

Curriculum Vitae

1 Personal Information

NAME Xin YAO

WORK ADDRESS

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

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

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 (Full Professor) 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

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: Director of the Nature Inspired Computation and Applications Laboratory, University of Science and Technology of China, Hefei, Anhui 230027, P. R. China.

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 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. NCI is one of the primary providers of special purpose computers for the Chinese defence and other key government organisations. It is a research institution. I was ranked second among all applicants in the MSc entrance examination to the NCI in 1982.

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: 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. The youngest student was 11 years old and the oldest 16. I was offered a place as the top student from Fujian Province after two rounds of examination.

5 Awards and Honours

2008: Distinguished Visiting Professor, Yuan Ze University, 135 Yuan-Tung Road, Chung-Li, Taiwan 32003.

August 2007 – : Fellow of British Computer Society.

- 2008: One of my former PhD students (finished in 2007), Dr. Siang Yew Chong, won the IEEE Computational Intelligence Society's *Outstanding PhD Dissertation Award* in June 2008. The Award was competed globally. Only one award is given each year.
- 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.)
- October 2005 Sterling Hou Lecturer, University of Missouri - Columbia, Columbia, MO 65211, USA.
- 2003 – : IEEE Fellow.
- 2003 – : IEEE Computational Intelligence Society Distinguished Lecturer.
- 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 Thesis.
- Aug. 1988: The Outstanding Player in the National Men's Basketball Competition for Postgraduate Students.

6 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 –)
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 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 *Information Sciences* Special Issue on “Nature Inspired Problem Solving”, **178**(15), 1 August 2008.
20. Guest co-editor of *International Journal of Computational Intelligence and Applications* Special Section on “Simulated Evolution and Learning”, to appear in 2008.
21. Guest co-editor of *Journal of Computer Science and Technology* Special Issue on “Evolutionary Optimisation”, **23**(1), January 2008.
22. Guest co-editor of *Genetic Programming and Evolvable Machines* Special Issue on “Theoretical Foundations of Evolutionary Computation”, **9**(2), June 2008.

23. Guest co-editor of *Connection Science* Special Issue on “Evolutionary Learning and Optimisation”, Vol. 19, No. 4, December 2007.
24. Member of the editorial panel of the special issue of *Advances in Econometrics* (Elsevier) on “Applications of AI in Finance & Economics” (2003).
25. Guest co-editor of the special issue of *International Journal of Computational Intelligence and Applications* on “co-evolution”, Vol. 2, No. 1, March 2002.
26. Guest editor of the special issue of *Integrated Computer-Aided Engineering* on “evolutionary computing and neural networks,” Vol. 9, No. 1, January 2002.
27. Member of the editorial board for the special issue of *Neurocomputing* Journal (Elsevier) on “evolutionary neural systems”, Vol. 42, Issues 1-4, January 2002.
28. 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.
29. 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.
30. Guest editor of the special issue of *Journal of Advanced Computational Intelligence* on “simulated evolution and learning”, Vol. 4, No. 2, April 2000.
31. Guest editor of the special section of *Communications of the ACM* on “evolvable hardware,” Vol. 42, No. 4, April 1999.
32. Guest co-editor of the special issue of the journal *Applied Intelligence* (Kluwer Academic) on “evolutionary learning,” Vol. 8, No. 1, 1998.
33. 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.
34. 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.

7 Invited Plenary/Keynote Speeches

1. 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.
2. Invited keynote speaker at the 7th International Conference on Simulated Evolution And Learning (SEAL’08), Melbourne, Australia, 8-11 December 2008.
3. Invited speaker at the 2008 International Conference on Frontiers of Computational Science, 27-29 November 2008, Nagoya, Japan.
4. Invited keynote speaker at the 8th Annual UK Workshop on Computational Intelligence (UKCI’08), 10-12 September 2008, Leicester, UK.
5. Invited keynote speaker at the 2008 IEEE International Conference on Industrial Technology (ICIT2008), Chengdu, China, 21-24 April 2008.
6. 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)
7. Invited keynote speaker at the 3rd China Computer Science Education Conference, Shanghai, China, 26-28 October 2007.

8. Invited keynote speaker at the 2007 IEEE Congress on Evolutionary Computation (CEC'07), 25-28 September 2007, Singapore.
9. Invited keynote speaker at the 2007 International Conference on Intelligent Computing (ICIC'07), Qingdao, China, 21-24 August 2007.
10. Invited plenary speaker at the Sixth International Conference on Optimization (Optimization 2007), Faculty of Economics, University of Porto, Portugal, 22-25 July 2007.
11. Invited keynote speaker at the 2006 International Conference on Computational Intelligence and Security (CIS'06), 3-6 November 2006, Guangzhou, China.
12. 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)
13. 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.
14. Invited keynote speaker at the 7th International Conference on Intelligent Data Engineering and Automated Learning (IDEAL 2006), 20-23 September, 2006, Burgos, Spain.
15. Invited plenary speaker at the 2006 International Conference on Intelligent Computing (ICIC2006), 16-19 August 2006, Kunming, China. (Invitation declined due to other commitments)
16. Invited speaker at the 2006 IEEE Congress on Evolutionary Computation (CEC'06), 16-21 July 2006, Vancouver, Canada.
17. 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)
18. Invited plenary speaker at the 2006 Polish Conference on Evolutionary Algorithms and Global Optimization (KAEiOG'2006), 30 May - 2 June 2006, Murzasichle, Poland.
19. Invited plenary speaker at the 8th Congress of SIMAI — Italian Society for Applied and Industrial Mathematics, Ragusa, Italy, 22-25 May 2006.
20. 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.)
21. Invited keynote speaker at the 2005 Computational Science Symposium, Nagoya, Japan, 11-13 October 2005.
22. 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)
23. 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.
24. 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.
25. 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.
26. 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)

27. Invited keynote speaker at the 2005 International Symposium on Intelligent Computation and Its Application (ISICA'2005), Wuhan, China, 4-6 April 2005.
28. Invited keynote speaker at the 5th International Conference on Recent Advances in Soft Computing (RASC2004), Nottingham, UK, 16-18 December 2004.
29. Invited keynote speaker at the 5th International Conference on Simulated Evolution And Learning (SEAL'04), Pusan, South Korea, 26-29 October 2004.
30. Invited keynote speaker at the First Brazilian Workshop on Evolutionary Computation (BEC'2004), São Luís, Maranhão, Brazil, 29 September 2004.
31. 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.
32. Invited plenary speaker at the 2004 UK Workshop on Computational Intelligence (UKCI-04), Loughborough, UK, 6-8 September 2004.
33. 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.
34. Invited plenary speaker at the 2004 Congress on Evolutionary Computation (CEC'2004), Portland, USA, 20-23 June 2004.
35. Invited speaker at the Natural Computing Applications Forum (NCAF) meeting on Fundamentals of Natural Computing, Bath, UK, 21-22 January 2004.
36. Invited keynote speaker at the IEEE International Conference on Neural Networks and Signal Processing (ICNNSP'03), Nanjing, P. R. China, 14-17 December 2003.
37. 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.
38. 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.
39. 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.*
40. Invited keynote speaker at the IEEE INDIN'03 Workshop on Autonomic Computing Principles and Architectures (AUCOPA'2003), 22-23 August 2003, Banff, Alberta, Canada.
41. 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.*
42. 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.*
43. 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?*

44. 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.*
45. 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.*
46. 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.*
47. 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.*
48. 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.*
49. 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.*
50. 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?*
51. 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?*
52. 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?*
53. 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.*
54. 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.*
55. 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.*
56. 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.*
57. 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.*
58. 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.*

59. 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.*
60. 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.*
61. 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.*
62. 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.*
63. 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.*
64. 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.*
65. Invited plenary speaker at the *First Korea Evolutionary Computation Workshop*, KAIST, Taejon, Korea, 5 November 1994. Talk title: *Evolutionary Computation.*

8 Invitations to Other High-Level Meetings

1. Invited by the Director-General of the Higher Education Department of the Ministry of Education of China, Professor Yaoxue Zhang, to participate in the Forum on Future Computing (FFC), Beijing, 23-24 June 2007. There were only a small number of invitees from different countries.
2. Invited Panelist (along with David Wood, Executive VP of Symbian, Michael Risman, Partner of Apax Partners Worldwide, Andy Hopper of Cambridge University and Derek McAuley, Director of Intel Research Lab in Cambridge) on UK R&D at the UK Technology Partnering and Investment Forum 2004, 1-2 March 2004, London, UK.
3. Invited by the London-based World Humanity Action Trust (WHAT) to attend a meeting on "Problems Arising from Global and Instant Communications," 16-18 November 1996, Manila, Philippines, chaired by Dr Hans d'Orville, Director of the Technology Task Force at Bureau for Policy and Programme Support of the United Nations Development Programme. Other participants, only 19 people in total, of this high-level meeting include government officials, scientists and journalists, including His Excellency Dr Cesar Virata (former prime minister of the Philippines), Mr Dragoljub Najman (former Assistant Director-General of UNESCO), Professor Therese Paquet-Sevigny (Universite du

Quebec & Montreal), Dr Tengku M. A. Shariffadeen (Director-General of Malaysian Institute of Microelectronic Systems) and Hon. Mr Renier Schoeman (Member of Parliament, National Party Chief Spokesman on Education, South Africa).

9 Professional Activities

9.1 Conference Chair

1. Co-chair of the 2008 International Workshop on Nature Inspired Computation and Applications (IWNICA'08), Hefei, Anhui, China, 27-29 May 2008.
2. Co-chair of the 2008 UK-China Joint Workshop on "From Nature to Computing and Back", 21-25 February 2008, Shanghai, China.
3. General Co-chair of the 8th International Conference on Intelligent Data Engineering and Automated Learning (IDEAL'07), 16-19 December 2007, Birmingham, UK.
4. Co-chair of the First IEEE Symposium on Foundations of Computational Intelligence (FOCI'07), 1-5 April 2007, Honolulu, Hawaii, USA.
5. General Co-chair of the 2006 UK-China Workshop on Nature Inspired Computation and Applications, 23-27 October 2006, Hefei, China.
6. General Co-chair of the Sixth International Conference on Simulated Evolution And Learning (SEAL'06), 15-18 October 2006, Hefei, Anhui, China.
7. Proceedings chair of the Ninth International Conference on Parallel Problem Solving from Nature (PPSN IX), Reykjavík, Iceland, 9-13 September 2006.
8. 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.
9. 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.
10. Honorary chair of the First Brazilian Workshop on Evolutionary Computation (BEC'2004), São Luís, Maranhão, Brazil, 29 September 2004.
11. General chair of the Eighth International Conference on Parallel Problem Solving from Nature (PPSN VIII), Birmingham, UK, 18-22 September 2004.
12. 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.
13. 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.
14. 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.
15. 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.

16. Workshop chair of the 2002 UK Workshop on Computational Intelligence (UKCI'02), Birmingham, UK, 2-4 September 2002.
17. 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.
18. 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.
19. 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.
20. 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.
21. Programme committee co-chair of the Sixth International Conference on Parallel Problem Solving from Nature (PPSN VI), Paris, France, 16-20 September, 2000.
22. Special sessions chair of the 2000 Congress on Evolutionary Computation (CEC'2000), 16-19 July 2000, La Jolla Marriot Hotel, La Jolla, CA, USA.
23. 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.
24. 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.
25. Programme committee co-chair of the Third International Conference on Computational Intelligence and Multimedia Applications (ICCIMA'99), New Delhi, India, 23-26 September 1999.
26. Programme committee co-chair of the 1999 Congress on Evolutionary Computation (CEC'99), Washington DC, USA, 6-9 July 1999.
27. Programme committee co-chair of the Second Asia-Pacific Conference on Simulated Evolution and Learning (SEAL'98), Canberra, Australia, 24-27 November 1998.
28. Programme committee vice co-chair of the 1998 IEEE International Conference on Evolutionary Computation (ICEC'98), 5-9 May 1998, Anchorage, Alaska, USA.
29. Programme committee co-chair of the Second Japan-Australia Joint Workshop on Intelligent and Evolutionary Systems, Kyoto, Japan, 12-14 November 1998.
30. The Australian co-organiser of the Australia-Japan Joint Workshop on Intelligent and Evolutionary Systems, Canberra, Australia, 21-22 November 1997.
31. Special sessions chair of the First IEEE International Conference on Intelligent Processing Systems (IEEE ICIPS'97), 20-24 October 1997, Beijing, China.
32. Programme committee co-chair of the 1997 IEEE International Conference on Evolutionary Computation (ICEC'97), 14-17 April 1997, Indianapolis, IN, USA.
33. Programme committee chair of the International Conference on Computational Intelligence and Multimedia Applications (ICCIMA'97), 10-12 February 1997, Griffith University, Gold Coast, Australia.
34. Programme committee co-chair of the First Asia-Pacific Conference on Simulated Evolution And Learning (SEAL'96), Taejon, Korea, 9-12 November 1996.
35. Programme committee chair of the Eighth Australian Joint Conference on Artificial Intelligence (AI'95), Canberra, Australia, 13-17 November 1995.

36. The Australian coordinator of the First Korea-Australia Joint Workshop on Evolutionary Computation, Taejon, Korea, 26-29 September 1995.
37. Chair of the organising committee of the AI'94 Workshop on Evolutionary Computation, Armidale, NSW, Australia, 21-22 November 1994.
38. 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 2009 Symposium on Experimental Algorithms (SEA'2009), 3-6 June 2009, Dortmund, Germany.
2. Member of the programme committee of the 10th International Conference on Parallel Problem Solving From Nature (PPSN X), 13-17 September 2008, Dortmund, Germany.
3. Member of the programme committee of the 5th International Conference on Ecological Informatics (ISEI5), December 4-7, 2006, Santa Barbara, CA, USA.
4. 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.
5. Member of the programme committee of the 2005 Congress on Evolutionary Computation (CEC'05), 2-5 September 2005, Edinburgh, UK.
6. 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.
7. 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.
8. Member of the programme committee of the 2005 International Symposium on Intelligent Computation and Its Application (ISICA'2005), Wuhan, China, 4-6 April 2005.
9. 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.
10. Member of the programme committee of the 5th International Conference on Recent Advances in Soft Computing (RASC2004), Nottingham, UK, 16-18 December 2004.
11. Member of the Advisory Committee for the 2004 IEEE Conference on Cybernetics and Intelligent System (CIS'04), Singapore, December 1-3, 2004.
12. 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.
13. Member of the programme committee of the 2004 International Conference on Intelligent Information Process (ICIIP'04), October 21-23, 2004, Beijing, P. R. China.
14. 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.
15. 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.

16. 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.
17. Member of the programme committee of the 2004 Congress on Evolutionary Computation (CEC'04), 20-23 June 2004, Portland, USA.
18. 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.
19. 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.
20. 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.
21. Member of the programme committee of the 2003 Congress on Evolutionary Computation (CEC'03), Canberra, Australia, 8-12 December 2003.
22. Senior researcher and lecturer at the The 6th EvoNet Summer School in Evolutionary Computing, University of Parma, Parma, Italy, 24-31 August 2003.
23. Invited tutorial speaker at the INtroductory TutoRials in Optimization, Search and decision support methodologies (INTROS'03), 12 August 2003, Nottingham, UK.
24. Invited speaker at the BCS-PAR Summer School on Pattern Recognition Exeter University, Exeter, UK, 28 July - 01 August 2003.
25. Invited tutorial speaker at the 2003 Genetic and Evolutionary Computation Conference (GECCO-2003), Chicago, 12-16 July 2003.
26. Member of the programme committee of the Fourth International Workshop On Memetic Algorithms (WOMA-IV, 2003), July 12-16, 2003, Chicago, USA.
27. Member of the programme committee of the ICALP'03 Workshop on Fundamentals of Evolutionary Algorithms, 4-6 July 2003, Eindhoven, The Netherlands.
28. Invited tutorial speaker at the IEEE Swarm Intelligence Symposium (SIS'03), 24-26 April 2003, Indianapolis, Indiana, USA.
29. 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.
30. 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.
31. 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.
32. 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.
33. 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.
34. 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.

35. Member of the programme committee of the Seventh International Conference on Parallel Problem Solving from Nature (PPSN VII), Granada, Spain, 7-12 September 2002.
36. Member of the programme committee of the Seventh International Workshop on Foundations of Genetic Algorithms VII (FOGA7), Torremolinos, Spain, 4-6 September 2002.
37. 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.
38. Member of the International Scientific Committee of the Third Conference of the International Society of Ecological Informatics (ISEI), Rome, Italy, 26-30 August 2002.
39. Member of the programme committee of the Fourteenth International Conference on Software Engineering and Knowledge Engineering (SEKE'02), Ischia, Italy, July 15-19, 2002.
40. 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.
41. 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.
42. Member of the programme committee of the Third International Conference on Information, Communications and Signal Processing (ICICS'2001), 15-18 October 2001, Singapore.
43. Member of the programme committee of the UK Workshop on Computational Intelligence (UKCI'01), Edinburgh, UK, 10-12 September 2001.
44. Member of the programme committee of the Third NASA/DoD Workshop on Evolvable Hardware (EH'2001), 12-14 July 2001, Long Beach, California, USA.
45. Member of the programme committee of the Fourth European Conference on Genetic Programming (EuroGP2001), 18-20 April 2001, Lake Como, Italy.
46. Member of the programme committee of the 10th International Conference on Computing and Information (ICCI'2000), Kuwait, November 18-21, 2000.
47. 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.
48. 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.
49. 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.
50. 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.
51. Member of the conference committee of the Second Asia-Pacific Conference on Genetic Algorithms and Applications (APGA'2000), Hong Kong, 3-5 May 2000.
52. Member of the programme committee of the Third European Conference on Genetic Programming (EuroGP2000), 15-16 April 2000, Edinburgh, UK.
53. Member of the programme committee of the Third Australia-Japan Joint Workshop on Intelligent and Evolutionary Systems, Canberra, Australia, 22-24 November 1999.

54. Member of the programme committee of the 6th International Conference on Neural Information Processing (ICONIP'99), Perth, Australia, 16-20 November 1999.
55. Member of the programme committee of the International Workshop on Emergent Synthesis (IWES'99), December 6-7, 1999, Kobe, Japan.
56. 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.
57. Member of the International Advisory Board of the 1st Asia-Pacific Conference on Intelligent Agent Technology, Hong Kong, December 14-17, 1999.
58. 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.
59. Member of the programme committee of the Third International Symposium on Artificial Life and Robotics (AROBIII'98), Beppu, Oita, Japan, 19-21 January 1998.
60. 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.
61. 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.
62. 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.
63. Member of the programme committee of the Seventh Annual Conference on Evolutionary Programming (EP'98), 25-27 March 1998, San Diego, USA.
64. 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.
65. 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.
66. Member of the programme committee of the World Multiconference on Systemics, Cybernetics and Informatics (SCI'98), 20-24 July 1998, Orlando, Florida, USA.
67. 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/>.
68. Member of the programme committee of the Eleventh Australian Joint Conference on Artificial Intelligence (AI'98), Brisbane, Australia, 13-17 July 1998.
69. Member of the programme committee of the World Multiconference on Systemics, Cybernetics and Informatics (SCI'97), Caracas, Venezuela, 7-11 July 1997.
70. Member of the programme committee of the Tenth Australian Joint Conference on Artificial Intelligence (AI'97), Perth, Australia, 1-4 December 1997.
71. 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.

72. Member of the programme committee of the Sixth Annual Conference on Evolutionary Programming (EP'97), 13–16 April 1997, Indianapolis, IN, USA.
73. Member of the programme committee of the Seventh International Conference on Genetic Algorithms (ICGA'97), 19-23 July 1997, East Lansing, MI, USA.
74. Member of the international organising committee of the Micro-Robot World Cup Soccer Tournament (MIROSOT'96), 9–12 November 1996, Taejon, Korea.
75. 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.
76. Member of the programme committee of the 1995 IEEE International Conference on Evolutionary Computation (ICEC'95), 29 November – 1 December 1995, Perth, Australia.
77. 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.
78. Member of the programme committee of the Seventh Australian Joint Conference on Artificial Intelligence (AI'94), 21–25 November 1994, Armidale, NSW, Australia.
79. 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 39 PhD/Habilitat and 7 Master theses from 37 universities in UK, Australia, Austria, Iceland, Switzerland, Singapore, Malaysia, Spain and Hong Kong, P. R. China.
2. Referee of various grant and fellowship applications for EPSRC (UK), Leverhulme Trust (UK), Royal Society (UK), European Commission, Marsden Fund Council (New Zealand), ARC (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 -)
5. Referee for numerous journal and conference papers, including the following journals:
 - Proceedings of the IEEE
 - IEEE Transactions on Speech and Audio Processing
 - IEEE Transactions on Neural Networks
 - IEEE Transactions on Evolutionary Computation
 - IEEE Transactions on Systems, Man and Cybernetics
 - IEEE Transactions on Circuits and Systems
 - IEEE Transactions on Control Systems Technology
 - IEEE Transactions on Computers
 - IEEE Spectrum

- Communications of the ACM
- Automatica
- Neural Networks
- Artificial Intelligence
- European Journal of Operational Research
- Information Processing Letters
- Evolutionary Computation
- Mathematical and Computer Modelling
- BioSystems
- Future Generation Computer Systems
- The Computer Journal
- Electronics Letters
- Journal of Heuristics
- Genetic Programming and Evolvable Machines
- International Journal of Systems Science
- Neurocomputing
- Engineering Computations: International Journal for Computer-Aided Engineering and Software
- Computer Systems: Science and Engineering
- Intelligent Automation and Soft Computing
- Informatica
- Knowledge and Information Systems: An International Journal
- Journal of Computing and Information Technology
- Journal of Intelligent Systems
- Australian Journal of Intelligent Information Processing Systems
- Systems Research and Information Systems
- International Journal of High Speed Computing
- Soft Computing
- International Journal of Computational Intelligence and Applications
- International Journal of Knowledge-Based Intelligent Engineering Systems
- International Journal of Design Computing
- Journal of Systems Architecture
- BT Technology Journal
- Integrated Computer-Aided Engineering
- Neural Computing and Applications
- Pattern Analysis and Applications
- Journal of Computer Science and Technology

11 Management Duties

1. Director of The Centre of Excellence for Research in Computational Intelligence and Applications (CERCIA), the University of Birmingham, Edgbaston, Birmingham B15 2TT, UK. (2003 -)
2. Research Director of the School of Computer Science, the University of Birmingham, UK. (2006 -).
3. Chair of the Research Committee of the School of Computer Science, the University of Birmingham, UK. (2007 -).
4. Chair of Panel D of the Universities UK ORS (Overseas Research Students) Award Committee (2005), and a member in 2003-04.
5. Member of the University Internationalisation Strategy Group (2005).
6. Member of the University CTA Management Committee (2005 -).
7. 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).
8. 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).
9. RAE lead for Computer Science in 2001 and Deputy lead for RAE2008.
10. Programme director for Bioinformatics (BSc) (2002 – 2003)
11. Programme Director and Admissions Tutor for MSc/GradDip/GradCert in Natural Computation (2000 – 2003)
12. Programme Directors for MSc/GradDip/GradCert in Natural Computation and MSc in Intelligent Systems Engineering (2007 -)
13. Admissions team member for MSc in Advanced Computer Science (2002 – 2003)

12 Leadership Positions in Professional Organisations

1. Vice President for Publications and Executive Committee member of the IEEE Computational Intelligence Society (2009).
2. Chair of the Fellows Evaluation Committee of the IEEE Computational Intelligence Society (2008).
3. Member of the IEEE Frank Rosenblatt Award Committee (2005-06 and 2008 -). This is an IEEE level committee.
4. Chair of the IEEE Computational Intelligence Society Technical Committee on Evolutionary Computation (2001-2003).
5. President of the Evolutionary Programming Society (2000 - 2001).
6. Member of the PPSN Steering Committee (2001 -).
7. Associate member of the ORBICOM network (The Worldwide Network of UNESCO Chairs and Associates in Communications).

13 Research Student Supervision

I have successfully supervised 13 and co-supervised 7 PhD students. Currently I am supervising 8 and co-supervising 2 PhD students at Birmingham. I am also co-supervising several PhD students in China.

14 External Grants

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

- 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. The Birmingham share of this grant is £3,368.56.
- 1/10/2007 - 30/9/2010 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 - 31/8/2009 EPSRC BT Industrial CASE Studentship. “Autonomic solutions for virtualised ICT.” £60,864.
- 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 - 2/1/2011 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).

15 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.

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.

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16 Consultancy

1. Consultant to the Royal Australian Navy MCCA (Manager Codification Cataloguing and Allowances) project “APL Construction, Reassessment and Tracking Expert System” in 1995.
2. Consultant to the Data Mining Project at the Canberra Laboratory of the CSIRO Division of Mathematical and Information Sciences.

17 Patents

- P. Zhang, X. Yao, B. Sendhoff and T. Schnier, “Strategy Parameter Adaptation in Evolution Strategies,” European Patent Application filed on 5 April 2007.
- X. Yao and T. Schnier, “Hardware Design Using Evolution Algorithms,” UK Patent Application No: 0106459.1 filed on 15 March 2001. Approved in 2008.
- 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.

18 Publications

18.1 Refereed Journal Papers

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2. K. Tang, M. Lin, F. L. Minku and X. Yao, “Selective Negative Correlation Learning Approach to Incremental Learning,” *Neurocomputing*, accepted, September 2008.
3. X. Yu, K. Tang, T. Chen and X. Yao, “Empirical Analysis of Evolutionary Algorithms with Immigrants Schemes for Dynamic Optimization,” *Memetic Computing*, accepted, September 2008.
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