

# CURRICULUM VITAE

## Personal Details

Name **Jennifer Joan Edwards**  
Faculty of Information Technology  
<http://www-staff.it.uts.edu.au/~jenny>

Married, two children

## Qualifications

(at University of Sydney)

1968 BSc with Hons. in Computer Science  
Honours Project *Matrix Inversion*  
1972 MSc *Integer Programming Algorithms for Large  
Scale Structured Programming Problems*  
1992 PhD *Some Applications of Structure in Matrix and  
Mathematical Programming Computation*

## Professional Societies

Australian Computer Society	Full member since 1972 Fellow since 2001
Australian Society for Operations Research INFORMS (and predecessors)	Corporate Member since 1972 Member since 1988
Mathematical Programming Society	Full member since 1976
Special Interest Group on Computer Science Education(SIGCSE)	Participant since 1997
Females in Information Technology & Telecommunications (FITT)	Participant since inception
Education and Training Forum of AIIA (Aust. Information Industries Assoc.)	Participant since 1996

## Professional Work Experience

1994-2000	Head, School of Computing Sciences, UTS
1992-date	Associate Professor, School of Computing Sciences, UTS
1989-1993	Inaugural Assistant Ombudsman, UTS (& occasionally thereafter)
1988-1990	Director of Undergraduate Studies, School of Computing Sciences
1988	Acting Head, Department of Computer Science
2002-date	Professor, Faculty of IT, UTS
1992-2001	Associate Professor, School of Computing Sciences, UTS
1985-1992	Senior Lecturer, School of Computing Sciences, NSWIT/ UTS
1981-1984	Lecturer, School of Computing Sciences, NSWIT
1975-1981	Assistant Lecturer, School of Computing Sciences, NSWIT
1968-1974	Parttime lecturer and tutor in Basser Department of Computer Science, Faculty of Engineering and short course lecturer in Economic Statistics and Architectural Science, University of Sydney
1967-1968	Computing Vacation student at NSW Public Service Board
1990-date	Joint Study Agreement with IBM Research, USA
2004 6 months	sabbatical leave at European Centre for Parallelism (CEPBA), Barcelona
mid 2000-mid 2001	Visiting Research Scientist at IBM Research Laboratories, San Jose

19906 months and Yorktown  
 19876 months sabbatical leave at IBM Almaden Research Center, San Jose  
 19836 months sabbatical leave at London School of Economics  
 sabbatical leave at University of Sydney

## Theses Supervised

### PhD

McGregor, C (2002) *Links between the Balanced Scorecard, Decision Support Systems and Workflow Management*  
 Sekanina, M (1998) *Shape Analysis*  
 Robertson, A (1997) *Designing over Distance - a Study of Cooperative Work, Embodied Cognition and Technology to Enable Remote Collaboration*  
 Blair, A (1996) *MEDISS: A Methodology for the Design of Inetlligent Decision Support Systems*

### Masters

Lafferty,S (2003) *The Australian Digital Theses Program and the Theory of Disruptive Technologies: a Case Study*  
 Manley, K (2001) *A Sustainable Bbusiness Model for SMEs in the Clothing Industry in Product Design in Australia Using e-collaboration*  
 Binskin, R (2000) *The Internet and its Use by NonProfit Organisations*  
 Boxwell, L (2000) *The Organisational Factors which Influence the Adoption of Customer Relationships Management*  
 Webb, B (1999) *Non Strategic Alliances: When Competitors have to Work Together*  
 Mowbray, A (1999) *The AustLII Project - Changing the Nature of the Dissemination of Public Legal Information through Information Technology*  
 Phung, T (1998) *Implications of Internet Banking for Retail Banking Industry*  
 Mrowka, J (1989) *A Computerised Fleet Management System for Large and Medium Fleets of Vehicles and Plant (Automation of Overall Fleet Management)*  
 Hall, M (1988) *Using a Non-Linear Optimisation Package to Calculate Minimum Information Probabilities for Expert Systems*  
 Allen, B (1985) *Sensitivity Analysis for Probabilistic Decision Making*

Current 6 current PhD students and 1 DEd student

## Consulting

My consulting has been mainly in the area of mathematical programming, particularly in large scale linear and integer programming, as well as other fields of numerical analysis, statistics and operations research. Building large mathematical programming models is an art, as is choosing the right combination of heuristics, algorithms and parameters to solve integer programming models. Thus each consulting job was a small research project in its right and the experiences gained were used to further my theoretical work. Further details can be provided.

My participation in the operations and committees of ASOR (the Australian Society for Operations Research) has led to a substantial number of beneficial contacts with industry and some informal consulting. I have used these contacts for sponsorship of and speakers at various activities such as Student Symposia and Women in Computing workshops, as well as positions for Industrial Year Students and Graduates. More recent consulting (paid and otherwise) has been mainly in the area of reviews and development of IT education and IT course syllabi for a range of government departments and Australian Universities. The insights from this work have been incorporated into the Faculty's course development and education and learning policies and environment.

### Clients (Current and Former)

- Australian Post Office
- John Lysaght
- Ampol
- Hammersley Iron Ore
- several divisions of BHP
- AIS
- W D Scott
- Morris Woollen Mills

- Arnotts
- Control Data
- IBM
- Scicon (UK)
- Univac
- ICI
- Containers Limited
- QANTAS
- East West
- DEET, DETYA
- Comalco
- News Limited
- ICL (Australia and UK)
- CSA
- ACI
- Dulux
- Castrol
- Coopers and Lybrand
- various Australian Universities
- Insearch, UTS

### Grants

2004	\$200,000	UTS Large Research Infrastructure Grant <i>A Solution Centre for Evaluating the Design and Management of Secure Broadband Networks. Smart Multimedia gateways and Next-Generation Network Applications</i>
2001-date		\$29M successful co-author of ac3 and APAC Applications
1999		successful author of KURS, co-author & researcher of FURS, co-author of DSTC
1998	\$150,000	UTS Strategic Initiatives Funding <i>Computing Study Centre</i>
1997	\$24,000	UTS Strategic Initiatives Funding (with M. Fry and G.McLelland) <i>Internationalisation Strategies</i>
1997	\$40,000	UTS Strategic Initiatives Funding <i>Women in Computing</i>
1996	\$85,000	Commonwealth Staff Development Fund (with B. Low and K. Trigwell) <i>Enhancing Internationalisation through Cultural Awareness Workshops</i>
1996	\$40,000	1995 Quality Funds <i>Preenrolment</i>
1995	\$3,000	1994 Quality Funds <i>Course Dossier</i>
1993	\$5,000	Vice Chancellor's Development Fund (with S. Alexander, S. Huxham, T.Osborn) <i>A Computer Aided Learning System for Introductory Statistics</i>
1990-date		Joint Study Agreement with IBM Research Center (San Jose and T J Watson) <i>Parallel Mathematical Programming</i>
1990	\$23,000	UTS (with T. Osborn and J.M. Potter) <i>The Development of Object Oriented Tools for Modelling</i>
1985	\$12,500	University of Sydney Grant (with J.M. Bennett) <i>Structured Mathematical Programming</i>

### Some Publications

The authors of all publications are listed alphabetically.

#### US Patent

(2001) *An Adaptive Model for Optimizing Performance of an Incremental Web Crawler*

#### Books and Chapters in Books

- Larssen, A.T., Robertson, T., Brereton, M., Loke, L. and Edwards, J. (2005) Proceedings of Approaches to Movement-Based Interaction, Aarhus, Denmark, pp1-65 (CR-ROM)
- Edwards, Jenny (2000) (ed) Proceedings of Twenty Third Australasian Computer Science Conference, Canberra, IEEE, pp 1-250
- Edwards, Jenny (1999) (ed) Proceedings of Twenty Second Australasian Computer Science Conference, Auckland, Springer-Verlag, pp 1-479
- Edwards, Jenny (1998) (ed) Proceedings of Twenty First Australasian Computer Science Conference, Perth, Springer-Verlag, pp 1-357
- Edwards, Jenny (1984) *A Comparison between Some Special Purpose and General Nonlinear Mathematical Programming Algorithms* in Workshop on Optimization and Numerical Analysis, Mathematical Studies Centre, ANU, U. of Qld P. (invited paper)

Bennett, J.M. and Edwards, Jenny (1971) *Experience with a Method for Handling Large Structural Linear Programming Problems with Integer Restrictions*, in *Optimization*, U. of Qld P., pp 129-151  
This was an invited paper at a one day seminar conducted by the Australian National University.  
Also published as Basser Department of Computer Science Technical Report 64, pp 1-31.

### Theses

Edwards, J.J. (1991) *Some Applications of Structure in Matrix and Mathematical Programming Computation*  
Ph.D. Thesis

Edwards, J.J. (1972) *Integer Programming Algorithms for Large Scale Structured Programs* M.Sc. Thesis

### Refereed Journal Articles

Paul Sutcliffe, Andrew Solomon & Jenny Edwards *Finding the Neutrality of the 2-opt Move Landscape of the TSP in Polynomial Time*, 18 pages (under submission)

Larssen, A.T., Loke, L., Robertson, T. & Edwards, J. (2006) invited editor of *Personal and Ubiquitous Computing*

Larssen, A.T., Loke, L., Robertson, T. & Edwards, J. (2006) *Movement as Input for Interaction*, accepted for

*Personal and Ubiquitous Computing*

Lafferty, Susan and Edwards, Jenny (2004) *Disruptive technologies: what future universities and their libraries?*

*Library Management*, Vol. 25, No. 6, pp 252-258

Edwards, J. and McGregor, C. *A Framework for and Comparison of Business Process Modelling Methodologies*,

abstract accepted, paper under review by *Knowledge and Process Management Journal* ~10 pages

Edwards, J. *A Framework for Massive Parallel Integer Programming* (under review) >50 pages

Edwards, J (2001) invited editor of *Journal Research and Practice in Information Technology*, Vol. 33, No. 4

Edwards, J (2001) *John Makepeace Bennett - An Inspiration* Vol. 33, No. 4 (to appear)

Edwards, J. and Kay, J. (2001) *A Sorry Tale - the Participation of Women in Australian Computing Education*,  
*Journal Research and Practice in Information Technology*, Vol. 33, No. 4 (to appear)

Blair, A., Debenham, J.K. and Edwards, J. (1997) *A Comparative Study of Methodologies for Building IDSSs*,  
*European Journal of Operational Research*, Vol. 103, No. 2, pp 277-295

Bennett, J.M. and Edwards, J.J. (1996) *A Graph Isomorphism Algorithm using Pseudoinverses*, *BIT*, Vol. 36,  
No. 1, pp 41-53

Bennett, J.M., Cooley, P.C. and Edwards, Jennifer (1968) *The Performance of an Integer Programming  
Algorithm with Test Examples*, *The Australian Computer Journal*, Vol. 1, No. 3, pp 182-185

### Refereed Conference Papers

Astrid Twenebowa Larssen, Toni Robertson and Jenny Edwards (2005) *Mechanics and Meaning: Methodological  
Considerations when Studying Movement in HCI*, *Movement Based Interaction Workshop*, *Critical Computing 2005*,  
Aarhus pp 21-25

Harvey, S., Robertson, T. & Edwards, J. (2004) *Towards Understanding Information Architecture: A Distributed Cognition  
Study of an IT Community of Practice*, ozchi 2004 CD-ROM

Larssen, A.T., Loke, L., Robertson, T. & Edwards, J. (2004) *Understanding Movement as Input for Interaction - a Study of  
Two Eyetoy Games*, ozchi 2004 CD-ROM

Robertson, T., Hewlett, C., Harvey, S. & Edwards, J. (2003) *A Role with No Edges: The Work Practices of Information  
Architects*, *HCI International 2003*, vol. 1, pp 396-400

Edwards, J., McCurley, K. and Tomlin, J. (2001) *An Adaptive Model for Optimizing Performance of an  
Incremental Web Crawler*, *Proceedings of World Wide Web 10 Conference (WWW10)*, Hong Kong, pp  
106-113 (19%)

Jay, C.Barry, Clarke, David G. and Edwards, Jenny J. (1996) *Exploiting Shape in Parallel Programming*,  
*Proceedings of IEEE Second International Conference on Algorithms & Architectures for Parallel  
Processing*, Singapore, pp 295-302 (21%)

Blair, A., Debenham, J.K. and Edwards, J. (1995b) *Methodologies for Designing IDSSs: Problems and  
Solutions*, *Proceedings of the First Australian Workshop on IDSSs - Eighth Australian Joint Conference  
on Artificial Intelligence (AI'95)*, Canberra, pp 46-56 (41%)

Blair, A., Debenham, J.K. and Edwards, J. (1995a) *A Comparative Study of Formal Methodologies for  
Designing IDSSs*, *Proceedings of the Eighth Australian Joint Conference on Artificial Intelligence  
(AI'95)*, World Scientific Publishing Company (Singapore), Canberra, pp 403-410 (35%)

Blair, A., Debenham, J.K. and Edwards, J. (1994) *Requirements Analysis for Intelligent Decision*

- Support Systems*, Proceedings of the Australian and New Zealand Conference on Intelligent Information Systems, IEEE Computer Society Press, Brisbane, pp 482-486
- Edwards, J.J. and Tomlin, J.A. (1992) *Matrix Algorithms for Parallel Processors*, Proceedings Fifth Australian Conference on Supercomputers, Melbourne, pp 105-114
- Edwards, Jenny and Hall, Michael (1989) *The Solution of Non Linear Programming Problems by Vector Machines*, Proceedings Second Australian Conference on Supercomputers, Wollongong, pp 1-8
- Edwards, Jenny (1988) *Non Linear Programming Problems in Search of a Solution*, First APORS (Australian and Pacific Operations Research Societies) Conference, Seoul, North Holland
- Edwards, J.J., Taylor, G. & Treasure, D. (1987) *Simulation of a Conveyor System in a Can Manufacturing Plant*, Proceedings of Eighth International ASOR Conference, Melbourne, pp 63-73
- Edwards, Jenny (1983) *Bounded Variables in Symmetric Quadratic Programming*, Proceedings of Sixth International ASOR Conference, pp170-176
- Edwards, J.J. (1977) *Large Sparse Matrices*, Proceedings of Third International ASOR Conference, Adelaide, pp 199-225
- Edwards, J. (1974) *Urban Planning Systems*, Proceedings of Sixth National Australian Computer Conference, pp 1-10. An expanded version of this paper was published as *Basser Department of Computer Science Technical Report No. 95*

### **Conference Papers**

- Edwards, Jenny and Tomlin, John (1994) *Parallel Mathematical Programming*, TIMS XXXII, Anchorage
- J.J. Edwards and J. Tomlin (1991) *A Highly Parallel Mathematical Programming System*, Fourteenth Mathematical Programming Symposium, Amsterdam
- J. Edwards and J.A. Tomlin (1991) *Towards a Highly Parallel Mathematical Programming System*, Thirty First TIMS/ORSA Joint National Meeting, Nashville
- Edwards, Jenny and Hall, Michael (1990) *The Use of a Vector Machine with MINOS*, IFORS (International Federation Operations Research Societies) 90, Athens
- Edwards, Jenny and Bennett, John (1988) *The Solution of the Graph Isomorphism Problem using Pseudoinverses*, Thirteenth Mathematical Programming Symposium, Tokyo
- Edwards, Jenny (1987) *Why Won't Managers use DSS*, Eighth International ASOR Conference, Melbourne
- Edwards, Jenny (1987) *Some Difficult Mathematical Programming Problems*, Eighth International ASOR Conference, Melbourne
- Buda, R, Edwards, J J (1986) *The Use of Mathematical Programming in Expert Systems*, TIMS/ASOR XXVIII International Meeting, Gold Coast
- Edwards, Jenny (1985) *Structured Quadratic Programming Problems with Integer Restrictions*, Twelfth Mathematical Programming Symposium, Boston

### **Reports**

- Cameron, B., Edwards, J., Grant, J. and Kearns, P. (1999) *Participation In Information Technology & Telecommunications in Education And Training*, DETYA pp 1-57
- Hudson, H., Armstrong, J., Cameron, J., Edwards, J., Lister, A., Singleton, P., Smith, R. and Symons, F. (1991) *Discipline Review of Computing Studies and Information Sciences Education*, DEET, Volumes 1 and 2, pp 1-49 and 1-305

### **Technical Reports**

- Edwards, Jenny, McCurley, Kevin and Tomlin, John (2001) *An Adaptive Model for Optimizing Performance of an Incremental Web Crawler*, IBM Research Report RJ 10210 (95084) pp 1-17
- Edwards, Jennifer (1972) *The Solution of Linear Programming Problems with Special Structures Technical Report No 67*, Basser Department of Computer Science, pp 1-39
- Edwards, J.J. (1972) *Recent Developments in Linear Programming Technical Report No 79*, Basser Department of Computer Science, pp1-45. This was an invited session at a one day seminar conducted by the Australian Society for Operations Research. An amended version of this paper was awarded the Australian Computer Society Student Prize for 1972

### **Invited Seminars**

- 2006 - workshop at Computing Research Association biennial conference, Utah
- 2001 - seminar at London School of Economics
- 1999 - keynote speaker at Internet World 99 in Sydney
- 1998 - keynote speaker at the 5th Women in Computing Conference in Brisbane
- 1998 - keynote speaker at Australian Science Festival in Canberra

- 1996 - keynote speaker at the conference held by King Mongkuk's Institute of Technology Ladkrabang, Thailand with a session titled *Parallel Algorithms*.
- 1995 - chair of a panel on Innovative Computer Education at the Australian Computer Science Conference in Adelaide
- 1992 - one day seminar and workshop on *Parallel Mathematical Programming* given to the Collaborative Information Technology Research Institute of CSIRO, U of Melbourne and RMIT
- 1990 - two seminars at NASA Ames Research Center, California
- 1988 - Guest Speaker at *Computer Studies in the Higher Education Sector*, a one day seminar run by the NSW Ministry of Education and Youth Affairs
- 1987 - seminars in some English Institutions including London School of Economics, London Business School, University of Southampton, South Bank Polytechnic and the Simulation Society
- 1978 - one of the two key speakers at an annual three day management symposium held by the Basser Department of Computer Science at the University of Sydney
- 1976 - seminars at various institutions in the United States. Among them were IBM at Yorktown Heights, Columbia University, University of Chicago, Carnegie Mellon, UCLA.
- I have been an invited speaker at a number of workshops and monthly meetings organised by the Australian Society for Operations Research over many years including guest speaker at several Annual General Meetings of the NSW Chapter and Sydney Branch.

## Some Contributions to the University and Community

### University

#### **Leadership**

UTS IT Committee  
 Chair USA Country Reference Group 2005-date  
 Chair, Enrolments Management Committee,  
 1994-closure (1998)  
 Inaugural Assistant Ombud,  
 1989 - 1993, (and in 1998, 2001)  
 Invited member of UTS Leadership Reading  
 Group, 1999  
 Participant in ATN Women's Development  
 Network (WEXDEV) 1995-date

Chair Academic Appeals Committees 2006  
 Development of Computing Study Centre, 1999  
 Founding member of BELL, 1999-2000  
 Invited participant in review of Student  
 Administration, 1997  
 Nominated member of reference group for Access,  
 Equity and Flexible Learning project, 1999  
 Organiser and sponsor of International Student  
 programming competitions, 1994-2000

#### **Educational Development**

Deputy Chair Academic Board 2005-date  
 Academic Admin Committee 2004-date  
 Academic Board Nominee to Insearch  
 Academic Comm., 1997-2000 (Acting Chair)  
 Member Insearch Academic Board, 1994-1997  
 Invited Reviewer of IIC IT Courses,  
 and redesigner, 1998 - date  
 Member of Board of Studies for the  
 Institute for International Studies, 1997-2000  
 Invited developer of BA Social Organisation,  
 1998-1999  
 Member of Selection Committee for CUTSD  
 Grants - Individual, 1997  
 Member of the FLAG/Online Teaching group,  
 1996-date  
 Board Member of Centre for Inter-  
 Disciplinary Studies, 1989-1990  
 Development Committee for Occupational  
 Health and Safety Graduate Diploma, 1988  
 Faculty Board in Law, 1991- 1993

#### **Research Leadership**

Member of Women in Research committee 2002-  
 2004  
 Member Early Career Researchers Committee 2005-  
 date  
 Research Development Team member for Law  
 2002-2004  
 Participant in current development of IIT  
 Institute (UTS) and ICT Centre of  
 Excellence (National) Research proposals  
 Member of the planning team for various UTS  
 parallel computer proposals, 1991-date

#### **Contributions to Governance**

Member of Women in Non-Traditional Fields  
 Group 2002-2004  
 Invited member of UTS Leadership Reading  
 Group, 1999  
 External on Faculty of Business salary loadings  
 committee, 1998-date  
 Selection and Promotion Committees -  
 Faculties of Design, Architecture and  
 Building, Engineering, Business including the  
 Dean in 1994 and the Head of Accounting in

#### **Enhancement of Student Experience**

1995 and numerous Professors, Science including all Departmental Heads for Science in 1993, and for Administration positions, including the entire restructuring of ITD in 1993, 1992 - date

Member core committee for Professorial Promotions 2005-date

Member of the core committee for Associate Professor Promotions, 1993-1998

Interim Academic Board and Academic Board, 1989-1990 and 1992, 1994-2000, 2001

Appointed to Academic Board Committee to determine Membership of the Academic Board, 1989

Vice-Chancellor's nominee to IT Advisory Committee, 1997-2000

Computer Resources Committee

Computer Users Committee

Invited participant in review of UGS, 1998

Member Planning Committee for Head of Schools/ Associate Deans Retreat, 1997

VC Nominee on review of OSTF - SRG, June-Dec 1993

## Community

### **Professional Expertise**

#### **- HPC Education**

EOT Member for ac3 2001-date

Education Co-ordinator and Developer of Educational Framework for APAC, 2001-2005

Chair HPCAsia Education Forum, 2001, 2003

#### **- External Expert on Reviews**

Member DEET Discipline Review of Computing Studies and Information Sciences Education, 1991

External IT Expert of review of RMIT Depts of Computer Science and of Software Engineering 2005

ACS Accreditation of Griffith and Deakin

External IT expert on review of ANU Faculty of Engineering and Info Tech, 1997

Review of Department of Computer Science, James Cook University - external expert, 1996

University of South Australia - external expert, graduate courses 1995, 1996 and undergraduate 1998

UWS external course advisor 1992-date

Accreditation Committee for all Information and Technological Sciences and Engineering courses at Canberra CAE, 1989

#### **- External Expert**

External on Tasmanian CS RQF trial

External on promotion Committee at Tasmania

External on Professorial Committees at ANU 1999, 2000, 2002, 2004, 2005, 2006

External on Professorial Committees at Flinders, 2003,2004

External on Professorial Committees at UNISA, 2000

External on Professorial Committees at QUT, 1997, 1999, 2003, 2004

External on Professorial Committee at University of Newcastle, 1998

External on CS promotions at UWA, 1997

External on all promotions at Monash

Comp Sc - 1997, 1998, 1999

External on all promotions at RMIT

Comp Sc - 1999

8 Selection Committees at UWS (several campuses) for senior staff, 1987-date

Contributor to ICT-Ed Research project, 2001

VETAB Accreditation Panel for TAFE, 1993

Review Panel for IT Diplomas (all NSW) TAFEs, 1993

Advisory Board for TAFE Assoc. Dip. in Computing Review Comm., 1991-2000

Selection committees for TAFE, 1992

### **Research Contributions**

#### **- Grants and Journal Reviews**

ARC Reviewer, 1990-date

ATN Small Grants Reviewer - date

Book and paper reviewer for Mathematical Programming Society, 1991 - date

Book and paper reviewer for Australian Computer Journal, now Journal Research and Practice in Information Technology, 1982-date

Translator for European Journal of Operations Research, 1985 - date

#### **- Professional Societies**

President CORE 2005-date

Executive of Computer Science Association (now CORE) 1997-date

Chair of the Editorial Board of the Computer Sc Assoc. of Australia, 1997-2000

Chair of the Program Committee for Aust Comp Sc Conf., 1997-2000

Member of the Program Committee for Aust Comp Sc Conf., 1994-date

Member of the Program Comm. for IEEE 3rd International Conf. on Algorithms and Architectures for Parallel Processing, 1997

Reviewer for ASWEC Conference, 1998 - date

## Public Contributions

### - Diversity in Computing

CORE Representative on BHERT Committee on Women in IT 2002-2005

Interviewee and invited panelist for National Women in IT Summit 2005

Advisor to UQ on diversity in Engineering, 2001

Active member of Females in Information Technology & Telecommunications - date

Convenor of Women in Computing Workshops, 1999, 2001

Faculty representative on UTS Women in NonTraditional Fields Working Group, 2001

Co Convenor of Sydney Women in Engineering and IT, 2001 - date

Frequent Media Commentator on the need for fewer nerds in IT and more women