Helmut Simonis, Barry O'Sullivan. CP 2008: 52-66

96. Solving a Telecommunications Feature Subscription Configuration Problem. David Lesaint, Deepak Mehta, Barry O'Sullivan, Luis Quesada, Nic Wilson. CP 2008: 67-81

97. Fast and Scalable Domino Portrait Generation. Hadrien Cambazard, John Horan, Eoin O'Mahony, Barry O'Sullivan. CPAIOR 2008: 51-65

98. From Marriages to Coalitions: A Soft CSP Approach. Stefano Bistarelli, Simon N. Foley, Barry O'Sullivan, Francesco Santini. CSCLP 2008: 1-15

99. A BDD Approach to the Feature Subscription Problem. Tarik Hadzic, David Lesaint, Deepak Mehta, Barry O'Sullivan, Luis Quesada, Nic Wilson. ECAI 2008: 698-702

100. Almost 2-SAT Is Fixed-Parameter Tractable. Igor Razgon, Barry O'Sullivan. ICALP (1) 2008: 551-562

101. Layer Compression in Decision Diagrams. Tarik Hadzic, Esben Rune Hansen, Barry O'Sullivan. ICTAI (1) 2008: 19-26

102. Consistency Techniques for Finding an Optimal Relaxation of a Feature Subscription. David Lesaint, Deepak Mehta, Barry O'Sullivan, Luis Quesada, Nic Wilson. ICTAI (1) 2008: 283-290

103. Critique graphs for catalogue navigation. Tarik Hadzic, Barry O'Sullivan. RecSys 2008: 115-122

104. A fixed-parameter algorithm for the directed feedback vertex set problem. Jianer Chen, Yang Liu, Songjian Lu, Barry O'Sullivan, Igor Razgon. STOC 2008: 177-186

105. Impact of Wavelength Route Correlation on the Optimal Placement of Optical Monitors in Transparent Mesh Networks. Alex Ferguson, Barry O'Sullivan, Daniel C. Kilper. Proceedings of the European Conference on Optical Communications (ECOC), September 2008.

106. Satisfiability as a Classification Problem. David Devlin, Barry O'Sullivan. Proceedings of the 19th Conference on Artificial Intelligence and Cognitive Science, August 2008.

107. Using Case-based Reasoning in an Algorithm Portfolio for Constraint Solving. Eoin O'Mahony, Emmanuel Hebrard, Alan Holland, Conor Nugent and Barry O'Sullivan. Proceedings of the 19th Conference on Artificial Intelligence and Cognitive Science, August 2008.

108. Towards Category Management for Combinatorial Auctions. Chenjie Zhu, Alan Holland and Barry O'Sullivan. Proceedings of the 19th Conference on Artificial Intelligence and Cognitive Science, August 2008.

109. Local Search and Constraint Programming for the Post-Enrolment-based Course Timetabling Problem . Hadrien Cambazard, Emmanuel Hebrard, Barry O'Sullivan and Alexandre Papadopoulos. Proceedings of PATAT 2008, August 2008. Describes our winning entry for the 2007 International Timetabling Competition (Track 2).

110. A BDD Approach to the Feature Subscription Problem. Tarik Hadzic, David Lesaint, Deepak Mehta, Barry O'Sullivan, Luis Quesada and Nic Wilson. Proceedings of Prestigous Applications of Intelligent Systems (PAIS) 2008, pp.698-702.

111. A Hybrid Approach to Domino Portrait Generation. Hadrien Cambazard, John Horan, Eoin O'Mahony and Barry O'Sullivan. Proceedings of AAAI-2007 (Intelligent Systems Demonstration), pp 1874-1875

112. Personalisation of Telecommunications Services as Combinatorial Optimisation. David Lesaint, Deepak Mehta, Barry O'Sullivan, Luis Quesada, Nic Wilson. Proceedings of Innovative Applications of Artificial Intelligence (IAAI) 2008, July 2008, pp 1693-1698

113. Almost 2-SAT is Fixed-Parameter Tractable. Igor Razgon and Barry O'Sullivan. Proceedings of the 35th International Colloquium on Automata, Languages and Programming (ICALP), July 2008, pp 551-562

114. Generalizing Global Constraints Based on Network Flows. Igor Razgon, Barry O'Sullivan and Gregory M. Provan. Recent Advances in Constraints, pp.127-141.

115. Fast and Scalable Domino Portrait Generation. Hadrien Cambazard, John Horan, Eoin O'Mahony and Barry O'Sullivan. Proceedings of CP-AI-OR 2008, pp.51-65.

116. A Fixed-Parameter Algorithm for the Directed Feedback Vertex Set Problem. Jianer Chen, Yang Liu, Songjian Lu, Barry O'Sullivan and Igor Razgon. Proceedings of 40th Annual ACM Symposium on Theory of Computing (STOC 2008), May 2008. Ranked amongst the best papers of the conference. Invited for a Special Issue of SIAM Journal on Computing.

117. Transparent Path Length Optimized Optical Monitor Placement in Transparent Mesh Networks. Alex Ferguson, Barry O'Sullivan, Daniel C. Kilper. Optical Fiber Communication (OFC) Conference, February 2008. This work will form the base of an invited paper at OFC 2009.

118. Semiring-based Constraint Acquisition. Xuan Ha Vu and Barry O'Sullivan. Proceedings of ICTAI-2007, October 2007.vol 1, pp 251-258, Awarded the IEEE ICTAI Ramamoorthy Award for best paper.

119. Constraint Symmetry for the Soft CSP. Barbara M. Smith, Stefano Bistarelli and Barry O'Sullivan. Proceedings of CP 2007, Short paper, September 2007, pp 872-879

120. Finding the Most Satisfiable Maximal Relaxation in Over-Constrained Problems. Alexandre Papadopoulos and Barry O'Sullivan. Proceedings of AICS-2007, August 2007.

121. Automated Constraint Reformulation for Explanation. Hadrien Cambazard and Barry O'Sullivan. Proceedings of AICS-2007, August 2007. Awarded the best paper prize (sponsored by Google).

122. ConfigLab: A Conceptual Design Tool with Corrective Explanations Supported by Sketch-Based Design Reuse. Noel Titus, Barry O'Sullivan and Karthik Ramani. Proceedings of ICED-2007, August 2007.

123. Representative Explanations for Over-Constrained Problems. Barry O'Sullivan, Alexandre Papadopoulos, Boi Faltings, Pearl Pu. Proceedings of AAAI-2007, July 2007, pp 323-328

124. Generating and Solving Logic Puzzles through Constraint Satisfaction. Barry O'Sullivan and John Horan. Proceedings of AAAI-2007 (Intelligent Systems Demonstration), July 2007, pp 1974-1975

125. Generalised Constraint Acquisition. Xuan Ha Vu and Barry O'Sullivan. Proceedings of SARA-2007 (Research Summary), July 2007, pp 411-412

126. A Reformulation-based Approach to Explanation in Constraint Satisfaction. Hadrien Cambazard and Barry O'Sullivan. Proceedings of SARA-2007 (Research Summary), July 2007,pp 395-396

127. Efficient Recognition of Acyclic Clustered Constraint Satisfaction Problems. Igor Razgon and Barry O'Sullivan. Recent Advances in Constraints, LNAI, Springer 2007, pp 154-168

128. Quantified Constraint Satisfaction: From Relaxations to Explanations. Alex Ferguson and Barry O'Sullivan. Proceedings of IJCAI-2007, January 2007.

129. Distance Constraints in Constraint Satisfaction. Emmanuel Hebrard, Barry O'Sullivan, Toby Walsh. Proceedings of IJCAI-2007, January 2007, pp106-111

130. Query-driven Constraint Acquisition. Christian Bessiere, Remi Coletta, Barry O'Sullivan and Mathias Paulin. Proceedings of IJCAI-2007, January 2007,pp 74-79

131. Truthful Risk-Managed Combinatorial Auctions. Alan Holland, Barry O'Sullivan. Proceedings of IJCAI-2007, January 2007,pp 1315-1320

132. Conditional Symmetry for the Soft CSP. Barbara M. Smith, Stefano Bistarelli and Barry O'Sullivan. Proceedings of the International Symmetry Conference, January 2007.

133. Principles of Secure Network Configuration: Towards a Formal Basis for Self-Configuration. Simon N. Foley, William Fitzgerald, Stefano Bistarelli, Barry O'Sullivan, Micheal O Foghlu. Proceedings of 6th IEEE International Workshop on IP Operations and Management October 2006,pp 168-180

134. Relaxations and Explanations for Quantified Constraint Satisfaction Problems. Alex Ferguson, Barry O'Sullivan. Proceedings of CP-2006, Short Paper, September 2006, pp 690-694

135. Failure Analysis in Backtrack Search for Constraint Satisfaction. Tudor Hulubei, Barry O'Sullivan. Proceedings of CP-2006, Short Paper, September 2006, pp 731-735

136. Heavy-tailed Runtime Distributions: Heuristics, Models and Optimal Refutations. Tudor Hulubei, Barry O'Sullivan. Proceedings of CP-2006, Short Paper, September 2006, pp 736-740

137. Guiding Search using Constraint-level Advice. Radoslaw Szymanek, Barry O'Sullivan. Proceedings of ECAI-2006, August 2006, pp 158-162

138. Approximate Compilation for Embedded Model-based Reasoning. Barry O'Sullivan and Gregory M. Provan. Proceedings of AAAI-2006, July, 2006

139. Acquiring Constraint Networks using a SAT-based Version Space Algorithm. Christian Bessiere, Remi Coletta, Frederic Koriche and Barry O'Sullivan. Proceedings of AAAI-2006 (Nectar Track), July, 2006

140. A SAT-Based Version Space Algorithm for Acquiring Constraint Satisfaction Problems. Christian Bessiere, Remi Coletta, Frederic Koriche and Barry O'Sullivan. Proceedings of ECML-2005, Springer LNCS, October 2005, pp 445-459

141. Search Heuristics and Heavy-Tailed Behaviour. Tudor Hulubei and Barry O'Sullivan. Proceedings of CP-2005, Springer LNCS, October 2005, pp 328-342, One the top five papers (out of 164 submissions) selected for journal publication.

142. Generating Corrective Explanations for Interactive Constraint Satisfaction. Barry O'Callaghan, Barry O'Sullivan and Eugene C. Freuder. Proceedings of CP-2005, Springer LNCS, October 2005, pp 445-459

143. Multilevel Security and Quality of Protection. Simon Foley, Stefano Bistarelli, Barry O'Sullivan, John Herbert and Garret Swart. Proceedings of Quality of Protection, Springer Advances in Information Security Series. September 2005

144. Optimal Refutations for Constraint Satisfaction Problems. Tudor Hulubei and Barry O'Sullivan. Proceedings of IJCAI-2005, July, 2005, pp 163-168

145. Corrective Explanation for Interactive Constraint Satisfaction. Barry O'Sullivan, Barry O'Callaghan and Eugene C. Freuder. Proceedings of IJCAI-2005, Poster, July, 2005, pp 1531-1532

146. Finding Diverse and Similar Solutions in Constraint Programming. Emmanuel Hebrard, Brahim Hnich, Barry O'Sullivan, Toby Walsh. Proceedings of AAAI-2005, July, 2005

147. Weighted Super Solutions for Constraint Programs. Alan Holland and Barry O'Sullivan. Proceedings of AAAI-2005, July, 2005, pp 378-383

148. Robust Solutions for Combinatorial Auctions. Alan Holland and Barry O'Sullivan. Proceedings of ACM EC-2005, June, 2005, pp 183-192

149. Building Reactive Characters for Dynamic Gaming Environments. Peter Blackburn and Barry O'Sullivan. Proceedings of IEEE Computational Intelligence in Games, IEEE Press, April 2005.

150. Timid Acquisition of Constraint Satisfaction Problems. Sarah O'Connell, Barry O'Sullivan and Eugene C. Freuder. Proceedings of ACM SAC-2005, March 2005, pp 404-408

151. Super Solutions for Combinatorial Auctions. Alan Holland and Barry O'Sullivan. ERCIM CoLogNet International Workshop, CSCLP 2004, Revised Selected and Invited Papers, LNCS 3419, Springer, pp.187-200, 2005

152. Boosting Constraint Satisfaction using Decision Trees. Barry O'Sullivan, Alex Ferguson and Eugene C. Freuder. Proceedings of IEEE ICTAI-2004, IEEE Press, November 2004,pp 646-651

153. Encoding Partial Constraint Satisfaction in the Semiring-based Framework for Soft Constraints. Stefano Bistarelli, Eugene C. Freuder and Barry O'Sullivan. Proceedings of IEEE ICTAI-2004, IEEE Press, November 2004, pp 240-245, ISSN: 1082-3409

154. Leveraging the Learning Power of Examples in Automated Constraint Acquisition. Christian Bessiere, Remi Coletta, Eugene C. Freuder and Barry O'Sullivan. Proceedings of CP-2004, Springer, LNCS 3258, Toronto, September 2004,Vol 110, pp 151-155,2004. ISSN: 0922-6389

155. Boosting Constraint Satisfaction using Decision Trees. Barry O'Sullivan, Alex Ferguson and Eugene C. Freuder. Proceedings of the Irish Conference on Artificial Intelligence and Cognitive Science, Poster Paper, September 2004.

156. Reasoning about Secure Interoperation using Soft Constraints. Stefano Bistarelli, Simon Foley and Barry O'Sullivan. Proceedings of FAST-2004 - Formal Aspects of Security and Trust, Kluwer Academic Publishers, Toulouse, August 2004,pp 173-186

157. Detecting and Eliminating the Cascade Vulnerability Problem from Multi-level Security Networks using Soft Constraints. Stefano Bistarelli, Simon Foley and Barry O'Sullivan. Proceedings of AAAI/IAAI-2004 (16th Innovative Applications of AI Conference), AAAI Press San Jose, USA, July 2004, pp 808-813

158. Supporting Constraint-Aided Conceptual Design from First Principles in Autodesk Inventor. Alan Holland, Barry O'Callaghan and Barry O'Sullivan. Proceedings of IEA/AIE, Springer, LNCS 3029, Canada, May 2004, pp 905-914

159. Tradeoff Generation using Soft Constraints. Stefano Bistarelli, Jerome Kelleher and Barry O'Sullivan. Recent Advances in Constraints, 2003, Springer, LNAI 3010, 2004.

160. Evaluation-Based Semiring Meta-Constraints. Jerome Kelleher and Barry O'Sullivan. Proceedings of MICAI, Springer, LNCS 2972, Mexico, April 2004, pp 179-189

161. Modelling and Detecting the Cascade Vulnerability Problem using Soft Constraints. Stefano Bistarelli, Simon Foley and Barry O'Sullivan. Proceedings of ACM Symposium on Applied Computing (SAC-2004), ACM Press, Nicosia, Cyprus, March 2004, pp 383-390

162. Symmetry Breaking in Soft CSPs. Stefano Bistarelli, Jerome Kelleher and Barry O'Sullivan. Proceedings of AI-2003, Springer, Cambridge, UK, December 2003.

163. A Theoretical Framework for Tradeoff Generation using Soft Constraints. Stefano Bistarelli and Barry O'Sullivan. Proceedings of AI-2003, Springer, Cambridge, UK, December 2003.

164. Constraint Acquisition as Semi-Automatic Modeling. Remi Coletta, Christian Bessiere, Barry O'Sullivan, Eugene C. Freuder, Sarah O'Connell, Joel Quinqueton. Proceedings of AI-2003, Springer, Cambridge, UK, December 2003, pp 111-124

165. Creating Personalized Documents: An Optimization Approach. Lisa Purvis, Steven Harrington, Barry O'Sullivan, Eugene C. Freuder. Proceedings of the ACM Symposium on Document Engineering, Grenoble, France, November 2003, pp 68-77

166. A Constraint-Aided Conceptual Design Environment for Autodesk Inventor. Alan Holland, Barry O'Callaghan, Barry O'Sullivan. Proceedings of CP-2003, LNCS 2833, Springer, Kinsale, Cork, Ireland, September 2003, pp 422-463

167. Semi-Automatic Modeling by Constraint Acquisition. Remi Coletta, Christian Bessiere, Barry O'Sullivan, Eugene C. Freuder, Sarah O'Connell, Joel Quinqueton. Proceedings of CP-2003, Short paper, LNCS 2833, Springer, Kinsale, Cork, Ireland, pp 812-816

168. Computational Efficient Pricing for Resource Providers in a Grid Environment. Alan Holland, Barry O'Sullivan. Proceedings of AICS-2003, Dublin, Ireland.

169. Evaluation-Based Semiring Meta-Constraints. Jerome Kelleher, Barry O'Sullivan. Proceedings of AICS-2003, Poster Paper, Dublin, Ireland.

170. A Study of Query Generation Strategies for Interactive Constraint Acquisition. Sarah O'Connell, Barry O'Sullivan, Eugene C. Freuder. Applications and Science in Soft Computing, Advances in Soft Computing Series, Springer Verlag, 2003, pp 225-232. ISSN: 1615-3871

171. Interactive Constraint Acquisition for Concurrent Engineering. Barry O'Sullivan, Sarah O'Connell, Eugene C. Freuder. Proceedings of the 9th International Conference on Concurrent Enterprising - ICE-2003, June 2003.

172. Moyra Duggan, Barry OSullivan, Eugene C. Freuder: Interactive Tradeoff Generation. Ninth International Principles and Practice of Constraint Satisfaction CP 2003, LNCS 2833, Springer, 970, 2003.

173. Barry OCallaghan, Eugene C. Freuder, Barry OSullivan: Useful Explanations. Ninth International Principles and Practice of Constraint Satisfaction CP 2003, LNCS 2833, Springer, 970, 2003.)

174. Sarah OConnell, Barry OSullivan, Eugene C. Freuder: Teacher and Learner Profiles for Constraint Acquisition. Ninth International Principles and Practice of Constraint Satisfaction CP2003, LNCS 2833, Springer, 989,2003

175. Query Generation for Interactive Constraint Acquisition. Sarah O'Connell, Barry O'Sullivan, Eugene C. Freuder. Proceedings of the 4th International Conference on Recent Advances in Soft Computing - RASC-2002, ISBN: 1-84233-0764, pp.295-300, December 2002.

176. Generating Tradeoffs for Interactive Constraint-Based Configuration. Eugene C. Freuder, Barry O'Sullivan. Seventh International Conference on Principles and Practice of Constraint Programming - CP 2001, pp 590-594, Paphos, Cyprus, November 2001.

177. A New EDA Technology for Enabling Company-Specific Design Advice. Barry O'Sullivan, James Bowen, Alex Ferguson. Proceedings of the User Forum of the Design Automation and Test in Europe Conference Paris, March 2000 pp 197- 201.

178. A New Technology for Enabling Computer-Aided EMC Analysis. Barry O'Sullivan, James Bowen, Alex Ferguson. Workshop on CAD Tools for EMC, Proceedings of EMC York 1999, University of York, UK, July 1999.

179. Knowledge Processing for Timely Decision Making in Design For X. Marcel Tichem, Barry O'Sullivan. Integration of Process Knowledge into Design Support Systems, Enschede, The Netherlands, March 1999, pages 219-228.

180. Supporting the Design of Product Families through Constraint-Based Reasoning. Barry O'Sullivan. Proceedings of the 4th WDK Workshop on Product Structuring, Delft Technical University, The Netherlands, October 1998.

181. Conflict Management and Negotiation for Concurrent Engineering using Pareto Optimality. Barry O'Sullivan. Changing the ways we work: Shaping the ICT-solutions for the Next Century, Advances in Design and Manufacturing Series, Gteborg, Sweden, October 1998, pages 359-368.

182. A Constraint-Based Approach to Supporting Conceptual Design. Barry O'Sullivan, James Bowen. Artificial Intelligence in Design '98, Instituto Superior Tcnico, Lisbon, July 1998, pages 291-308.

183. The Paradox of using Constraints to Support Creativity in Conceptual Design. Barry O'Sullivan. Computer Aided Conceptual Design '98, Lancaster University, May 1998, pages 99-121.

184. A Constraint-Based Support Tool for Early-Stage Design within a Concurrent Engineering Environment. Barry O'Sullivan. Proceedings of the 4th International Conference on Concurrent Enterprising, University of Nottingham, October 1997, pages 119-28.

185. Using Constraint Programming to Simplify the Task of Specifying DFX Guidelines. Marc van Dongen, Barry O'Sullivan, James Bowen, Alex Ferguson and Mike Baggaley. Proceedings of the 4th International Conference on Concurrent Enterprising, University of Nottingham, October 1997, pages 129-138.

186. The Role of Genetic Algorithms in Production Scheduling. Barry O'Sullivan and Huw J. Lewis. Proceedings of the International Conference on Flexible Automation and Integrated Manufacturing, Georgia Institute of Technology, Atlanta, May 1996, pages 790-799.

187. A Genetic Algorithm for Flowshop Scheduling. Barry O'Sullivan and Huw J. Lewis. Proceedings of the 13th Conference of the Irish Manufacturing Committee, University of Limerick, September 1996, pages 195-203.

Papers Informally Published in a Peer-Reviewed Proceedings

188. Functional Dependencies in MDD-Compiled Product Catalogues. Tarik Hadzic, Barry O'Sullivan. ITWP 2009

189. A Personalisable Internet Telephony Service. David Lesaint, John Ly, Deepak Mehta, Barry O'Sullivan, Luis Quesada and Nic Wilson. ECAI 2008 Systems Demonstration, July 2008.

190. Beyond Valid Domains in Interactive Configuration. Tarik Hadzic and Barry O'Sullivan. Proceedings of the ECAI 2008 Workshop on Configuration, July 2008.

191. On Automata, MDDs and BDDs in Constraint Satisfaction. Tarik Hadzic, Esben Rune Hansen and Barry O'Sullivan. Proceedings of the ECAI 2008 Workshop on Inference Methods based on Graphical Structures of Knowledge, July 2008.

192. Using Global Constraints for Rectangle Packing. Helmut Simonis and Barry O'Sullivan. Proceedings of teh First Workshop on Bin Packing and Placement Constraints, June 2008.

193. Recognizing Free-form Hand-sketched Constraint Network Diagrams by Combining Geometry and Context. Tracy Hammond and Barry O'Sullivan. Proceedings of Eurographics Ireland, December 2007.

194. Generalizing Global Constraint Based on Network Flows. Igor Razgon, Barry O'Sullivan, and Gregory M. Provan. Proceedings of the CP 2006 Workshop on Constraint Modelling and Reformulation, September 2006.

195. A Survey of Explanation Techniques for Configurators. Albert Hagg, Ulrich Junker and Barry O'Sullivan. Proceedings of ECAI-2006 Workshop on Configuration, August 2006

196. Tree-structured Constraint Satisfaction Problems Revisited. Igor Razgon, Barry O'Sullivan, and Gregory Provan. Proceedings of CSCLP 2006, June, 2006

197. Automated Requirements Elicitation for Supply Chain Management. Barry O'Sullivan, Ken Brown, Alex Ferguson, Eugene C. Freuder and Michael Schabel. Proceedings of Workshop on Supply Chain Management and ICT, Groningen, Netherlands, November 2005.

198. A Decision Tree Learning and Constraint Satisfaction Hybrid for Interactive Problem Solving. Barry O'Sullivan, Alex Ferguson and Eugene C. Freuder. Proceedings of IJCAI-2005 Workshop on Configuration, July, 2005

199. Boosting Constraint Satisfaction using Decision Trees. Barry O'Sullivan, Alex Ferguson and Eugene C. Freuder. Proceedings of the CP-2004 Workshop on CSP Techniques with Immediate Application, September 2004.

200. Super Solutions for Combinatorial Auctions. Alan Holland and Barry O'Sullivan. Proceedings of the ECAI-2004 Workshop on Modelling and Solving Problems with Constraints, Valencia, August 2004.

201. Flexible Generalized Vickrey Auctions using Constraint Programming. Alan Holland and Barry O'Sullivan. Proceedings of the ECAI-2004 Workshop on Modelling and Solving Problems with Constraints, Valencia, August 2004, pp 184-200

202. Super Solutions for Combinatorial Auctions. Alan Holland and Barry O'Sullivan. Proceedings of CSCLP 2004: Joint Annual Workshop of ERCIM CoLogNet on Constraint Solving and Constraint Logic Programming, Lausanne, June 2004.

203. Combining Branch&Bound and SBDD to solve Soft CSPs. Stefano Bistarelli and Barry O'Sullivan. Proceedings of CSCLP 2004: Joint Annual Workshop of ERCIM CoLogNet on Constraint Solving and Constraint Logic Programming, Lausanne, June 2004.

204. A Constraint-Based Framework for the Cascade Vulnerability Problem. Stefano Bistarelli, Simon N. Foley and Barry O'Sullivan. Proceedings of COLOPS-2003 Workshop held alongside ICLP-2003, Mumbai, India, December 2003.

205. Symmetry Breaking in Soft CSPs. Stefano Bistarelli, Jerome Kelleher and Barry O'Sullivan. Proceedings of Soft Constraints Workshop, Kinsale, Cork, Ireland, September 2003.

206. Evaluation-Based Semiring Meta-Constraints. Jerome Kelleher and Barry O'Sullivan. Proceedings of Soft Constraints Workshop, Kinsale, Cork, Ireland, September 2003.

207. Semi-Automatic Modeling by Constraint Acquisition. Remi Coletta, Christian Bessiere, Barry O'Sullivan, Eugene C. Freuder, Sarah O'Connell, Joel Quinqueton. Proceedings of the Second International Workshop on Modelling and Reformulating Constraint Satisfaction Problems, Kinsale, Cork, Ireland, September 2003, Vol 2833, pp 812-816, 2003. ISSN: 0302-9743.

208. A Constraint-Aided Conceptual Design Environment for Autodesk Inventor. Alan Holland, Barry O'Callaghan, Barry O'Sullivan. Proceedings of the ERCIM CologNet International Workshop on Constraint Solving and Constraint Logic Programming, Budapest, Hungary, July 2003.

209. Efficient Vickery-Pricing for Grid Service Providers. Alan Holland, Barry O'Sullivan. Proceedings of the ERCIM CologNet International Workshop on Constraint Solving and Constraint Logic Programming, Budapest, Hungary, July 2003.

210. Modelling Tradeoffs Using Soft Constraints. Stefano Bistarelli, Barry O'Sullivan. Proceedings of the ERCIM CologNet International Workshop on Constraint Solving and Constraint Logic Programming, Budapest, Hungary, July 2003.

211. Strategies for Interactive Constraint Acquisition. Sarah O'Connell, Barry O'Sullivan, Eugene C. Freuder. CP-02 Workshop on User-Interaction in Constraint Satisfaction, Eight International Conference on Principles and Practice of Constraint Programming - CP 2002, Ithaca, New York, September, 2002.

212. Constraint-Based Product Structuring for Configuration. Barry O'Sullivan. ECAI-2002 Workshop on Configuration, Fifteenth European Conference on Artificial Intelligence, Lyon, France, July

213. Interactive Constraint Acquisition. Barry O'Sullivan, Eugene C. Freuder, Sarah O'Connell. CP-01 Workshop on User-Interaction in Constraint Satisfaction, Seventh International Conference on Principles and Practice of Constraint Programming - CP 2001, Paphos, Cyprus, December 1st, 2001.

214. Interfacing a Constraint Programming Language with an existing Electronics CAD Package. Marc van Dongen, Barry O'Sullivan, James Bowen, Alex Ferguson. ERCIM COMPULOG Workshop on Constraints, Schloss Hagenberg, Austria, October 1997.

Patents and Copyrights

215. A Constraint-Based System for the Personalisation of Subscriptions to Feature-Based Telecommunication Services invented by David Lesaint (British Telecom, UK), Deepak Mehta, Barry O'Sullivan, Luis Queada and Nic Wilson (UCC). EU Patent application filed in March 2008.

216. Optical Monitor Placement Optimization in Transparent Networks invented by Daniel C. Kilper (Bell Labs, NJ, USA), Barry O'Sullivan and Alex Fergeson (UCC). Subject to US provisional patent application 60/978,186, filed on 8th October 2007.

Editorial Boards

1. Editorial Board Member, Constraints Journal
2. Founding Associate Editor, Constraint Programming Letters
3. Associate Editor, Advances in Artificial Intelligence

Tutorials, Keynotes, & Invited Talks

1. **Invited Speaker** at the 2013 Sino-foreign-interchange Conference on Intelligence Science & Intelligent Data Engineering (IScIDE 2013) in Beijing, China.
2. I was an **Invited Speaker** at the 2012 Constraint Programming Conference, Quebec City, Canada.
3. I was an **Invited Speaker** at the 2010 Conference of the Association for the Advancement of Artificial Intelligence – this was the first time an Irish researcher has been invited to give such an invited talk.

4. Invited Tutorial: "Backdoors in Constraint Satisfaction and Satisfiability"
   Constraint Programming Conference (CP)
   September 2010

5. Tutorial: "An Introduction to CP and Combinatorial Optimisation through Numberjack"
   Association for the Advancement of Artificial Intelligence Conference (AAAI)
   July 2010

6. Tutorial (with Ulrich Junker, IBM): "Computing Explanations in Problem Solving"
   International Joint Conference on Artificial Intelligence (IJCAI)
   Pasadena, California, July 2009.
   Details: `http://www.cs.ucc.ie/~osullb/ijcai-tutorial-2009/`

7. Tutorial (with Igor Razgon): "Exploiting Fixed-Parameter Tractability in Satisfiability and Constraint Satisfaction"
   Constraint Programming Conference (CP)
   Lisbon, Portugal, September 2009.
   `http://www.cs.ucc.ie/~osullb/cp-tutorial-2009/`

8. Invited Keynote: "Challenges in Constraint-based Configuration and Explanation".
   First Workshop on Analyses of Software Product Lines
   Limerick, Ireland, September 12, 2008

9. Tutorial: "Explanations in Constraint Programming"
   Association for Constraint Programming Summer School
   St. Andrews University, Scotland 30th June 4th July 2008

10. Tutorial: "Modelling and Solving Two Complex Problems using CP and OR"
    Association for Constraint Programming Summer School
    St. Andrews University, Scotland 30th June 4th July 2008

11. Tutorial: "Some Classic Papers in Constraint Modeling and Solving"
    Association for Constraint Programming Summer School
    St. Andrews University, Scotland 30th June 4th July 2008

12. Invited Talk: "Constraints and Learning"
    CSCLP 2006: Annual ERCIM Workshop on Constraint Solving and Constraint Logic Programming
    Lisbon, 26th June 2006

List of Expert Assignments. I have been a regular reviewer of research proposals for both national and international bodies:

1. NASA (USA) – National Aeronautics and Space Administration.

2. NSF (USA) – National Science Foundation.

3. CNRS (France) – Centre National de la Recherche Scientifique

4. FNSNF (Switzerland) – Swiss National Science Foundation.

5. EPSRC (UK) – Engineering and Physical Sciences Research Council.

6. EI (Ireland) – Enterprise Ireland.

The workload in each case varies quite considerably. Enterprise Ireland often invites me to review 15-20 proposals per round, while FNSNF and EPSRC usually sends one proposal per annum. In the case of NSF, NASA and the CNRS, while there are a small number of proposals (5-8), they tend to be large and detailed.

Conference and Workshop Organisation I have had the honour of chairing more than two dozen international peer-reviewed conferences and workshops in my field. These are listed in full here.

Program Chair/Co-Chair

1. CompSust 2012 – 3rd International Conference on Computational Sustainabillity
2. WAITS 2012 – ECAI 2012 Workshop on AI for Telecommunications and Sensor Networks
3. CoCoMiLe 2012 – ECAI Workshop on COmbining COnstraint solving with MIning and LEarning
4. Dagstuhl Seminar 11201 – Constraint Programming meets Machine Learning and Data Mining
5. AIDC 2011 – AAAI 2011 Workshop on AI for Data Centre Management and Cloud Computing
6. ERCIM-CologNet 2010 Workshop on Constraint Solving and Logic Programming
7. SAC 2010 - Special Track on Constraint Solving and Programming
8. ERCIM-CologNet 2009 Workshop on Constraint Solving and Logic Programming
9. SAC 2009 - Special Track on Constraint Solving and Programming
10. AICS 2008 Artificial Intelligence and Cognitive Science
11. SAC 2008 - Special Track on Constraint Solving and Programming
12. SAC 2007 - Special Track on Constraint Solving and Programming
13. CP 2006 - Workshop on the Next 10 Years of Constraint Programming
14. CP 2005 Workshop on Constraints and Design
15. CP 2005 Workshop on Applications of Constraint Programming to Computer Security
16. FLAIRS 2005 - Special Track on Constraint Solving and Programming
17. SAC 2005 - Special Track on Constraint Solving and Programming
18. SAC 2006 - Special Track on Constraint Solving and Programming
19. FLAIRS 2004 - Special Track on Constraint Solving and Programming
20. FLAIRS 2003 Special Track on Constraint Solving and Programming
21. CP-2003 Workshop on User-Interaction in Constraint Satisfaction
22. CP-2002 Workshop on User-Interaction in Constraint Satisfaction
23. ERCIM-CologNet 2002 Workshop on Constraint Solving and Logic Programming
24. CP-2001 Workshop on User-Interaction in Constraint Satisfaction
25. AICS-99: 10th Irish Conference on Artificial Intelligence & Cognitive Science

Conference Chair/Co-Chair/Vice Chair

1. DCC-2012 - International Conference on Design Computing and Cognition Cloud Computing
2. DCC-2010 - International Conference on Design Computing and Cognition
3. DCC-2008 - International Conference on Design Computing and Cognition
4. DCC-2006 - International Conference on Design Computing and Cognition
5. CP-AI-OR 2006 - International Conference on Integration of AI and OR Techniques in Constraint Programming for Combinatorial Optimization Problems
6. DCC-2004 - International Conference on Design Computing and Cognition
7. IJCAR-2004 - International Joint Conference on Automated Reasoning

Other Conference Organisational Duties

I have served as: Chair of Special Tracks at the 2006 FLAIRS Conference; Sponsorship Chair for CP-AI-OR-2007, CP-2007 and CP-2008; Workshop/Tutorial Chair for CP-2004 and CP-2006.

Programme Committees

I have served on approximately 100 programme committees of international conferences and workshops in my field. Most notable amongst these are my roles as

1. Area Chair for Constraint Programming for IJCAI 2013, AAAI 2012 and ECAI 2012;
2. Senior PC Member for AAAI-2010, IJCAI-2009, and IJCAI-2011;
3. Regular PC Member for CP since 2002, with few exceptions.
4. Regular PC Member of CPAIOR since 2006.
5. PC Member for AAAI, ECAI and IJCAI on several occasions.
6. PC Member of ACM Electronic Commerce and ACM Recommender Systems.

Startup Companies. In February 1999 I co-founded Suntas Technologies Ltd., one of UCC's first campus companies. This company developed constraints technology for the electronics design market. Amongst Suntas Technologies' customer base were companies such as Blaupunkt (Germany), Siemens (Germany), Celestica (UK), Mitsubishi (Japan), Frequentis (Austria), Mentor Graphics (USA) and Zuken (Japan and UK).

Membership of Professional Associations

1. Member, Association for Constraint Programming (ACP)
2. Member, Association for the Advancement of Artificial Intelligence (AAAI)
3. Member, European Coordinating Committee for Artificial Intelligence (ECCAI)
4. Member, Association of Computing Machinery (ACM)
5. Member, Institute of Electrical and Electronic Engineers (IEEE)
6. Member, IEEE Computer Society