

Curriculum Vitae

1 Personal Information

NAME Xin YAO

WORK ADDRESS

The Centre of Excellence for Research in Computational Intelligence and Applications
(CERCIA)

School of Computer Science, The University of Birmingham
Edgbaston, Birmingham B15 2TT, U.K.

Email: X.Yao@cs.bham.ac.uk

URL: <http://www.cs.bham.ac.uk/~xin>

Phone: +44 121 414 3747, Fax: +44 121 414 2799

QUALIFICATIONS BSc (1982), MSc (1985), PhD (1990).

MAJOR RECOGNITIONS IEEE Fellow; Royal Society Wolfson Research Merit Award; IEEE Computational Intelligence Society Evolutionary Computation Pioneer Award.

2 Employment History

Jan. 2003 – : Director of The Centre of Excellence for Research in Computational Intelligence and Applications (CERCIA), the University of Birmingham, Edgbaston, Birmingham B15 2TT, UK.

Apr. 1999 – : Chair of Computer Science, School of Computer Science, the University of Birmingham, Edgbaston, Birmingham B15 2TT, UK. (Deputy Head from August 2000 to February 2004 and from August 2004 to August 2007.)

Jan. 1999 – Mar. 1999: Associate Professor in the School of Computer Science, University College, The University of New South Wales (UNSW), Australian Defence Force Academy (ADFA), Canberra, ACT 2600, Australia.

July 1995 – Dec. 1998: Senior Lecturer in the School of Computer Science, University College, UNSW, ADFA, Canberra, ACT 2600, Australia.

Sept. 1992 – June 1995: Lecturer in the School of Computer Science, University College, UNSW, ADFA, Canberra, ACT 2600, Australia.

Aug. 1991 – Aug. 1992: CSIRO Post-Doctoral Research Fellow (Equivalent to Lecturer Level B) in the Knowledge-Based Systems Group, CSIRO (Commonwealth Scientific and Industrial Research Organisation) Division of Building, Construction and Engineering, PO Box 56, Graham Road, Highett, Victoria 3190, Australia.

Aug. 1990 – July 1991: Post-Doctoral Fellow (Equivalent to Lecturer Level A) in the Computer Sciences Laboratory, Research School of Physical Sciences and Engineering, Australian National University, Canberra, ACT 0200, Australia. The Computer Sciences Laboratory is now in the Research School of Information Sciences and Engineering.

- Oct. 1989 – July 1990: Lecturer in the Department of Computer Science and Technology, University of Science and Technology of China (USTC), Hefei, Anhui 230027, P. R. China. (USTC is the only university affiliated with the Chinese Academy of Sciences. It used to adopt a five-year undergraduate program for all BSc and BEng students until 2004.)
- Nov. 1985 – Sept. 1989: Associate Lecturer in the Department of Computer Science and Technology, USTC, Hefei, Anhui 230027, P. R. China.

3 Honorary Appointments

- Oct. 2010 – Present: Director of the USTC-Birmingham Joint Research Institute in Intelligent Computation and Its Applications (UBRI), University of Science and Technology of China (USTC), Hefei, Anhui 230027, P. R. China.
- Sept. 2003 – Present: Director of the Nature Inspired Computation and Applications Laboratory (NICAL), USTC, Hefei, Anhui 230027, P. R. China.
- January-December 2008 and 1/8/2009-31/7/2010 Distinguished Visiting Professor, College of Informatics, Yuan Ze University, 135 Far-East Rd., Chung-Li, Taoyuan, Taiwan.
- Sept. 2003 – Sept. 2005: Distinguished Visiting Professor (Grand Master Chair Professorship), University of Science and Technology of China, Hefei, Anhui 230027, P. R. China. (The 11th one in the USTC history and the first one in Information Science and Technology.)
- Sept. 2003 – Present: Chief Professor, School of Software Engineering, University of Science and Technology of China, Hefei, Anhui 230027, P. R. China.
- Sept. 2003 – : Visiting Professor, Xidian University, Xi'an, P. R. China.
- Jun. 2002 – : Visiting Professor, Nanjing University of Aeronautics and Astronautics, Nanjing 210016, P. R. China.
- Jan. 2003 – : Visiting Professor, Northeast Normal University, Changchun, Jilin 130024, P. R. China.
- Jan. 1998 – Feb. 1998: Foreign research specialist. The Electrotechnical Laboratory (ETL), 1-1-1 Umezono, Tsukuba, Japan.
- Feb. 1996 – July 1996: Foreign research specialist. The Electrotechnical Laboratory (ETL), 1-1-1 Umezono, Tsukuba, Japan.

4 Leadership Positions in Professional Organisations

1. Past-President (2016) of the IEEE Computational Intelligence Society.
2. President (2014-15) of the IEEE Computational Intelligence Society. (The Society has 7600+ members world-wide at the end of 2015, highest ever.)
3. President-Elect (2013), Vice President for Publications (2009-12) of the IEEE Computational Intelligence Society.
4. Member of the IEEE Fellow Evaluation Committee (2015).
5. Member of the IEEE Ethics and Member Conduct Committee (2015).
6. Member of the Steering Committee of IEEE Big Data Initiative (2015-16).
7. Member of the IEEE Technical Activity Board (2014-15).

8. Member (2010-15) of the Scientific Committee of European Centre for Soft Computing, Edificio de Investigación, Calle Gonzalo Gutierrez Quirós S/N, 33600 Mieres, Asturias, Spain.
9. Chair of the Fellows Evaluation Committee of the IEEE Computational Intelligence Society (2008-09).
10. Member of the IEEE Frank Rosenblatt Award Committee (2005-06 and 2008-2011). (This is an IEEE level committee. IEEE has approximately 300,000 members world-wide.)
11. Chair of the IEEE Computational Intelligence Society Technical Committee on Evolutionary Computation (2001-03).
12. President of the Evolutionary Programming Society (2000-01).
13. Member of the PPSN Steering Committee (2001-06).
14. Associate member of the ORBICOM network (The Worldwide Network of UNESCO Chairs and Associates in Communications).

5 Education

- Feb. 1986 – May 1990: PhD student in the Department of Computer Science and Technology, USTC, Hefei, Anhui 230027, P. R. China. My thesis won the President’s Award of the Chinese Academy of Sciences for Outstanding Thesis in November 1989, which was competed nationally.
- July 1982 – Oct. 1985: MSc by research student in the Mainframe Architecture Laboratories of the North China Institute of Computing Technology (NCI) in the then Ministry of Electronic Industry of China, Beijing 100083, P. R. China.
- July 1978 – June 1982: BSc student in the Department of Computer Science and Technology, USTC, Hefei, Anhui 230027, P. R. China. I completed the five-year programme in four years.
- Mar. 1978 – July 1978: Full-time student in the Special Class for the Gifted Young, USTC, Hefei, Anhui 230027, P. R. China. There were only 21 students in the class selected from all over China.

6 Awards and Honours

- 1/1/2015 - 31/12/2017: IEEE Computational Intelligence Society Distinguished Lecturer.
- August 2015: *IEEE Transactions on Evolutionary Computation Outstanding 2013 Paper Award (bestowed in 2015)*:
- U. Bhowan, M. Johnston, M. Zhang and X. Yao, “Evolving Diverse Ensembles using Genetic Programming for Classification with Unbalanced Data,” *IEEE Transactions on Evolutionary Computation*, **17**(3):368-386, June 2013.
- 2013: 2013 IEEE Computational Intelligence Society Evolutionary Computation Pioneer Award.
- 1 October 2012 - 30 September 2017: Royal Society Wolfson Research Merit Award.
- 7 November 2012: IEEE Computational Intelligence Society (CIS) Distinguished Lecture, IEEE CIS New York Chapter, Fordham University, New York City, NY, USA.
- 2013: *The ICI Prize for the Best Paper published in Transactions in 2012*:
- S. He, H.J. Cooper, D.G. Ward, X. Yao and J.K. Heath, “Analysis of premalignant pancreatic cancer mass spectrometry data for biomarker selection using a group search optimizer,” *Transactions of the Institute of Measurement and Control*, **34**(6):668-676, August 2012.

- June 2011: *IEEE Transactions on Neural Networks Outstanding 2009 Paper Award (bestowed in 2011)*:
- H. Chen, P. Tiño and X. Yao, “Probabilistic Classification Vector Machines,” *IEEE Transactions on Neural Networks*, **20**(6):901-914, June 2009.
- July 2010: *IEEE Transactions on Evolutionary Computation Outstanding 2008 Paper Award (bestowed in 2010)*:
- S. Y. Chong, P. Tino and X. Yao, “Measuring Generalization Performance in Co-evolutionary Learning,” *IEEE Transactions on Evolutionary Computation*, **12**(4):479-505, August 2008.
- 5 July 2010: *2010 BT Gordon Radley Award for Best Author of Innovation (Finalist)*:
- P. R. Lewis, P. Marrow and X. Yao, “Resource Allocation in Decentralised Computational Systems: An Evolutionary Market-Based Approach,” *Autonomous Agents and Multi-Agent Systems*, **21**(2):143-171, September 2010.
- June 2010: Inaugural University Award for Excellence in Doctoral Research Supervision, University of Birmingham, UK.
- 2 November 2010: Distinguished “Leon the Mathematician” Lecturer at Department of Informatics, Aristotle University of Thessaloniki, Greece.
- 2003 – : IEEE Fellow.
- 2003 – 2013: IEEE Computational Intelligence Society Distinguished Lecturer.
- August 2007 – 2011: Fellow of British Computer Society.
- 2008-2010: Supervisor of award-winning PhD theses:
- 2010: Huanhuan Chen’s PhD thesis (completed in 2008) on “Diversity and Regularization in Neural Network Ensembles” won the *2011 IEEE Computational Intelligence Society Outstanding PhD Dissertation Award* in July 2010. The Award was competed globally. Only one award was given in that year.
 - 2009: Huanhuan Chen’s PhD thesis (completed in 2008) on “Diversity and Regularization in Neural Network Ensembles” won a CPHC/BCS Distinguished PhD Dissertation Runner up Award.
 - 2008: Siang Yew Chong’s PhD thesis (completed in 2007) on “Generalization and Diversity in Co-evolutionary Learning” won the *2009 IEEE Computational Intelligence Society Outstanding PhD Dissertation Award* in June 2008. The Award was competed globally. Only one award was given in that year.
- 8-12 July 2009: Best Paper Award in the Theory track at the 2009 Genetic and Evolutionary Computation Conference, 8-12 July 2009, Montreal, Canada:
- P. Rohlfshagen, P. K. Lehre and X. Yao, “Dynamic evolutionary optimisation: An analysis of frequency and magnitude of change,” In *Proceedings of the 2009 Genetic and Evolutionary Computation Conference*, pp.1713-1720, 2009.
- 2008: Best PhD Student Paper at the 1st International Workshop on Search-Based Software Testing, 9-11 April 2008, Lillehammer, Norway:
- Authors:** Andrea Arcuri (student), Per Kristian Lehre (research fellow) and Xin Yao (supervisor).
- Title:** Theoretical Runtime Analyses of Search Algorithms on the Test Data Generation for the Triangle Classification Problem.
- 2005 – 2007 Cheung Kong Scholar (Changjiang Chair Professor), awarded by the Chinese Ministry of Education, tenable at the University of Science and Technology of China, Hefei, Anhui, China. (A prestigious award given to highly selected overseas scientists.)

28 October 2005 Sterling Hou Lecturer, University of Missouri - Columbia, Columbia, MO 65211, USA.

2005: Best Student Paper at the 2005 IEEE Symposium on Computational Intelligence in Bioinformatics and Computational Biology, San Diego, California, USA, 14-15 November 2005:

Authors: K. Tang (student), P. N. Suganthan (supervisor) and X. Yao (co-supervisor).

Title: Feature selection for microarray data using least squares SVM and particle swarm optimization.

2001: The 2001 IEEE Donald G. Fink Prize Paper Award for the paper entitled:

“Evolving artificial neural networks,” *Proceedings of the IEEE*, **87**(9):1423-1447, September 1999.

(A prestigious IEEE-wide paper award.)

1997: First Prize of the 1997 IEEE ACT Section Undergraduate Student Paper Contest:

Authors: J. Leeming (student) and X. Yao (supervisor).

Title: Terrain traversal by genetic algorithms.

1997: Third Prize of the 1997 IEEE ACT Section Postgraduate Student Paper Contest:

Authors: Y. Liu (student) and X. Yao (supervisor).

Title: Towards Designing Neural Network Ensembles by Evolution.

1996: Best Student Paper Award (First Prize) at the 1996 IEEE International Conference on Evolutionary Computation (ICEC'96), Nagoya, Japan:

Authors: P. J. Darwen (student) and X. Yao (supervisor).

Title: Automatic modularization by speciation.

1995: Best Student Paper Award (First Prize) at the 1995 IEEE International Conference on Evolutionary Computation (ICEC'95), Perth, Australia:

Authors: P. J. Darwen (student) and X. Yao (supervisor).

Title: A dilemma for fitness sharing with a scaling function.

Nov. 1989: The President's Award of the Chinese Academy of Sciences for Outstanding PhD Thesis.

Aug. 1988: The Outstanding Player in the National Men's Basketball Competition for Postgraduate Students.

7 Journal/Book Series Editorship

1. Series editor of the book series in *Advances in Natural Computation* (World Scientific). (2002 –)
2. Editor-in-Chief (2003 – 2008) of *IEEE Transactions on Evolutionary Computation* (IEEE). Associate editor in 1997 – 2002.
3. Associate editor of *International Journal of Computational Intelligence and Applications* (World Scientific). (2001 –)
4. Action editor of *Cognitive Systems Research* (Elsevier). (2000 – 2009)
5. Associate Editor (Europe) of *The International Journal of Hybrid Intelligent Systems* (ISSN 1448-5869) (2003 –).

6. Member of the editorial board of *Theoretical Computer Science* (Elsevier) (2006 –).
7. Member of the editorial board of *Genetic Programming and Evolvable Machines* (Kluwer). (2000 –)
8. Member of the editorial board of *Information Sciences* (Elsevier) (2004 –).
9. Member of the editorial board of *Connection Science* (Taylor & Francis) (2003 –).
10. Member of the editorial board of *Ecological Informatics* (Elsevier) (2005 –).
11. Member of the editorial board of *International Journal of Bioinformatics Research and Applications (IJBRA)* (Inderscience) (2004 –).
12. Member of the editorial board of *Journal of Computer Science and Technology* (ISSN 1000-9000) (2003 –).
13. Member of the editorial board of *Journal of Systems Science and Complexity* (Springer-Kluwer) (2005 –).
14. Member of the editorial board of *Journal of University of Science and Technology of China* (ISSN 0253-2778, in Chinese) (2006 –).
15. Member of the editorial board of *Chinese Science Bulletin* (Science in China Press, co-published with Springer-Verlag) (2008 –).
16. Associate editor of *Knowledge and Information Systems: An International Journal* (Springer-Verlag). (1999 – 2007)
17. Member of the editorial board of *International Journal of Automation and Computing* (ISSN 1476-8186) (2003 – 2007).
18. Member of the editorial board of *Pattern Analysis and Applications* (Springer-Verlag) (2000 – 2001).
19. Guest co-editor of *Journal Computer Science and Technology* Special Issue on “Evolutionary Computation”, to appear in 2012.
20. Guest co-editor of *Autonomous Agents and Multi-Agent Systems*, **21**(2), September 2010.
21. Guest co-editor of *Information Sciences* Special Issue on “Nature Inspired Problem Solving”, **178**(15), 1 August 2008.
22. Guest co-editor of *International Journal of Computational Intelligence and Applications* Special Section on “Simulated Evolution and Learning”, to appear in 2008.
23. Guest co-editor of *Journal of Computer Science and Technology* Special Issue on “Evolutionary Optimisation”, **23**(1), January 2008.
24. Guest co-editor of *Genetic Programming and Evolvable Machines* Special Issue on “Theoretical Foundations of Evolutionary Computation”, **9**(2), June 2008.
25. Guest co-editor of *Connection Science* Special Issue on “Evolutionary Learning and Optimisation”, Vol. 19, No. 4, December 2007.
26. Member of the editorial panel of the special issue of *Advances in Econometrics* (Elsevier) on “Applications of AI in Finance & Economics” (2003).
27. Guest co-editor of the special issue of *International Journal of Computational Intelligence and Applications* on “co-evolution”, Vol. 2, No. 1, March 2002.
28. Guest editor of the special issue of *Integrated Computer-Aided Engineering* on “evolutionary computing and neural networks,” Vol. 9, No. 1, January 2002.

29. Member of the editorial board for the special issue of *Neurocomputing Journal* (Elsevier) on “evolutionary neural systems”, *Vol. 42, Issues 1-4, January 2002*.
30. Guest co-editor of the special issue of the journal *Applied Intelligence* (Kluwer Academic) on “simulated evolution and learning” *Vol. 15, No. 3, November/December 2001*.
31. Guest co-editor of the special issue of *International Journal of Knowledge-Based Intelligent Engineering Systems* on “intelligent and evolutionary systems,” *Vol. 4, No. 3, July 2000*.
32. Guest editor of the special issue of *Journal of Advanced Computational Intelligence* on “simulated evolution and learning”, *Vol. 4, No. 2, April 2000*.
33. Guest editor of the special section of *Communications of the ACM* on “evolvable hardware,” *Vol. 42, No. 4, April 1999*.
34. Guest co-editor of the special issue of the journal *Applied Intelligence* (Kluwer Academic) on “evolutionary learning,” *Vol. 8, No. 1, 1998*.
35. Guest editor of the special issue of *Australian Journal of Intelligent Information Processing Systems* on “intelligent and evolutionary systems,” *Vol. 4, No. 3/4, Spring/Summer 1997*.
36. Guest editor of the special issue of the journal *Informatica: An International Journal of Computing and Informatics* on “evolutionary computation,” *Vol. 18, No. 4, December 1994*.

8 Invited Keynote/Plenary Speeches

1. Invited plenary speaker at the 17th International Conference on Intelligent Data Engineering and Automated Learning (IDEAL'16), Yangzhou, China, 12-14 October 2016.
2. Invited plenary speaker at the 2016 IEEE Congress on Evolutionary Computation (CEC'16), Vancouver, Canada, 25-29 July 2016. (As part of WCCI'2016)
3. Invited keynote speaker at the 15th International Conference on Artificial Intelligence and Soft Computing (ICAISC'2016), Zakopane, Poland, 12-16 June 2016.
4. Invited plenary speaker at the 2015 IEEE Symposium Series on Computational Intelligence (SSCI'2015), Cape Town, South Africa, 8-10 December 2015.
5. Invited plenary speaker at the 16th International Conference on Intelligent Data Engineering and Automated Learning (IDEAL), Wroclaw, Poland, 14-16 October 2015.
6. Invited keynote speaker at the 10th International Conference on Bio-inspired Computing: Theories and Applications (BIC-TA 2015), 25-28 September 2015, Hefei, Chin.
7. Invited keynote speaker at the 2015 IEEE Conference on Computational Intelligence and Games (IEEE CIG 2015), Tayih Landis Hotel, Tainan, Taiwan, 31 August - 2 September 2015.
8. Invited keynote speaker at the 6th International Conference on Pattern Recognition and Machine Intelligence, Warsaw, Poland, 30 June - 3 July 2015.
9. Invited keynote speaker at the Tenth International Conference on Simulated Evolution And Learning (SEAL 2014), 15-19 December 2014, Dunedin, New Zealand.
10. Invited keynote speaker at the 18th Asia Pacific Symposium on Intelligent and Evolutionary Systems, 10-12 November 2014, Singapore.
11. Invited keynote speaker at the 15th International Conference on Engineering Applications of Neural Networks (EANN'14), 5-7 September 2014, Sofia, Bulgaria.

12. Invited plenary speaker at the Fifth International Conference on Intelligent Control and Information Processing (ICICIP 2014), Dalian, China, 18-10 August 2014.
13. Invited keynote speaker at the 2014 International Conference on Intelligent Computing (ICIC2014), 3-6 August 2014, Taiyuan, China.
14. Invited plenary speaker at the 2014 World Congress on Computational Intelligence (WCCI'2014), 6-11 July 2014, Beijing, China.
15. Invited keynote speaker at the Third Chinese Search Based Software Engineering Workshop, Xuzhou, China, 4 July 2014.
16. Invited keynote speaker at the 2004 Latin American Congress on Computational Intelligence (LA-CCI 2014), 12-13 June 2014. San Carlos de Bariloche, Argentina.
17. Invited keynote speaker at the 2013 International Joint Conference on Awareness Science and Technology & Ubi-Media Computing (iCAST 2013 & UMEDIA 2013), Aizu-Wakamatsu, Japan, 2-4 November 2013.
18. Invited plenary speaker at the 1st BRICS Countries and 11th Brazilian Congress on Computational Intelligence, Recife ('Porto de Galinhas' Beach), Brazil, 8-11 September 2013.
19. Invited keynote speaker at the 5th Symposium on Search-Based Software Engineering, St. Petersburg, Russia, 24-26 August 2013.
20. Invited keynote speaker at the 2013 Genetic and Evolutionary Computation Conference (GECCO 2013), Amsterdam, The Netherlands, 6-10 July 2013.
21. Invited keynote speaker at the 2013 Knowledge Engineering: Principles and Techniques Conference (KEPT), Cluj-Napoca, Romania, 5-7 July 2013. (Unable to attend)
22. Invited keynote speaker at the 2013 Unconventional Computation and Natural Computation Conference, Milano, Italy, 1-5 July 2013.
23. Invited keynote speaker at the Second Chinese Search Based Software Engineering Workshop, Dalian, China, 8-9 June 2013.
24. Invited keynote speaker at the 11th International Workshop on Multiple Classifier Systems (MCS 2013), Nanjing, China, 15-17 May 2013.
25. Invited keynote speaker at the Third IEEE International Conference on Information Science and Technology (ICIST 2013), Yangzhou, Jiangsu, China, 23-25 March 2013.
26. Invited keynote speaker at the Third International Swarm Evolutionary and Memetic Computing Conference (SEMCCO'2012), Bhubaneswar, India, 20-22 December 2012.
27. Invited talk at the DIMACS Workshop on Algorithmic Aspects of Information Fusion (WAIF), DIMACS Center, CoRE Building, Rutgers University, NJ, USA. 8-9 November 2012.
28. Invited keynote speaker at the Third International Conference on Swarm Intelligence (ICSI 2012), 17-20 June 2012, Shenzhen, China.
29. Invited plenary speaker at the 2012 World Congress on Computational Intelligence (WCCI'2012), 10-15 June 2012, Brisbane, Australia.
30. Invited plenary speaker at the 2011 International Conference on Neural Information Processing (ICONIP 2011), 14-17 November 2011, Shanghai, China.
31. Invited plenary speaker at the 2011 International Conference on Adaptive and Intelligent Systems (ICAIS'11), 6-8 September 2011, Klagenfurt, Austria.

32. Invited keynote speaker at the 5th Learning and Intelligent Optimization Conference (LION 5), 17-21 January 2011, Rome, Italy.
33. Invited keynote speaker at the 2010 IADIS International Conference on Intelligent Systems and Agents (ISA'2010), Freiburg, Germany, 29-31 July 2010.
34. Invited keynote speaker at the 2010 International Conference on Computer Design and Applications (ICCD'A'2010), Qinhuangdao, China, 25-27 June 2010.
35. Invited keynote speaker at the 2010 International Symposium on INnovations in Intelligent Systems and Applications (INISTA'2010), Kayseri & Cappadocia, Turkey, 21-24 June 2010.
36. Invited keynote speaker at the 5th International Conference on Neural Networks and Artificial Intelligence (ICNNAI'2010), 1-4 June 2010, Brest State Technical University, Belarus.
37. Invited plenary speaker at the 14th IEEE International Conference on Intelligent Engineering Systems 2010 (INES'2010), Las Palmas of Gran Canaria, Spain, 5-7 May 2010.
38. Invited plenary speaker at the 13th International Workshop on Advanced Computing and Analysis Techniques in Physics Research (ACAT'10), Jaipur, India, 22-27 February 2010. (Unable to deliver the talk due to the visa issue.)
39. Invited keynote speaker at the 4th Learning and Intelligent Optimization Conference (LION 4), 18-22 January 2010, Venice, Italy.
40. Invited speaker at the 2nd Workshop on Understanding Heuristics organised by LANCS Initiative: Putting Theory into Practice, 13-14 January 2010, Cardiff, UK.
41. Invited keynote speaker at the 19th International Conference on Artificial Neural Networks (ICANN'09), 14-17 September 2009, Limassol, Cyprus.
42. Invited keynote speaker at the 22nd International Conference on Industrial, Engineering & Other Applications of Applied Intelligent Systems (IEA/AIE-09), June 24-27, 2009, Tainan, Taiwan.
43. Invited keynote speaker at the 7th International Conference on Simulated Evolution And Learning (SEAL'08), Melbourne, Australia, 8-11 December 2008.
44. Invited speaker at the 2008 International Conference on Frontiers of Computational Science, 27-29 November 2008, Nagoya, Japan.
45. Invited keynote speaker at the 8th Annual UK Workshop on Computational Intelligence (UKCI'08), 10-12 September 2008, Leicester, UK.
46. Invited keynote speaker at the 2008 IEEE International Conference on Industrial Technology (ICIT2008), Chengdu, China, 21-24 April 2008.
47. Invited keynote speaker at the Seventh International Conference on Computational Intelligence and Multimedia Applications (ICCIMA'07), Mepco Schlenk Engineering College, Sivakasi, Tamilnadu, India, 13-15 December 2007. (Invitation declined due to other commitments)
48. Invited keynote speaker at the 3rd China Computer Science Education Conference, Shanghai, China, 26-28 October 2007.
49. Invited keynote speaker at the 2007 IEEE Congress on Evolutionary Computation (CEC'07), 25-28 September 2007, Singapore.
50. Invited keynote speaker at the 2007 International Conference on Intelligent Computing (ICIC'07), Qingdao, China, 21-24 August 2007.

51. Invited plenary speaker at the Sixth International Conference on Optimization (Optimization 2007), Faculty of Economics, University of Porto, Portugal, 22-25 July 2007.
52. Invited keynote speaker at the 2006 International Conference on Computational Intelligence and Security (CIS'06), 3-6 November 2006, Guangzhou, China.
53. Invited keynote speaker at the 2006 IEEE International Conference on e-Business Engineering (ICEBE'2006), 24-26 October 2006, Shanghai, China. (Invitation declined due to other commitments)
54. Invited keynote speaker at the 2006 International Conference on Natural Computation (ICNC'06) and the 2006 International Conference on Fuzzy Systems and Knowledge Discovery (FSKD'06), Xi'an, China, 24-27 September 2006.
55. Invited keynote speaker at the 7th International Conference on Intelligent Data Engineering and Automated Learning (IDEAL 2006), 20-23 September, 2006, Burgos, Spain.
56. Invited plenary speaker at the 2006 International Conference on Intelligent Computing (ICIC2006), 16-19 August 2006, Kunming, China. (Invitation declined due to other commitments)
57. Invited speaker at the 2006 IEEE Congress on Evolutionary Computation (CEC'06), 16-21 July 2006, Vancouver, Canada.
58. Invited plenary speaker at the fourth International Conference on Neural Networks and Artificial Intelligence (ICNNAI'2006), 31 May - 2 June 2006, Brest, Belarus. (Invitation declined due to other commitments)
59. Invited plenary speaker at the 2006 Polish Conference on Evolutionary Algorithms and Global Optimization (KAEiOG'2006), 30 May - 2 June 2006, Murzasichle, Poland.
60. Invited plenary speaker at the 8th Congress of SIMAI — Italian Society for Applied and Industrial Mathematics, Ragusa, Italy, 22-25 May 2006.
61. Invited plenary speaker at the IEEE International Conference on Neural Networks and Brain, (ICNN&B'05), 13-15 October 2005, Beijing, China. (Invitation declined due to other work commitments.)
62. Invited keynote speaker at the 2005 Computational Science Symposium, Nagoya, Japan, 11-13 October 2005.
63. Invited keynote speaker at the Ninth International Conference on Knowledge-Based Intelligent Information & Engineering Systems (KES'2005), 14 - 16 September, 2005, Hilton on the Park, Melbourne, Australia. (Invitation declined due to other commitments)
64. Invited keynote speaker at the Sixth International Workshop on Information Processing in Cells and Tissues (IPCAT'05), August 30 - September 1, 2005, St William's College, York, UK.
65. Invited keynote speaker at the 2005 International Conference on Natural Computation (ICNC'05) and the 2005 International Conference on Fuzzy Systems and Knowledge Discovery (FSKD'05), Changsha, Hunan, China, 27-29 August 2005.
66. Invited keynote speaker at the 2005 International Congress on Computational Intelligence (ICCI'05), Corporación Universitaria del Sinu at Montería, Montería, Colombia, 10-12 August 2005.
67. Invited keynote speaker at the 2005 IEEE International Workshop on VLSI Design and Video Technology (IWVDVT'05), Suzhou Hotel, Suzhou, China, 28-31 May 2005. (Invitation declined due to other commitments)
68. Invited keynote speaker at the 2005 International Symposium on Intelligent Computation and Its Application (ISICA'2005), Wuhan, China, 4-6 April 2005.

69. Invited keynote speaker at the 5th International Conference on Recent Advances in Soft Computing (RASC2004), Nottingham, UK, 16-18 December 2004.
70. Invited keynote speaker at the 5th International Conference on Simulated Evolution And Learning (SEAL'04), Pusan, South Korea, 26-29 October 2004.
71. Invited keynote speaker at the First Brazilian Workshop on Evolutionary Computation (BEC'2004), São Luís, Maranhão, Brazil, 29 September 2004.
72. Invited keynote speaker at the 3rd IEEE SMC UK-RI 3rd Workshop on Intelligent Cybernetic Systems (ICS'04), 7-8 September 2004, University of Ulster at Magee, Londonderry, UK.
73. Invited plenary speaker at the 2004 UK Workshop on Computational Intelligence (UKCI-04), Loughborough, UK, 6-8 September 2004.
74. Invited keynote speaker at the 2004 International Summer Workshop on the Economic, Financial and Managerial Applications of Computational Intelligence, KaoHsiung, Taiwan, 30 August - 3 September 2004.
75. Invited plenary speaker at the 2004 Congress on Evolutionary Computation (CEC'2004), Portland, USA, 20-23 June 2004.
76. Invited speaker at the Natural Computing Applications Forum (NCAF) meeting on Fundamentals of Natural Computing, Bath, UK, 21-22 January 2004.
77. Invited keynote speaker at the IEEE International Conference on Neural Networks and Signal Processing (ICNNSP'03), Nanjing, P. R. China, 14-17 December 2003.
78. Invited keynote speaker at the 5th International Conference on Computational Intelligence and Multimedia Applications (ICCIMA'03), Xi'an, P. R. China, 27-30 September 2003.
79. Invited speaker at the 2003 Symposium on Robotics and Manufacturing Science (CASRMS'03), Shenyang Institute of Automation, Chinese Academy of Sciences, 24-26 September 2003, Shenyang, Liaoning, P. R. China.
80. Invited plenary speaker at The 7th International Conference on Knowledge-Based Intelligent Information & Engineering Systems, 3-5 September 2003, Oxford, UK. Talk title: *The Evolution of Evolutionary Computation.*
81. Invited keynote speaker at the IEEE INDIN'03 Workshop on Autonomic Computing Principles and Architectures (AUCOPA'2003), 22-23 August 2003, Banff, Alberta, Canada.
82. Invited distinguished speaker at The 2003 International Conference on Machine Learning and Applications (ICMLA'03), Sheraton Gateway Hotel, Los Angeles, California, June 23-24, 2003. Talk title: *Adaptive Divide-and-Conquer Using Populations and Ensembles.*
83. Invited keynote speaker at the joint conferences ICONIP'02-SEAL'02-FSKD'02 (the 9th International Conference on Neural Information Processing, the 4th Asia-Pacific Conference on Simulated Evolution And Learning, and the 2002 International Conference on Fuzzy Systems and Knowledge Discovery), 18-22 November 2002, Singapore. Talk title: *Automatic Divide-and-Conquer Using Populations and Ensembles.*
84. Invited plenary speaker at the 2002 International Conference on Intelligent Information Technology, 22-25 September 2002, Beijing, P. R. China. Talk title: *Have We Made Best Use of Evolutionary Learning?*
85. Invited speaker at 2002 NASA/DoD Conference on Evolvable Hardware (EH'2002), July 15 - 18, 2002, Holiday Inn Select, Old Town Alexandria, VA, USA. Talk title: *Getting Most Out of Evolutionary Approaches.*

86. Invited keynote speaker at the Fifteenth International Conference on Industrial & Engineering Application of Artificial Intelligence & Expert Systems (IEA/AIE'2002), June 17-20, 2002 Cairns, Australia. Talk title: *Automatic Divide-and-Conquer Using Populations and Ensembles*.
87. Invited ACDM lecturer at the 5th International Conference on Adaptive Computing in Design and Manufacture Exeter, UK, 16-18 April 2002. Talk title: *From Evolutionary Computation to Natural Computation*.
88. Invited speaker at the Natural Computing Applications Forum Winter Meeting on Machine Learning for Global Optimisation, Exeter University, Exeter, UK, 23-24 January 2002. Talk title: *Evolutionary Optimisation and Constraint Handling*.
89. Invited keynote speaker at the 2001 International Conference on Computational Intelligence, Robotics and Autonomous Systems (CIRAS'2001), 28-30 November 2001, Singapore. Talk title: *Evolutionary Optimisation and Constraint Handling*.
90. Invited keynote speaker at the biennial International Conference on Artificial Neural Networks and Expert Systems (ANNES'2001), Dunedin, New Zealand, 22-24 November 2001. Talk title: *If the Mountain doesn't come to Mohammed, Mohammed must go to the Mountain*.
91. Invited keynote speaker at the Fifth Australasia-Japan Joint Workshop on Intelligent and Evolutionary Systems, Dunedin, New Zealand, 19-21 November 2001. Talk title: *Have We Made Best Use of Evolutionary Learning?*
92. Invited keynote speaker at the 4th International Conference on Evolvable Systems (ICES-2001), Tokyo, Japan, October 3-5, 2001. Talk title: *Have We Made Best Use of Evolutionary Learning?*
93. Invited keynote speaker at the Third NASA/DoD Workshop on Evolvable Hardware, 12-14 July 2001, Long Beach, CA, USA. Talk title: *What Evolvable Hardware Still Can't Do?*
94. Invited plenary speaker at the 2001 Congress on Evolutionary Computation (CEC'2001), Seoul, South Korea, 27-30 May 2001. Talk title: *Co-evolutionary Learning and Iterated Prisoner's Dilemma*.
95. Invited speaker at the Natural Computing Applications Forum Winter Meeting on Time-series Analysis, Aston University, Birmingham, UK, 24-25 January 2001. Talk title: *Co-Evolution, Games and Social Behaviors*.
96. Invited keynote speaker at the Second International Conference on Applications of Machine Learning to Ecological Modelling, Adelaide, Australia, 27 November - 1 December 2000. Talk title: *State of the Art of Evolutionary Computation*.
97. Invited speaker at the Croucher Advanced Study Institute on Neural and Evolutionary Computations for Spatial Data Analysis in June 12-17, 2000, Hong Kong. Talk title: *Integration of Neural and Evolutionary Computation: Past, Present and Future*.
98. Invited speaker at the 16th Annual British Colloquium for Theoretical Computer Science (BCTCS), Liverpool, U.K., 10-12 April 2000. Talk title: *Some Theoretical Issues in Evolutionary Computation*.
99. Invited speaker at the International Workshop on Evolutionary Computation, Wuhan, P. R. China, 3-9 April 2000. Talk titles: *Global Optimization by Landscape Approximation and Evolutionary Search and Co-Evolution, Games and Social Behaviors*.
100. Invited plenary speaker at the joint 6th International Conference on Neural Information Processing (ICONIP'99), the Australian and New Zealand International Conference on Intelligent Information Processing Systems (ANZIIS'99), the 5th New Zealand International Conference on Artificial Neural Networks and Expert Systems (ANNES'99), and the 11th Australian Conference on Neural Networks (ACNN'99), Perth, Australia, 16-20 November 1999. Talk title: *A Population of Heads Are Better Than One*.

101. Invited keynote speaker at the International Conference on Computational Intelligence for Modelling, Control and Automation (CIMCA'99), Vienna, Austria, 17-19 February 1999. Talk title: *A Population of Heads Are Better Than One*.
102. Invited keynote speaker at the 3rd On-line World Conference on Soft Computing in Engineering Design and Manufacturing (WSC3), 21-30 June 1998, on the Internet (World-Wide Web). Hosted by

Cranfield University (<http://www.cranfield.ac.uk/wsc3/>), UK
 University of Bath, (<http://www.bath.ac.uk/Departments/Eng/wsc3/>), UK
 Nagoya University (<http://www.bioele.nuee.nagoya-u.ac.jp/wsc3/>), Japan
 Michigan State University (<http://garage.cps.msu.edu/wsc3/>), USA
 University of Cape Town (<http://www.uct.ac.za/conferences/wsc3/>), South Africa

Talk title: *Recent New Development in Evolutionary Programming*.

103. Invited plenary speaker at the *Workshop on the Methodology of Emergent Synthesis (WMES)*, Kobe, Japan, 26-27 March 1998. Talk title: *Evolutionary Computation and Its Application to Design*.
104. Invited plenary speaker at the *Second Aizu International Symposium on Parallel Algorithm/Architecture Synthesis (pAs-97)*, Aizu-Wakamatsu, Japan, 17-21 March 1997. Talk title: *Global Optimisation by Evolutionary Algorithms*.
105. Invited plenary speaker at the *1996 Japan-China Joint International Workshops on Information Systems*, Ashikaga, Japan, 4-5 October 1996. Talk title: *Exploiting Population Information in Evolutionary Learning*.
106. Invited plenary speaker at the *First Korea Evolutionary Computation Workshop*, KAIST, Taejon, Korea, 5 November 1994. Talk title: *Evolutionary Computation*.

9 Professional Activities

9.1 Conference Chair

1. General Chair of the 14th International Conference on Intelligent Data Engineering and Automated Learning (IDEAL'2013), Hefei, Anhui, China, 20-23 October 2013.
2. Co-chair of the 2013 IEEE Symposium on Computational Intelligence and Ensemble Learning, Singapore, 15-19 April 2013.
3. General Chair of the 5th International Conference on Learning and Intelligent Optimization (LION 5), 17-21 January 2011, Rome, Italy.
4. Co-chair of the Advisory Committee of the Third International Workshop on Advanced Computational Intelligence (IWACI2010), Suzhou, China, 25-27 August 2010.
5. Co-chair of the Advisory Committee of the International Conference on Swarm Intelligence (ICSI'2010), Beijing, China, 12-15 June 2010.
6. Co-chair of the 2008 International Workshop on Nature Inspired Computation and Applications (IWNICA'08), Hefei, Anhui, China, 27-29 May 2008.
7. Co-chair of the 2008 UK-China Joint Workshop on "From Nature to Computing and Back", 21-25 February 2008, Shanghai, China.
8. General Co-chair of the 8th International Conference on Intelligent Data Engineering and Automated Learning (IDEAL'07), 16-19 December 2007, Birmingham, UK.

9. Co-chair of the First IEEE Symposium on Foundations of Computational Intelligence (FOCI'07), 1-5 April 2007, Honolulu, Hawaii, USA.
10. General Co-chair of the 2006 UK-China Workshop on Nature Inspired Computation and Applications, 23-27 October 2006, Hefei, China.
11. General Co-chair of the Sixth International Conference on Simulated Evolution And Learning (SEAL'06), 15-18 October 2006, Hefei, Anhui, China.
12. Proceedings chair of the Ninth International Conference on Parallel Problem Solving from Nature (PPSN IX), Reykjavík, Iceland, 9-13 September 2006.
13. Conference co-chair of the 4th International Conference on Computational Intelligence in Economics and Finance (CIEF'05), July 21 - 26, 2005, Salt Lake City Marriott-City Center, Salt Lake City, Utah, USA.
14. Technical co-chair of the 2004 International Workshop on Nature Inspired Computation and Applications and Chair of the 2004 UK-China Workshop on Nature Inspired Computation and Applications, 25-29 October 2004, Hefei, China.
15. Honorary chair of the First Brazilian Workshop on Evolutionary Computation (BEC'2004), São Luís, Maranhão, Brazil, 29 September 2004.
16. General chair of the Eighth International Conference on Parallel Problem Solving from Nature (PPSN VIII), Birmingham, UK, 18-22 September 2004.
17. Conference co-chair of the Third International Workshop on Computational Intelligence in Economics and Finance (CIEF'2003), Embassy Suites Hotel and Conference Center, Cary, North Carolina, USA, 26-30 September 2003.
18. Co-chair of the International Advisory Committee of the IEEE International Conference on Neural Networks & Signal Processing (ICNNSP'03), Nanjing, P. R. China, 14-17 December 2003.
19. Regional Program Co-Chair (Europe & Africa) of the 5th IEEE International Symposium on Computational Intelligence in Robotics and Automation (CIRA 2003), Kobe, Japan, July 16-20, 2003.
20. Special sessions chair of the joint conferences ICONIP'02-SEAL'02-FSKD'02 (the 9th International Conference on Neural Information Processing, the 4th Asia-Pacific Conference on Simulated Evolution And Learning, and the 2002 International Conference on Fuzzy Systems and Knowledge Discovery), 18-22 November 2002, Singapore.
21. Workshop chair of the 2002 UK Workshop on Computational Intelligence (UKCI'02), Birmingham, UK, 2-4 September 2002.
22. Programme committee chair of the 2002 Congress on Evolutionary Computation (CEC'2002) as part of WCCI'2002, Hilton Hawaiian Village, Honolulu, Hawaii, 12-17 May 2002.
23. Conference co-chair of the Second International Workshop on Computational Intelligence in Economics and Finance (CIEF'2002), Research Triangle Park, North Carolina, USA, 8-13 March 2002.
24. General co-chair of the Fourth International Conference on Computational Intelligence and Multimedia Applications (ICCIMA'01), 30 October - 1 November 2001, Shonan International Village, Yokusika City, Japan.
25. General chair of the First IEEE Symposium on Combinations of Evolutionary Computation and Neural Networks (ECNN'2000), May 11-12, 2000, San Antonio, TX, USA.
26. Programme committee co-chair of the Sixth International Conference on Parallel Problem Solving from Nature (PPSN VI), Paris, France, 16-20 September, 2000.

27. Special sessions chair of the 2000 Congress on Evolutionary Computation (CEC'2000), 16-19 July 2000, La Jolla Marriot Hotel, La Jolla, CA, USA.
28. Programme committee co-chair of the Third Asia-Pacific Conference on Simulated Evolution And Learning (SEAL2000), Nagoya Congress Center, Nagoya, Japan, 25 - 27 October 2000.
29. Conference co-chair of The First International Workshop on Computational Intelligence in Economics and Finance (CIEF'2000), Atlantic City, New Jersey, U.S.A., February 27-March 3, 2000.
30. Programme committee co-chair of the Third International Conference on Computational Intelligence and Multimedia Applications (ICCIMA'99), New Delhi, India, 23-26 September 1999.
31. Programme committee co-chair of the 1999 Congress on Evolutionary Computation (CEC'99), Washington DC, USA, 6-9 July 1999.
32. Programme committee co-chair of the Second Asia-Pacific Conference on Simulated Evolution and Learning (SEAL'98), Canberra, Australia, 24-27 November 1998.
33. Programme committee vice co-chair of the 1998 IEEE International Conference on Evolutionary Computation (ICEC'98), 5-9 May 1998, Anchorage, Alaska, USA.
34. Programme committee co-chair of the Second Japan-Australia Joint Workshop on Intelligent and Evolutionary Systems, Kyoto, Japan, 12-14 November 1998.
35. The Australian co-organiser of the Australia-Japan Joint Workshop on Intelligent and Evolutionary Systems, Canberra, Australia, 21-22 November 1997.
36. Special sessions chair of the First IEEE International Conference on Intelligent Processing Systems (IEEE ICIPS'97), 20-24 October 1997, Beijing, China.
37. Programme committee co-chair of the 1997 IEEE International Conference on Evolutionary Computation (ICEC'97), 14-17 April 1997, Indianapolis, IN, USA.
38. Programme committee chair of the International Conference on Computational Intelligence and Multimedia Applications (ICCIMA'97), 10-12 February 1997, Griffith University, Gold Coast, Australia.
39. Programme committee co-chair of the First Asia-Pacific Conference on Simulated Evolution And Learning (SEAL'96), Taejon, Korea, 9-12 November 1996.
40. Programme committee chair of the Eighth Australian Joint Conference on Artificial Intelligence (AI'95), Canberra, Australia, 13-17 November 1995.
41. The Australian coordinator of the First Korea-Australia Joint Workshop on Evolutionary Computation, Taejon, Korea, 26-29 September 1995.
42. Chair of the organising committee of the AI'94 Workshop on Evolutionary Computation, Armidale, NSW, Australia, 21-22 November 1994.
43. Chair of the organising committee of the AI'93 Workshop on Evolutionary Computation, Melbourne, Australia, 16 November 1993.

9.2 Conference Committee Memberships

1. Member of the programme committee of the 11th International Workshop on Foundations of Genetic Algorithms XI (FOGA'2011), 5-9 January 2011, Schwarzenberg, Austria.
2. Member of the programme committee of the 11th International Conference on Parallel Problem Solving from Nature (PPSN'2010), 11-15 September 2010, Krakow, Poland.

3. Member of the programme committee of the 9th International Conference on Evolvable Systems — From Biology to Hardware, 6-8 September 2010, York, UK.
4. Member of the programme committee of the 2010 IEEE Congress on Evolutionary Computation (CEC'2010), 18-23 July 2010, Barcelona, Spain.
5. Member of the International Advisory Committee of the 5th International Conference on Hybrid Artificial Intelligence Systems, San Sebastian, Spain, 23-25 June of 2010.
6. Member of the International Advisory Committee of the 8th International Conference on Machine Learning and Applications (ICMLA'2009), Miami, Florida, USA, 13-15 December 2009.
7. Member of the International Advisory Committee of the 10th International Conference on Intelligent Data Engineering and Automated Learning (IDEAL'09), 23-26 September 2009, Burgos, Spain.
8. Member of the International Advisory Committee of the 4th International Conference on Hybrid Artificial Intelligence Systems, Salamanca, Spain, 10-12 June 2009.
9. Member of the programme committee of the 2009 Symposium on Experimental Algorithms (SEA'2009), 3-6 June 2009, Dortmund, Germany.
10. Member of the International Advisory Committee of the 9th International Conference on Intelligent Data Engineering and Automated Learning (IDEAL'08), 2-5 November 2008, Daejeon, Korea.
11. Member of the programme committee of the 10th International Conference on Parallel Problem Solving From Nature (PPSN X), 13-17 September 2008, Dortmund, Germany.
12. Member of the programme committee of the 5th International Conference on Ecological Informatics (ISEI5), December 4-7, 2006, Santa Barbara, CA, USA.
13. Member of the programme committee of the Second International Workshop on Biologically Inspired Approaches to Advanced Information Technology (Bio-ADIT 2006), 26-27 January 2006, Osaka University, Osaka, Japan.
14. Member of the programme committee of the 2005 Congress on Evolutionary Computation (CEC'05), 2-5 September 2005, Edinburgh, UK.
15. Member of the Advisory Board of the 2005 International Conference on Natural Computation (ICNC'05) and the 2005 International Conference on Fuzzy Systems and Knowledge Discovery (FSKD'05), Changsha, Hunan, China, 27-29 August 2005.
16. Member of the programme committee of the 2005 NASA/DoD Conference on Evolvable Hardware (EH'05), June 29 - July 1, 2005, The Westin Grand, Washington DC, USA.
17. Member of the programme committee of the 2005 International Symposium on Intelligent Computation and Its Application (ISICA'2005), Wuhan, China, 4-6 April 2005.
18. Member of the programme committee of the IEEE Symposium on Computational Intelligence and Games (CIG'05), 4-6 April 2005, Essex University, Colchester, Essex, UK.
19. Member of the programme committee of the 5th International Conference on Recent Advances in Soft Computing (RASC2004), Nottingham, UK, 16-18 December 2004.
20. Member of the Advisory Committee for the 2004 IEEE Conference on Cybernetics and Intelligent System (CIS'04), Singapore, December 1-3, 2004.
21. Member of the international scientific committee of the 4th Conference of the International Society for Ecological Informatics (ISEI), Pusan National University, Busan, Republic of Korea, 24-28 October 2004.

22. Member of the programme committee of the 2004 International Conference on Intelligent Information Process (ICIIP'04), October 21-23, 2004, Beijing, P. R. China.
23. Member of the programme committee of the 8th Brazilian Symposium on Artificial Neural Networks (SBRN'04), São Luís, Maranhão, Brazil, 29 September – 1 October 2004.
24. Member of the programme committee of the Eighth International Conference on Knowledge-Based Intelligent Information & Engineering Systems, 20-24 September 2004, Wellington Institute of Technology, Wellington, New Zealand.
25. Member of the programme committee of the Fifth International Conference on Intelligent Data Engineering and Automated Learning (IDEAL'04), 25-27 August 2004, Exeter, UK.
26. Member of the programme committee of the 2004 Congress on Evolutionary Computation (CEC'04), 20-23 June 2004, Portland, USA.
27. Member of the Scientific Committee of the Sixth International Conference on Adaptive Computing in Design and Manufacture (ACDM 2004), April 20th - 22nd, 2004 at Engineers House, Clifton, Bristol, UK.
28. Member of the programme committee of the First International Workshop on Biologically Inspired Approaches to Advanced Information Technology, 29-30 January 2004, Swiss Federal Institute of Technology, Lausanne, Switzerland.
29. Member of the International Advisory Board of the 2nd International conference on Computational Intelligence, Robotics and Autonomous Systems (CIRAS 2003), December 15-18, 2003, Singapore.
30. Member of the programme committee of the 2003 Congress on Evolutionary Computation (CEC'03), Canberra, Australia, 8-12 December 2003.
31. Senior researcher and lecturer at the The 6th EvoNet Summer School in Evolutionary Computing, University of Parma, Parma, Italy, 24-31 August 2003.
32. Invited tutorial speaker at the INtroductory TutoRials in Optimization, Search and decision support methodologies (INTROS'03), 12 August 2003, Nottingham, UK.
33. Invited speaker at the BCS-PAR Summer School on Pattern Recognition Exeter University, Exeter, UK, 28 July - 01 August 2003.
34. Invited tutorial speaker at the 2003 Genetic and Evolutionary Computation Conference (GECCO-2003), Chicago, 12-16 July 2003.
35. Member of the programme committee of the Fourth International Workshop On Memetic Algorithms (WOMA-IV, 2003), July 12-16, 2003, Chicago, USA.
36. Member of the programme committee of the ICALP'03 Workshop on Fundamentals of Evolutionary Algorithms, 4-6 July 2003, Eindhoven, The Netherlands.
37. Invited tutorial speaker at the IEEE Swarm Intelligence Symposium (SIS'03), 24-26 April 2003, Indianapolis, Indiana, USA.
38. Member of the programme committee of the Fourth International Conference on Intelligent Data Engineering and Automated Learning (IDEAL'03), March 21-23, 2003, Hong Kong Convention and Exhibition Centre, Hong Kong, P. R. China.
39. Member of the programme committee of the 18th IEEE International Symposium on Intelligent Control (ISIC), the Westin Galleria Hotel, Houston, USA, 5-8 October 2003.
40. Member of the programme committee of The 2003 NASA/DoD Conference on Evolvable Hardware (EH'03), July 9-11, 2003, The Westin Michigan Avenue, Chicago, Illinois, USA.

41. Member of the programme committee of the 16th International Conference on Industrial & Engineering Application of Artificial Intelligence & Expert Systems (IEA/AIE-2003), Loughborough, UK, 23-26 June 2003.
42. Member of the programme committee of the 5th International Conference on Evolvable Systems: From Biology to Hardware (ICES'03), Trondheim, Norway, 17-20 March 2003.
43. Member of the programme committee of the 4th International Conference on Recent Advances in Soft Computing (RASC'02), Nottingham, United Kingdom, 12-13 December 2002.
44. Member of the programme committee of the Seventh International Conference on Parallel Problem Solving from Nature (PPSN VII), Granada, Spain, 7-12 September 2002.
45. Member of the programme committee of the Seventh International Workshop on Foundations of Genetic Algorithms VII (FOGA7), Torremolinos, Spain, 4-6 September 2002.
46. Member of the programme committee of the 2002 NASA/DoD Conference on Evolvable Hardware, July 15 - 18, 2002, Holiday Inn Select, Old Town Alexandria, VA, USA.
47. Member of the International Scientific Committee of the Third Conference of the International Society of Ecological Informatics (ISEI), Rome, Italy, 26-30 August 2002.
48. Member of the programme committee of the Fourteenth International Conference on Software Engineering and Knowledge Engineering (SEKE'02), Ischia, Italy, July 15-19, 2002.
49. Member of the programme committee of the 2001 IEEE International Conference on Data Mining (ICDM'01), November 29 - December 2, 2001, Silicon Valley, California, USA.
50. Member of the programme committee of the 2001 International Conference on Computational Intelligence for Modelling, Control and Automation (CIMCA'2001), 9-11 July 2001, Las Vegas, USA.
51. Member of the programme committee of the Third International Conference on Information, Communications and Signal Processing (ICICS'2001), 15-18 October 2001, Singapore.
52. Member of the programme committee of the UK Workshop on Computational Intelligence (UKCI'01), Edinburgh, UK, 10-12 September 2001.
53. Member of the programme committee of the Third NASA/DoD Workshop on Evolvable Hardware (EH'2001), 12-14 July 2001, Long Beach, California, USA.
54. Member of the programme committee of the Fourth European Conference on Genetic Programming (EuroGP2001), 18-20 April 2001, Lake Como, Italy.
55. Member of the programme committee of the 10th International Conference on Computing and Information (ICCI'2000), Kuwait, November 18-21, 2000.
56. Member of the programme committee of the International Conference on Artificial and Computational Intelligence for Decision, Control and Automation in Engineering and Industrial Applications (ACIDCA'2000), Monastir, Tunisia, 22-24 March 2000.
57. Member of the programme committee of the Third International Conference on Evolvable Systems: From Biology to Hardware (ICES'2000), 17-19 April 2000, Edinburgh, UK.
58. Member of the programme committee of the Third International Workshop on Frontiers in Evolutionary Algorithms (FEA'2000), Atlantic City, New Jersey, USA, February 27 - March 3, 2000.
59. Member of the International Scientific Committee of the Second International Conference on Applications of Machine Learning to Ecological Modelling, Adelaide, Australia, 27 November - 1 December 2000.

60. Member of the conference committee of the Second Asia-Pacific Conference on Genetic Algorithms and Applications (APGA'2000), Hong Kong, 3-5 May 2000.
61. Member of the programme committee of the Third European Conference on Genetic Programming (EuroGP2000), 15-16 April 2000, Edinburgh, UK.
62. Member of the programme committee of the Third Australia-Japan Joint Workshop on Intelligent and Evolutionary Systems, Canberra, Australia, 22-24 November 1999.
63. Member of the programme committee of the 6th International Conference on Neural Information Processing (ICONIP'99), Perth, Australia, 16-20 November 1999.
64. Member of the programme committee of the International Workshop on Emergent Synthesis (IWES'99), December 6-7, 1999, Kobe, Japan.
65. Member of the programme committee of the 4th Online World Conference on Soft Computing in Industrial Applications (WSC4), 21-30 September 1999, On the Internet (World-Wide Web). Hosted by: Muroran Institute of Technology, Japan; Helsinki University of Technology, Finland; Nagoya University, Japan; Cranfield University, United Kingdom; and University of Bath, United Kingdom.
66. Member of the International Advisory Board of the 1st Asia-Pacific Conference on Intelligent Agent Technology, Hong Kong, December 14-17, 1999.
67. Member of the programme committee of the International Conference on Computational Intelligence for Modelling, Control and Automation (CIMCA'99), Vienna, Austria, 17-19 February 1999.
68. Member of the programme committee of the Third International Symposium on Artificial Life and Robotics (AROBIII'98), Beppu, Oita, Japan, 19-21 January 1998.
69. Member of the programme committee of the Second International Conference on Evolvable Systems: From Biology to Hardware (ICES'98), Lusanne, Switzerland, 24-26 September 1998.
70. Member of the programme committee of the Fifth International Conference on Parallel Problem Solving from Nature (PPSN V), Amsterdam, The Netherlands, September 27 - October 1, 1998.
71. Member of the programme committee of the Second International Conference on Computational Intelligence and Multimedia Applications (ICCIMA'98), 9-11 February 1998, Monash University, Gippsland Campus, Churchill, Australia.
72. Member of the programme committee of the Seventh Annual Conference on Evolutionary Programming (EP'98), 25-27 March 1998, San Diego, USA.
73. Member of the programme committee of the 2nd Pacific-Asia Conference on Knowledge Discovery and Data Mining (PAKDD-98), 30 September – 2 October 1998, Melbourne, Australia.
74. Member of the programme committee of the Second IEEE International Conference on Intelligent Information Processing Systems (ICIPS'98), Gold Coast, Australia, 4-7 August 1998.
75. Member of the programme committee of the World Multiconference on Systemics, Cybernetics and Informatics (SCI'98), 20-24 July 1998, Orlando, Florida, USA.
76. Member of the international scientific committee of the 3rd On-line World Conference on Soft Computing in Engineering Design and Manufacturing (WSC3), 21-30 June 1998, Hosted on the Internet at <http://www.cranfield.ac.uk/wsc3/>.
77. Member of the programme committee of the Eleventh Australian Joint Conference on Artificial Intelligence (AI'98), Brisbane, Australia, 13-17 July 1998.
78. Member of the programme committee of the World Multiconference on Systemics, Cybernetics and Informatics (SCI'97), Caracas, Venezuela, 7-11 July 1997.

79. Member of the programme committee of the Tenth Australian Joint Conference on Artificial Intelligence (AI'97), Perth, Australia, 1–4 December 1997.
80. Member of the programme committee of the Tenth International Conference on Industrial & Engineering Applications of Artificial Intelligence & Expert Systems (IEA/AIE-97), 10–13 June 1997, Atlanta, USA.
81. Member of the programme committee of the Sixth Annual Conference on Evolutionary Programming (EP'97), 13–16 April 1997, Indianapolis, IN, USA.
82. Member of the programme committee of the Seventh International Conference on Genetic Algorithms (ICGA'97), 19-23 July 1997, East Lansing, MI, USA.
83. Member of the international organising committee of the Micro-Robot World Cup Soccer Tournament (MIROSOT'96), 9–12 November 1996, Taejon, Korea.
84. Member of the programme committee of the International Discourse on Fuzzy Logic and the Management of Complexity (FLAMOC'96), 15–18 January 1996, Sydney, Australia.
85. Member of the programme committee of the 1995 IEEE International Conference on Evolutionary Computation (ICEC'95), 29 November – 1 December 1995, Perth, Australia.
86. Member of the programme committee of the Eighth International Conference on Industrial & Engineering Applications of Artificial Intelligence & Expert Systems (IEA/AIE-95), 6–8 June 1995, Melbourne, Australia.
87. Member of the programme committee of the Seventh Australian Joint Conference on Artificial Intelligence (AI'94), 21–25 November 1994, Armidale, NSW, Australia.
88. Member of the programme committee of the Third International Conference for Young Computer Scientists (ICYCS'93), 15–17 July 1993, Beijing, P. R. China.

10 Refereeing

1. External examiner for 46 PhD/Habilitat and 7 Master theses from 42 universities in Australia, Austria, Germany, Hong Kong, Iceland, Malaysia, Singapore, South Africa, Spain, Switzerland, and UK.
2. Referee of various grant and fellowship applications for EPSRC (UK), Leverhulme Trust (UK), Royal Society (UK), European Commission, Marsden Fund Council (New Zealand), Australia Research Council (Australia), University Grants Committee (Hong Kong), Swiss National Science Foundation, Israel Science Foundation, Netherlands Organisation for Scientific Research (NWO), Science Foundation Ireland (SFI), National Natural Science Foundation of China (NSFC), Deakin University (Australia), Central Queensland University (Australia), City University of Hong Kong (China), and Nanyang Technological University (Singapore).
3. External examiner of the MSc programme in Machine Learning at the University of Bristol, UK. (2001 - 2006)
4. External examiner of the MSc programmes at King's College, UK. (2007 - 2011)
5. External examiner of the MSc programmes at the University of Surrey, UK (2010-14)
6. Referee for numerous journal and conference papers.

11 Management Duties

1. REF2014 Lead for Computer Science at the University of Birmingham.
2. Director of the USTC-Birmingham Joint Research Institute of Intelligent Computation and Its Applications, the University of Birmingham and the University of Science and Technology of China. (2010 -)
3. Director of The Centre of Excellence for Research in Computational Intelligence and Applications (CERCIA), the University of Birmingham, Edgbaston, Birmingham B15 2TT, UK. (2003 -)
4. Research Director of the School of Computer Science, the University of Birmingham, UK. (2006 - 2012).
5. Chair of the Research Committee of the School of Computer Science, the University of Birmingham, UK. (2007 - 2012).
6. Deputy Head of School of Computer Science, the University of Birmingham, UK, from August 2000 to February 2004 and from August 2004 to August 2007.
7. Chair of Panel D of the Universities UK ORS (Overseas Research Students) Award Committee (2005), and a member in 2003-04.
8. Member of the University Internationalisation Strategy Group (2005).
9. Member of the University CTA Management Committee (2005 - 2010).
10. Dean's Consultative Panel for Promotion to Senior Lecturers and Senior Research Fellows, Faculty of Physical Sciences and Engineering, University of Birmingham, UK (2004 - 2006).
11. Member of School's Strategy Committee, Research Committee, Staffing Committee, Research Students Monitoring Group, and Industrial Liaison Panel. (Previously also in Management Committee, Teaching Committee and Academic Standard Monitoring Group).
12. RAE Lead for Computer Science in 2001 and Deputy Lead for RAE2008.
13. Programme director for Bioinformatics (BSc) (2002 - 2003)
14. Programme Director and Admissions Tutor for MSc/GradDip/GradCert in Natural Computation (2000 - 2003)
15. Programme Directors for MSc/GradDip/GradCert in Natural Computation and MSc in Intelligent Systems Engineering (2007 - 2011)
16. Admissions team member for MSc in Advanced Computer Science (2002 – 2003)

12 Research Student Supervision

I have successfully supervised 33 and co-supervised 7 PhD students. Currently I am supervising 8 PhD students at Birmingham. I am also supervising several PhD students in China.

13 External Grants

I am the PI of all the following grants unless noted otherwise.

15/3/2016 - 14/3/2019 Royal Society Newton Advanced Fellowship. "Data-Driven Meta-heuristic Search". £90,000. (Fellow: Ke Tang from China, UK Host: Xin Yao)

- 1/1/2014 - 31/12/2017 National Science Foundation of China. “High Performance Evolutionary Computation”. RMB2,000,000. (Collaborative Research Funds for Researchers from Overseas, Hong Kong and Macau.)
- 25/3/2013 - 24/9/2016 EPSRC (EP/J00930X/1). “New Control Methodology for the Next Generation of Engine Management Systems,” £563,195. (PI: Hongming Xu, Co-I: Xin Yao)
- 1/3/2013 - 30/9/2014 Honda Research Institute Europe GmbH. “Simultaneous Engineering in Aerodynamic Design”. £47,900.
- 25/2/2013 - 24/2/2017 EPSRC (EP/K001523/1). “Evolutionary Computation for Dynamic Optimisation in Network Environments.” £512,325.
- 1/6/2012 - 31/5/2018 EPSRC (EP/J017515/1). “DAASE: Dynamic Adaptive Automated Software Engineering.” £6,834,903. (PI: Mark Harman. Co-Is: Edmund Burke, John Clark, Jens Krinke and Xin Yao) Birmingham share for which I lead: £915,710.
- 10/9/2012 - 31/3/2013 EPSRC KTS (Knowledge Transfer Secondments). “Competitor Intelligence.” £32,461.
- 10/9/2012 - 31/3/2013 EPSRC KTS (Knowledge Transfer Secondments). “Least Cost Fulfilment.” £29,656.
- 2012 - 2014 ARC Discovery Grant (DP120102205), “Novel Decomposition Methods for Large Scale Optimization”, \$317K, 2012 - 2014. (Chief Investigator: Xiaodong Li, Partner Investigator: Xin Yao. One of my former PhD students is the postdoctoral fellow employed on this project.)
- 12/12/2011 - 11/6/2012 EPSRC KTS (Knowledge Transfer Secondments) (EP/J501414/1). “Market Based Control of Complex Computational Systems.” £19,983.
- 30/5/2011 - 29/5/2012 EPSRC KTS (Knowledge Transfer Secondments). (EP/H500294/1). “Dynamic Optimization in Automotive Applications”. £33,375.
- 29/4/2011 - 28/4/2015 EPSRC (EP/I010297/1). “Evolutionary Approximation Algorithms for Optimisation: Algorithm Design and Complexity Analysis.” £469,838.
- 1/1/2011 - 31/12/2013 European Commission. FP7-ICT-2009-6, Challenge 2. “iSense: Making Sense of Nonsense”. EURO 453,526.
- 1/1/2011 - 31/12/2012 National Science Foundation of China. “Evolutionary Computation Theory and Applications”. RMB200,000. (Collaborative Research Funds for Researchers from Overseas, Hong Kong and Macau.)
- 21/10/2010 - 31/10/2011 DSTO, The Commonwealth of Australia. “Fleet designs for Robustness and Adaptiveness. (Stage 2)” £62,360.
- 1/9/2010 - 31/8/2014 European Commission. ICT Call 5: FP7-ICT-2009-5. “EPiCS: Engineering Proprioception in Computing Systems.” EURO 681,385.
- 2/8 - 24/9/2010 Nuffield Foundation. “Evolutionary optimization and exploration of pattern generation.” £1,440.
- 1/10/2010 - 30/9/2014 European Commission. Call: FP7-PEOPLE-2009-IRSES. “NICaiA: Nature Inspired Computation and its Applications.” EURO 799,200.
- 1/2/2010 - 31/1/2013 Honda Research Institute Europe GmbH. “Integrating functional design evaluation methods in aesthetic design processes.” EURO 150,000.
- 1/2/2010 - 31/1/2011 Honda Research Institute Europe GmbH. “Divergence of Neural Structures in Changing Environments.” EURO 56,000.

- 21/10/2009 - 20/10/2010 DSTO, The Commonwealth of Australia. "Fleet designs for Robustness and Adaptiveness." £47,594.
- 15/3/2009 - 30/9/2012 Honda Research Institute Europe GmbH. "Co-evolution of Neural Control and Body Plan under Limited Resources." EURO 75,000.
- 21/7/2008 - 20/7/2009 EPSRC (EP/G002339/1) "Cooperatively Coevolving Particle Swarms for Large Scale Optimisation." £28,341.
- 1/4/2008 - 31/3/2011 EPSRC (EP/F033087/1). "Multi-disciplinary Optimisation and Data Mining at Birmingham." £360,909.
- 15/2/2008 - 31/12/2008 Honda Research Institute Europe GmbH. "DOAR 2: Design Optimization with Adaptive Representations 2." EURO 40,000.
- 1/4/2008 - 31/3/2009 EPSRC (EP/G002150/1). "Services for Intelligent Mobility Management (SIMM)." £184,162. I am a member of this cluster grant. The PI is Prof. John Polak from Imperial College. The Birmingham share of this grant is £4211.
- 1/12/2007 - 31/5/2011 EPSRC (EP/E058884/1). "Evolutionary Algorithms for Dynamic Optimisation Problems: Design, Analysis and Applications." £263,969. Additionally, BT contributed £60k and Honda Research Institute Europe GmbH contributed 64k euros. This is part of a linked project with the University of Leicester, where £307,469 was awarded.
- 1/9/2006 - 30/4/2010 EPSRC BT Industrial CASE Studentship. "Autonomic solutions for virtualised ICT." £60,864 and £29,000 from BT.
- 1/11/2006 - 31/10/2008 Honda Research Institute Europe GmbH. "An artificial environment with human interaction for the evolution of brain-like processing patterns." EURO 81,078.
- 15/2/2006 - 11/8/2006 Honda Research Institute Europe GmbH. "DOAR: Design Optimization with Adaptive Representations." EURO 64,000.
- 10/2006 The Royal Society. "Follow-Up Networking with China." £11,970.
- 3/1/2006 - 28/12/2011 EPSRC (EP/D052785/1). "SEBASE: Software Engineering By Automated SEarch." £764,524.
- 1/10/2005 - 30/9/2008 Honda Research Institute Europe GmbH. "The co-evolution of functional information and information control on the DNA." EURO 123,998.
- 1/11/2005 - 31/10/2006 Honda Research Institute Europe GmbH. "An artificial environment with human interaction for the evolution of brain-like processing patterns." EURO 40,539.
- 1/5/2005 - 30/4/2008 EPSRC (EP/C520696/1). "Computational Complexity Analysis of Evolutionary Algorithms." £291,439.
- 1/3/2005 - 28/2/2006 Honda Research Institute (Europe) GmbH. "Evolutionary Computation Benchmarking." EURO 20,000.
- 1/1/2005 - 31/12/2007 National Natural Science Foundation of China. "Theoretical Analysis of Evolutionary Algorithms." RMB¥ 400,000.
- 1/10/2004-30/9/2009 EPSRC (GR/T10671/01). "Market Based Control of Complex Computational Systems." £281,633.
- 09/05/2005-08/05/2008 PPARC (PP/C503138/1). "Designer Algorithms for Astronomical Data Mining." £152,210. (PI: Trevor Ponman, I'm one of the co-Is.)

- 1/1-31/12/2005 EPSRC (EP/C514297/1). “Nature Inspired Creative Design — A Design for the 21st Century Research Cluster.” £50,796. (PI: Thorsten Schnier; Co-Is: Xin Yao, Bob Hendley, Russell Beale)
- 15/11/2004-17/2/2005 Severn Trent Water. “Competition Scenario Model — Phase 2.” £26,500.
- 15/11/2004-15/4/2005 ATMS Ltd. “Resource Allocation for Optimal Execution of a Dynamic Task List in Warehouses,” £39,222.
- 1/4/2005-31/3/2006 Australian Research Council Linkage — International. “Ensembles of Collaborative Neural Networks.” A\$14,000. (Australia PI: Hussein Abbass, UK PI: Xin Yao).
- 25-29/10/2004 The Royal Society and the National Natural Science Foundation of China. “China-UK Science Network,” £4,000 and RMB¥40,000.
- 1/2-30/4/2004 Wellcome Trust Value in People Award for Dr X. Li. “Computational Intelligence for Epileptic Seizure Prediction in EEG.” £8,958. (PIs: Xiaoli Li, Xin Yao, John Jefferys)
- 1/1/2004-31/12/2006 EPSRC Thales CASE Studentship. “Target Classification and Recognition Using Neural Network Ensembles.” £55,110.
- 1/12/2003-30/9/2004 Honda Research Institute (Europe) GmbH. “Support to The 8th International Conference on Parallel Problem Solving from Nature (PPSN VIII), 18-22 September 2004, Birmingham, UK.” EURO10,000.
- 1/11/2003-30/4/2005 EPSRC (GR/S63472/01). “Prisoner’s Dilemma Competition: Celebrating the 20th Anniversary.” £11,870.
- 1/7/2003-31/12/2003 EPSRC (GR/S63847/01). “Adaptive Divide-and Conquer — Nature’s Way to Cope With Complexity.” £59,939.
- 1/3/2003-28/2/2006 Chinese Academy of Sciences. “Neural Network Ensembles and Co-Evolution.” RMB¥400,000.
- 1/1/2003-31/3/2007 Advantage West Midlands (AWM). “Centre of Excellence in Computational Intelligence and Applications (CECIA).” £2,572,407.
- 15/3/2003-31/3/2006 Advantage West Midlands (AWM). “High Performance Computing Facility and Business Incubation Centre.” £250,000.
- 6/12/2002-7/3/2003 Severn Trent Water. “Competition Modelling.” £14,738.
- 1/1/2003-31/12/2005 Australian Research Council (DP0345279). “Adaptive Agents Simulation of Freshwater Ecosystems.” A\$167,213. (Investigators: Friedrich Recknagel, Xin Yao and Peter Whigham.)
- 21/11/2002-20/11/2005 HONDA R&D Europe (Deutschland) GmbH. “Automatic Problem Decomposition Using Co-evolution and Ensembles.” EURO100,000.
- 1/10/2001-31/3/2002 HONDA R&D Europe (Deutschland) GmbH. “Automatic Problem Decomposition Using Co-evolution and Ensembles.” EURO20,000.
- 1/9/2001-28/2/2003 EPSRC (GR/R52541/01). “Average Computation Time of Evolutionary Algorithms for Combinatorial Optimisation Problems.” £62,432.
- 2-4/9/2002 EUNITE (The European Network on Intelligent Technologies for Smart Adaptive Systems). “UKCI’02 (the 2002 UK Workshop on Computational Intelligence,” Birmingham). EURO 2,000.
- 28/1/2002-27/1/2003 EPSRC (GR/R47394/01). “Theory of Evolutionary Computation — Application for Visiting Fellowship.” £39,148.85. (PI: Jon Rowe, Co-Is: Xin Yao and Riccardo Poli.)

- 1/7/2001-30/6/2002 European Commission (ASI/B7-301/97/0126-08). “Natural Computation Techniques for Intelligent Manufacturing.” EURO197,285.
- 10/01-09/02/2001 The Royal Society. Visiting Fellowship for Professor Chang-Yong Lee. £2,020 (subsistence only). International travel was awarded by the Korean Science and Engineering Foundation (KOSEF).
- 1/4/2001-30/9/2006 EPSRC (GR/N29969/01). “MTP in Natural Computation.” £534,923. In addition, BT (British Telecom) has provided £13,350 and aQtive, Ltd. £165,000.
- 2000-2003 Marconi Communications, Ltd. “Evolvable Hardware and Automatic Discovery of Unconventional Designs.” £225,576.
- 2000 The Royal Society. Visiting Fellowship for Dr Nabil Mahmoud Hewahi. £1,000.
- 2000 EPSRC Equipment Grant. “Bioinformatic, Functional and Image Analysis in Biological Systems.” £100,000. (PI: Ela Claridge; I was one of the Co-Is.)
- 1999-2002 EPSRC BT/CASE Studentship. “Combinations Between Evolutionary Computation and Neural Networks.” EPSRC funding ≈ £30,000 and BT funding £18,600.
- 1999 ARC (Australia Research Council). “Automatic Acquisition of Strategies by Co-evolutionary Learning.” \$15,500.
- 1998 ARC. “Evolutionary Algorithms in Global Optimisation and Design.” \$8,500.
- 1998 ARC. “Automatic Acquisition of Strategies by Co-evolutionary Learning.” \$17,000.
- 1997-98 ARC. “A Study of Evolutionary Approach to Strategy Learning.” \$27,000 (\$12,000 in 1997 and \$15,000 in 1998).
- 1997 ARC. “Automatic Acquisition of Strategies by Co-evolutionary Learning.” \$9,360.
- 1996/1997 Rector’s Special Research Grant. “Fast Evolutionary Programming.” \$4,000.
- 1996 ARC. “Evolutionary Design of Artificial Neural Networks.” \$20,000.
- 1995/1996 Australian Academy of Science’s (AAS) Exchange Program with China. A travel grant was awarded to support my cooperative research with Chinese scientists in Beijing.
- 1995 AAS’s Exchange Program with Korea. A travel grant was awarded to me to support six Australian scientists to attend the Joint Korea-Australia Workshop on Evolutionary Computation in Taejon, Korea.
- 1995 ARC. “Evolutionary Design of Artificial Neural Networks.” \$18,679.
- 1994 ARC. “Evolutionary Design of Artificial Neural Networks.” \$18,000.
- 1994/1995 Rector’s Special Research Grant. “A Comparative Study of Genetic Algorithms and Simulated Annealing.” \$4,000.
- 1993/1994 Rector’s Special Research Grant. “Optimisation by Evolutionary and Genetic Algorithms.” \$7,120.
- 1993/1994 ATERB (Australian Telecommunications and Electronics Research Board). “Simulated Annealing and Its Application in Dynamic Call Routing in Circuit-Switched Telecommunications Networks.” \$3,000.
- 1989–1991 National “863” High-Tech Project of China. “Computer Architectures and Software Environments for Neural Information Processing (No. 863-306-103-3).” (I was a Co-Investigator.) RMB¥ 200,000 (three years).

1987 Ministry of Electronic Industry of China Research Grant. “High-Level Microcode Generation Systems.” (I was a Co-Investigator.) *RMB¥* 6,000 (one year).

14 Other Funding

In addition to the grants awarded to me directly, I have also attracted funding indirectly from foreign governments/organisations to support their researchers to work with me. All of the following researchers were self-funded.

- 14/9/2015 - 13/9/2016 Dr. Guofu Zhang, School of Computer and Information, Hefei University of Technology, Hefei 230009, China.
- 20/8/2015 - 19/8/2016 Mr. Mang Wang, School of Information Science and Technology, University of Science and Technology of China, Hefei, Anhui, 230027, China.
- 20/12/2014 - 19/12/2015 Dr. Ming Yang, School of Computer Science, China University of Geosciences, Wuhan 430074, China.
- 16/6/2014 - 15/6/2015 Dr. Xin Du, School of Software Engineering, Fujian Normal University, Fuzhou 350108, China.
- 16/6/2014 - 15/6/2015 Dr. Xiuli Wu, Department of Logistics Engineering, School of Mechanical Engineering, University of Science and Technology Beijing, 30 Xueyuan Road, Haidian District, Beijing 100083, China.
- 6/4/2014 - 5/4/2014 Dr. Jianhua Jia, School of Information Engineering, Jingdezhen Ceramic Institute, JiangXi Province, China.
- 23/3/2014 - 22/3/2015 Dr. Yangyang Li, Key Laboratory of Intelligent Perception and Image Understanding of the Ministry of Education of China, Xidian University, Xi’an, Shaanxi 710071, China.
- 24/1/2014 - 23/1/2015 Mr. Yuan Yuan, Department of Computer Science and Technology, Tsinghua University, Beijing, China.
- 21/2/2014 - 20/2/2015 Mr. Lei Cai, School of Automation, Northwestern Polytechnical University, Xi’an, Shaanxi 71007, China.
- 15/2/2014 - 31/8/2014 Dr. Xinchao Zhao, Department of Mathematics, School of Science, Beijing University of Posts and Telecommunications, No.10 XiTuCheng Road, Haidian District, Beijing, 100876, China.
- 11/9/2013 - 10/9/2014 Dr. Ronghua Shang, Key Laboratory of Intelligent Perception and Image Understanding of the Ministry of Education of China, Xidian University, Xi’an, Shaanxi 710071, China.
- 22/4/2013 - 21/4/2014 Dr. Wei Fang, Key Laboratory of Advanced Process Control for Light Industry of the Ministry of Education, Department of Computer Science and Technology, Jiangnan University, No. 1800, Lihu Avenue, Wuxi, Jiangsu 214122, China.
- 2013 - 2014 Dr Mohamed-Mahmoud Ould-Sidi MEMMAH, UR1115, Plantes et Systèmes de culture Horticoles, INRA, Domaine Saint Paul, Site Agroparc, CS 40509, F-84914 Avignon Cedex 9, France.
- 15/1/2013 - 12/1/2014 Dr. Xiaoning Shen, School of Information and Control, Nanjing University of Information Science and Technology, Nanjing, Jiangsu 210044, China.
- 1/5/2012 - 30/4/2013 Dr. Yi-nan Guo, School of Information and Electrical Engineering, China University of Mining and Technology, Xuzhou 221116, China.
- 14/01/2012 - 09/01/2013 Dr. Jian Cheng, School of Information and Electrical Engineering, China University of Mining and Technology, Xuzhou, Jiangsu 221116, China.

- 15/6/2011 -15/9/2011 Mr. Francisco Fernández-Navarro, Research group “Aprendizaje y Redes Neuronales Artificiales (AYRNA)”, Department of Computer Science and Numerical Analysis, University of Cordoba, Rabanales Campus, “Albert Einstein” building, 3rd Floor, 14071 - Córdoba, Spain
- 10/6/2011 - 9/6/2012 Dr. Bahriye Basturk Atay, Department of Computer Engineering, Erciyes University, 38039 Melikgazi, Kayseri, Turkey.
- 10/6/2011 - 9/6/2012 Mr. Rustu Atay, Scientific Researches Unit, Erciyes University, 38039 Melikgazi, Kayseri, Turkey.
- 26/7-25/10/2010 Mr. Matteo De Felice, Italian National Agency for New Technologies, Energy and the Environment (ENEA), Lungotevere Thaon di Revel, 76-00196, Rome, Italy.
- 25/7-7/8/2010 and 6/9-15/10/2010 Dr. Michael Kirley, Department of Computer Science and Software Engineering, University of Melbourne, Victoria 3010, Australia.
- 2/6/2010-31/5/2011 Dr. Jinlong Li, School of Computer Science, University of Science and Technology of China. Hefei, Anhui 230027, P. R. China.
- 20/11/2009-19/11/2010 Dr. Huicong Wu, School of Information Science and Engineering, Hebei University of Science and Technology, 70# East Yuhua Road, Shijiazhuang, Hebei 050018, P.R. China.
- 5/10/2009-4/10/2010 Dr. Liping Wei, Institute of Computing Technology (ICT), Chinese Academy of Sciences (CAS), Beijing 100080, China.
- 16/6-15/9/2009 Mr. Matteo De Felice, Italian National Agency for New Technologies, Energy and the Environment (ENEA), Lungotevere Thaon di Revel, 76-00196, Rome, Italy.
- 20-24/10/2008 Dr. Frank Neumann, Max-Planck-Institut für Informatik, Department 1: Algorithms and Complexity, Building 46.1, Room 317, Stuhlsatzenhausweg 85, 66123 Saarbrücken, Germany.
- 8/10/2008-7/10/2009 Mr. Zhenyu Yang, Nature Inspired Computation and Applications Laboratory (NICAL), Department of Computer Science and Technology, University of Science and Technology of China, Hefei, Anhui 230027, China.
- 2/9/2008-31/3/2009 Mr. Weishan Dong, the Key Laboratory for Complex Systems and Intelligence Science, Institute of Automation, Chinese Academy of Sciences, Beijing 100080, China.
- 1/9/2008-28/2/2009 Mr. Yang Yu, Department of Computer Science and Technology, Nanjing University, 22 Hankou Road, Nanjing, JiangSu 210093, China.
- 15/8/2008-15/2/2009 Dr. Tapabrata Ray, School of Aerospace, Civil and Mechanical Engineering, University of New South Wales at Australian Defence Force Academy, Northcott Drive, Canberra, ACT 2600, Australia.
- 15/7-7/10/2008 Dr. Hisashi Handa, Dept. of Information Technology, Faculty of Engineering, Okayama University, Tsushima-naka 3-1-1, Okayama 700-8530, Japan.
- 14/7-19/9/2008 Dr. Xiaodong Li, School of Computer Science and Information Technology, RMIT University, GPO Box 2476v, Melbourne, 3001, Victoria, Australia.
- 14/7-14/9/2008 Mr. Juan Peralta Donate, Universidad Carlos III, Avenida De la Universidad 30, Leganés 28911, Madrid, Spain.
- 10/7-30/8/2008 Dr. Yi-Yuan Chiang, Department of Computer Science and Information Engineering, Vanung University, No.1, Vanung Rd, Chungli, Taoyuan, Taiwan 320.
- 30/6/2008-29/6/2009 Dr. Ricardo Becerra Landa, CINVESTAV-IPN Depto. de Computación, México, D.F. 07360.

- 31/1/2008-30/7/2008 Professor Tianshi Liu, School of Computer Science, Xi'an Shiyou University, Dian Zi 2nd Road 18, Xi'an, Shaanxi 710065, P. R. China.
- 10/1/2008-9/4/2008 Professor Shuang Cong, Department of Automation, University of Science and Technology of China, Hefei, Anhui 230027, P. R. China.
- 22/11/2007-5/11/2008 Mr. Li-Ning Xing, College of Information System and Management, National University of Defense Technology, Changsha, Hunan 410073, P.R. China.
- 18/11/2007-17/11/2008 Miss Jiali Yun, School of Computer Science and Information Technology, Beijing Jiaotong University, Beijing 100044, P.R. China.
- 14/10/2007-13/10/2008 Professor Naiqian Li, Department of Computer Science and Technology, Baoji University of Arts and Science, No. 44, Baoguang Road, Weibing District, Baoji, Shaanxi 721007, P. R. China.
- 31/10/2007-30/10/2009 Miss Yang Li, Department of Computer Science and Technology, University of Science and Technology of Beijing, Beijing 100083, P. R. China.
- 9/7/2007-29/12/2007 Professor Dunwei Gong, College of Information and Electrical Engineering, China University of Mining and Technology, Xuzhou 221008, P. R. China.
- 1/3/2007-31/8/2007 Miss Sunisa Rimcharoen, Department of Computer Engineering, Chulalongkorn University, Thailand.
- 5/2-28/3/2007 Mr. Ingo Pänke, Institut für Angewandte Informatik und Formale Beschreibungsverfahren - AIFB Universität Karlsruhe, D-76128 Karlsruhe, Germany.
- August 2006 - July 2007 Professor Cheng-Jian Wei, College of Information Science and Engineering, Nanjing University of Technology, Nanjing 210009, JiangSu Province, P.R. China.
- 29/3/2006-14/3/2007 Dr. Hirotaka Inoue (Department of Electrical Engineering and Information Science Kure National College of Technology 2-2-11 Agaminami, Kure-shi, Hiroshima 737-8506, Japan.) Supported by the Ministry of Education, Culture, Sports, Science and Technology of Japan.
- 1/4-2/9/2006 Mr. Roberto Gil Pita, Department of Signal Theory and Communications, Universidad De Alcalá, Madrid, Spain.
- 2/2006-2/2007 Mr. Pan Zhang, School of Control Science and Engineering, Shandong University, Jinan 250061, P. R. China.
- 11/10/2005-10/10/2006 Dr. Xingqi Wang (College of Computer Science, Hangzhou Dianzi University, Xiasha, Hangzhou 310018, P. R. China). Supported by the Hangzhou Dianzi University.
- 1/8/2005-31/7/2006 Dr. Dan Lin (Department of Mathematics, School of Sciences, Tianjin University, No. 92 Weijin Road, Nankai District, Tianjin 300072, P. R. China). Supported by the China Scholarship Council.
- 1/8-29/12/2005 Dr. Zhaoxia Wang (School of Electrical Engineering and Automation, Tianjin University, No. 92 Weijin Road, Nankai District, Tianjin 300072, P. R. China). Supported by the Tianjin Municipal Government.
- 16/2-15/8/2005 Dr. Jinping Li (Jinan University, China). Supported by the Shandong Province, P. R. China.
- 25/1-29/3/2005 Dr. Maolin Tang (School of Software Engineering and Data Communications, Faculty of Information Technology, Queensland University of Technology, Australia). Supported by the Queensland University of Technology.

- 13/12/2004-15/9/2005 Dr. Hisashi Handa (Dept. of Information Technology, Faculty of Engineering, Okayama University, Japan). Supported by the Ministry of Education, Culture, Sports, Science and Technology of Japan.
- 20/9/2004-19/9/2005 Professor Zhengyu Zhu (College of Computer Science, Chongqing University, Chongqing, China). Supported by the China Scholarship Council.
- 6/10/2003-5/10/2004 Dr. Sancho Salcedo-Sanz. Supported by a Spanish government fellowship.
- 2/10/2003-29/3/2004 Dr. Yong Liu. Supported by the Ministry of Education, Culture, Sports, Science and Technology in Japan.
- 12/2003-1/2004 Dr. Ong Yew Soon. Supported by the Nanyang Technological University, Singapore.
- 3/10/2002-2/4/2003 Dr Yoshiyuki Matsumura, supported by the Japanese government.
- 18/7/2001-17/7/2002 Professor Ji-Tang Wang, supported by the China Scholarship Council.
- 4/2/2002-3/2/2003 Mr. Wenxue Wang, supported by the China Scholarship Council. In addition, £1000 is awarded to our school as bench fees from the Chinese Embassy in UK.
- 12/5/2002-10/5/2003 Dr. Subin Wang, supported by the China Scholarship Council. In addition, £1000 is awarded to our school as bench fees from the Chinese Embassy in UK.
- 1/5/2002-31/10/2002 Professor Qiang Zhao, supported by the China Scholarship Council.
- 9/2003-24/3/2004 Professor Nader Nariman-zadeh, supported by the Guilan University, Iran.

15 Consultancy

1. Member of the Scientific Advisory Board of Reactive Search S.r.l., Via SS. Trinit 4 - 38122 Trento - Italy, P.IVA 02081890226 - REA TN-0199110, C.S.: 10.556 E i.v.
2. Scientific Advisor, SolveIT Software Pty Ltd, Level 12, Adelaide Bank Building, 90 King William Street, Adelaide, SA 5000 Australia.
3. Scientific Advisor, Systems Biologica Ltd, Sussex Innovation Centre, Science Park Square, Brighton, BN1 9SB, UK.
4. Consultant to the Royal Australian Navy MCCA (Manager Codification Cataloguing and Allowances) project "APL Construction, Reassessment and Tracking Expert System" in 1995.
5. Consultant to the Data Mining Project at the Canberra Laboratory of the CSIRO Division of Mathematical and Information Sciences.

16 Patents

- P. Marrow, X. Yao and P. R. Lewis, "Load Balancing in a Data Network," European Patent Application No. 08252953.8, filed September 2008. UK Patent Application No. 0905439.6, filed March 2009. International Application No.: PCT/GB2009/002135. International Filing Date: 04.09.2009. Korea Patent Application No. A31728 KRw, filed September 2009.
- T. Schnier, X. Yao, P. Zhang and B. Sendhoff, "Self-adaptation of the Representation of a Real-world Design in an Iterative Optimization," European Patent Application filed on 5 April 2007 (EP 07105790.5). International Application No.: PCT/EP2008/002695. International Filing Date: 04.04.2008.

- X. Yao and T. Schnier, “Hardware Design Using Evolution Algorithms,” UK Patent Application No: 0106459.1 filed on 15 March 2001. European Patent EP1388123, filed on 13 March 2002. International Application No.: PCT/GB2002/001157. International Filing Date: 13.03.2002. Approved on 3 September 2008. Held by Ericsson AB (Torshamnsgaten 23, Stockholm, SE), previously by Marconi.
- X. Yao, G. Brown, H. Wersing, and B. Sendhoff, “Exploiting Ensemble Diversity for Automatic Feature Extraction,” European Patent EP1378855. Filed on 13/08/2002. Approved 17/10/2007.

17 Publications

According to Google Scholar (27/12/2015), H-index: 75; total citations: 28225.

17.1 Refereed Journal Papers

1. X. Shen, L. L. Minku, R. Bahsoon and X. Yao, “Dynamic Software Project Scheduling through a Proactive-rescheduling Method,” *IEEE Transactions on Software Engineering*, accepted on 15/12/2015.
2. B. Xue, M. Zhang, W. Browne and X. Yao, “A Survey on Evolutionary Computation Approaches to Feature Selection,” *IEEE Transactions on Evolutionary Computation*, accepted on 19/11/2015.
3. S. He, G. Jia, Z. Zhu, D. A. Tennant, Q. Huang, K. Tang, J. Liu, J. K. Heath and X. Yao, “Cooperative Co-evolutionary Module Identification with Application to Cancer Disease Module Discovery,” *IEEE Transactions on Evolutionary Computation*, conditionally accepted on 11/10/2015.
4. H. Wang, Q. Zhang, L. Jiao and X. Yao, “Regularity Model for Noisy Multiobjective Optimization,” *IEEE Transactions on Cybernetics*, appeared online on 3 August 2015.
5. Y. Mei, M. N. Omidvar, X. Li and X. Yao, “Competitive Divide-and-Conquer Algorithm for Unconstrained Large Scale Black-Box Optimization,” *ACM Transactions on Mathematical Software*, accepted on 10/6/2015.
6. Y. Yuan, H. Xu, B. Wang, B. Zhang and X. Yao, “Balancing Convergence and Diversity in Decomposition-Based Many-Objective Optimizers,” *IEEE Transactions on Evolutionary Computation*, accepted on 28 May 2015.
7. J. Wang, K. Tang, J. A. Lozano and X. Yao, “Estimation of Distribution Algorithm with Stochastic Local Search for Uncertain Capacitated Arc Routing Problems,” *IEEE Transactions on Evolutionary Computation*, accepted on 13 April 2015.
8. Y. Yuan, H. Xu, B. Wang and X. Yao, “A New Dominance Relation Based Evolutionary Algorithm for Many-Objective Optimization,” *IEEE Transactions on Evolutionary Computation*, published online on 6 April 2015. DOI: 10.1109/TEVC.2015.2420112.
9. H. Wang and X. Yao, “Objective Reduction Based on Nonlinear Correlation Information Entropy,” *Soft Computing*, accepted on 5 March 2015.
10. M. M. Rahman, M. M. Islam, K. Murase and X. Yao, “Layered Ensemble Architecture for Time Series Forecasting,” *IEEE Transactions on Cybernetics*, appeared online on 24 February 2015. doi: 10.1109/TCYB.2015.2401038.
11. Y. Mei, X. Li and X. Yao, “On Investigation of Interdependence Between Sub-problems of the Travelling Thief Problem,” *Soft Computing*, published online on 17/10/2014.
12. A. Sen, M. M. Islam, K. Murase and X. Yao, “Binarization With Boosting and Oversampling for Multiclass Classification,” *IEEE Transactions on Cybernetics*, published online on 30/4/2015. DOI: 10.1109/TCYB.2015.2423295.

13. W. Fang, S. Yang and X. Yao, "A Survey on Problem Models and Solution Approaches to Rescheduling in Railway Networks," *IEEE Transactions on Intelligent Transportation Systems*, **16**(6):2997-3016, December 2015.
14. C. Gao, X. Yao, T. Weise and J. Li, "An efficient local search heuristic with row weighting for the unicost set covering problem," *European Journal of Operational Research*, **246**(3):750-761, 1 November 2015.
15. M.-H. Tayarani-N., X. Yao and H. Xu, "Meta-heuristic Algorithms in Car Engine Design: A Literature Survey," *IEEE Transactions on Evolutionary Computation*, **19**(5):609-629, October 2015.
16. H. Fu, B. Sendhoff, K. Tang and X. Yao, "Robust Optimization Over Time: Problem Difficulties and Benchmark Problems," *IEEE Transactions on Evolutionary Computation*, **19**(5):731-745, October 2015.
17. B. Li, J. Li, K. Tang and X. Yao, "Many-Objective Evolutionary Algorithms: A Survey," *ACM Computing Surveys*, **48**(1), Article 13, 35 pages, September 2015.
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