

Curriculum Vitae

ACADEMIC PORTFOLIO

Given Name	Brian
Last Name	Lovell
Title	Associate Professor
Staff Number	1264368
School	School of Information Technology and Electrical Engineering

Please indicate the purpose/s for which you are completing this portfolio. The right hand columns show the documentation required for each purpose.

Purpose	Documentation Required	
	To Appraiser/HOD	Forward to officer indicated
Undertaking an appraisal	Folios 1-5 & Personal Plan	To Executive Dean: <i>Head's Recommendation: Academic Staff Development Requirements</i> (as needed)
Application for promotion	Folios 1-5, 7, & Personal Plan	To Manager, Tenure & Promotions: Folios 1-5, 7 & Covering Letter; <i>Head's Recommendation: Assessment for Tenure/ Promotion/ Mid-Term Review, & Head's Recommendation: Assessors' Nomination</i>
Application for promotion to Professor	Folios 1-5, 7, & Personal Plan	To Director, Personnel Services: Folios 1-5, 7 & Covering Letter addressing selection criteria; <i>Head's Recommendation: Assessment for Tenure/ Promotion/ Mid-Term Review</i>
Application for mid-term review for tenure	Folios 1-5 & Personal Plan	To Manager, Tenure & Promotions: Folios 1-5 & Covering Letter; <i>Head's Recommendation: Assessment for Tenure/ Promotion/ Mid-Term Review</i>
Application for final review for tenure	Folios 1-5, 7 & Personal Plan	To Manager, Tenure & Promotions: Folios 1-5, 7 & Covering Letter; <i>Head's Recommendation: Assessment for Tenure/ Promotion/ Mid-Term Review, & Head's Recommendation Assessors' Nomination</i>
X Increment	Folios 1-5 and (where applicable) 6 & Personal Plan	To Faculty Personnel Officer: <i>Head's Recommendation: Increment</i>
X Application for SSP (next two rounds)	Folios 1-6 & Personal Plan	To SSP Officer: Folios 1, 3 (part 5), 6 (and other folios applicant considers relevant) & Covering Letter; <i>Head's Recommendation: Special Studies Program</i>

Applicants for Tenure, Promotion and Mid-Term Review should refer to the information booklet entitled '*Applying for Tenure/Promotion/Mid-Term Review*'. Applicants for a Special Studies program should refer to the booklet entitled '*Applying for and undertaking a Special Studies Program*'.

This portfolio is designed for **flexible** use, for a variety of purposes. Each section may not need to be completed in each year.

Folio 1

CURRICULUM VITAE

Year	2004
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A. Personal Details

Given Name	Brian
Last Name	Lovell
Current Level and Point on Scale	D03
Department	Information Technology and Electrical Engineering
Faculty	EPSA
Date of Initial Appointment to UQ	9/6/89
Date of Appointment/Promotion to Current Level	1/1/2000

Type of Current Appointment

	Fixed Term (Expiry Date)	
	Tenurable (Expiry Date)	
X	Tenured	

B. Qualifications, Awards, Memberships (most recent first)

Academic Qualifications	Year	Qualification	Institution (if relevant)
	1991	PhD	UQ
	1983	BSc (Computer)	UQ
	1982	BE (Elec) (HONS I)	UQ

Awards, incl. Fellowships	Year	Description
	2004	Awarded Fellow of the IEAust
	2002	Awarded Senior Member IEEE
	2001	Nominated to ARC Expert Advisory Panel
	1999	Real-Time Face Recognition and Tracking; Finalist in QLD IT&T awards
	1999	Appointed as Chair of the IAPR Conferences and Meetings Committee
	1998	Appointment to Governing Board of the International Association of Pattern Recognition (IAPR) with 7,500 members internationally
	1998	Appointment to the IAPR Conferences and Meetings Committee
	1997	DICTA97 New Zealand, Technical Keynote, Best Student Paper Prize with Pascal Bamford
	1986	Australian Postgraduate Research Award
	1980	Sir Thomas McIlwraith Engineering Scholarship

Memberships	Year	Description
	2004	Appointed to IAPR Quality Assurance Taskforce
	2004	Appointed to IAPR Publications and Publicity Committee
	2004	Appointed to IAPR ICPR Taskforce
	2004	Awarded Fellow of the IEAust
	2002	Appointed Member of the IAPR Nominating Committee
	2002	Awarded Senior Member of the IEEE
	1999	Appointed as Chair of the IAPR Conferences and Meetings Committee
	1998	Appointment to Governing Board of the International Association of Pattern Recognition (IAPR)
	1996 - 2004	Current President of the Australian Pattern Recognition Society since 1996
	1991 - 1993	Member of the Australian Speech Science and Technology Society 1991-1993
	1986 - 2002	Current Member of the IEEE

C. Positions Previously Held (most recent first)

Dates	Position	Institution/Employer
1/11/2004 - PRESENT	Associate Professor, Director of Engineering Programs	UQ
1/1/2000-1/11/2004	Associate Professor, Program Director of Electrical Engineering	UQ
7/11/94-31/12/99	Senior Lecturer	UQ
9/6/89-6/11/94	Lecturer (Tenurable)	UQ
1/1/89-8/6/89	Lecturer(Temporary)	UQ
1/1/87-31/12/88	Tutorial Assistant	UQ
1/1/83-10/10/86	Senior Field Engineer	Schlumberger (Middle East) Saudi Arabia, Egypt

Folio 2

TEACHING - 1

A. Achievements and Development of Teaching

(NB: Staff Development Activities should appear in Folio 5)

List any initiatives taken in areas such as:

- implementation of different or innovative teaching practices;
- development of new materials for teaching (eg audio-visual, multimedia, texts);
- curriculum development, either individually or in committee;
- collaborative or team teaching;
- assessment;
- responses to student feedback.

Year	Initiatives
2003	Established CEED Industry Projects Scheme to foster industry funding. As of 2004, this scheme has now brought in more than \$40k of industry funding and scholarships.
2002	Established new \$145k PCB and embedded system manufacturing facility for the support of teaching and research projects. The facility was funded through two successful grants I wrote and matching funds.
2002	Established new Postgraduate Real Time Imaging and Sensing Laboratory with 15 students including 3 university medallists under my supervision
2002	Established new Undergraduate Signal and Image Processing/Communications Laboratory for year 4 thesis (new lab due to expansion)
2002	Introduction of a new minor of Telecommunications Engineering in collaboration with Mark Schulz and Nick Shuley.
2001-2002	Development of coursework Masters in Telecommunications and Electrical Engineering
2001	Participation in the development of joint programs with ITEE and GAP in computer vision and image processing
2001	Offered new postgrad subject ELEC7600 for web-based flexible delivery
2001	Offered new subject ELEC4600 for web-based flexible delivery
2000	Offered new subject 3E413 for web-based flexible delivery
1999	Prepared subjects 9E103 and 3E313 for web-based flexible delivery
1999	Development of program and website for minors and specialisations in EE/CSE.
1999	Establishment of Undergraduate Signal and Image Processing Laboratory for year 4 thesis projects
1999	Establishment of Postgraduate Intelligent Real-time Imaging and Sensing Laboratory (IRIS)
1996-1999	Member of working party to completely revise EE and CSE courses along the lines of the Carnegie-Mellon model and unitize both courses
1997	Coordinator of the departmental Web site with on-line course material and subject outlines
1996	Coordinator of the departmental Web site with on-line course material and subject outlines
1996	Development and delivery of two Industry short-course on Digital Signal Processing with electronic date projection and accompanying MATLAB demonstration software. Student evaluations of these courses rated the lecturer as 5.0/5.0 and 4.8/5.0 which were the highest ratings ever seen by the course organiser.

1995	Coordinator of the departmental Web site with on-line course material and subject outlines
1995	Development of electronic data projection multimedia course in Digital Signal Processing with courseware available via the Web and accompanying MATLAB demonstration software
1994	Coordinator of the departmental Web site with on-line course material and subject outlines
1990	Establishment of Digital Signal Processing Laboratory and development of digital filter practicals

Comments on Undergraduate Teaching:

I have conducted TEDI surveys regularly throughout my academic career and respond to student comments through modification of my teaching methods to improve delivery. Unsolicited student comments tend to be highly favourable. For example, positive comments on strengths in teaching from a TEDI survey on ELEC4600/ELEC7602, Signal and Image Processing II, in semester 1 this year include:

- “Captivating stories that display practical applications of lecture material”
- “Course is most interesting done at uni so far”
- “knows the information and enjoys passing his wealth of knowledge to the students”
- “Good and interesting asides – explains different methods well and reasons about things”
- “Very motivated, highly interested and skilled in topic area”

Positive comments on strengths in teaching from a TEDI survey on ELEC76052, Computer Vision and Pattern Recognition, in semester 2 this year include:

- “in-depth knowledge of material - sense of humour.”
- “enthusiasm for the topic - ability to relate real world problems to learning materials.”
- “enthusiasm and knowledge”

An overall teaching rating of 4.8/5.0 was achieved in semester 1 2004 and 4.7/5.0 was achieved in semester 2, 2004 — these results are well into the upper 25% of evaluations and well above the school average of 4.1. All courses are currently delivered using electronic presentation software, animated software demonstrations, video presentations of leading international research, real-time hardware demonstrations, audio demonstrations, and interactive computer tutorials. See <http://www.itee.uq.edu.au/~elec4600> for a sample of my current web content.

Over the years, I have received many nominations as the most effective teacher for semester 1 2000 from students with greater than 6.0 GPA who were given the Dean’s Commendation for High Achievement. The commendations were for subjects in fourth year as well as first year. One lucid comment was:

“He demonstrated interesting examples of the subject. He gave the most insight into the subject matter undertaken in future years, whereas most other lecturers just continue with the plain theory of the lecture notes. I thought that’s what 1st year engineering was about, i.e., giving an insight into the different strands of engineering.”

I have had experience in teaching quite large classes as well as small specialist postgraduate courses. For example I have taught classes of 270 first year engineers. At the school level, I have worked on the implementation of the unitised Electrical Engineering and Computer Systems Engineering courses since inception. This was been the largest course structural change ever introduced into these programs and involved a major rethink of our goals and philosophy of teaching. Fortunately, our course restructuring coincided with the introduction of unitisation, and the necessary unitisation changes were relatively easy to accommodate.

Due to huge opportunities for Masters programs in Telecommunications and Electrical Engineering that I observed in China and India on my visit in August 2001, I wrote the APPC proposals for these coursework Masters in these areas in 2001 in consultation with Mark Schulz and other staff. In 2002, 12 students enrolled including 3 international students even though the programs had not yet been advertised or officially launched. In 2003, the ME numbers tripled. In 2004, the numbers doubled. Already the ME is generating as much revenue as the BE (elec) program.

We expect this growth to continue which will greatly increase our international revenue stream.

Folio 2

TEACHING - 2

B. Formal Teaching Contact (both undergraduate and postgraduate)

(Fill in actual hours spent in scheduled award-related teaching.)

Year/ Semester	Subject Code & Name	Credit Points	Your total number of scheduled Contact Hours (per semester in this subject)	Notes - <i>Include relevant data on class size, predominant mode of teaching (lecture, seminar, tutorial, practical, external studies, laboratory, clinical or field work). If you team teach, list percentage contribution.</i>
2004/2	ELEC7605	2 units	26L	Computer Vision and Pattern Recognition, 10 students, postgraduate
2004/1	ELEC4600/ELEC7602	2 units	39L13T13P	Signal and Image Processing II, 31 students' lecture/tutorial/practical
2003/2	ELEC7605	2 units	26L	Computer Vision and Pattern Recognition, 2 students, postgraduate
2003/2	COMS7501	2 units	26L	Broadband Mobile Communications, 15 students, postgraduate
2003/1	ELEC4600	2 units	39L13T13P	Signal and Image Processing II, 25 students' lecture/tutorial/practical
2003/2	ELEC7605	2 units	20C	Computer Vision and Pattern Recognition 2 students postgrad
2003/2	COMS7501	2 units	20C	Broadband Mobile Communications 14 students' postgrad
2002/1	ELEC4600	2 units	39L13T13P	Signal and Image Processing II, 35 students' lecture/tutorial/practical
2001/2	ELEC7600	2 units	24C	Advanced Signal and Image Processing 7 students, 100% Project/ seminars/lectures
2001/1	ELEC4600	2 units	39L13T13P	Signal and Image Processing II, 30 students' lecture/tutorial/practical
2001/1	ENGG1030	2 units	39L13T13P	Electrical Physics and Electronics, 270 students, 50%
2000/1	9E103	12	39L13T13P	Electrical Physics and Electronics, 250 students, 50%
2000/I	3E413	12	39L13T13P	Signal and Image Processing II, 30 students' lecture/tutorial/practical
1999/II	3E313	12	39L13T13P	Signal and Image Processing I,

				136 students, lecture/tutorial/practical
1999/I	9E103	12	39L13T13P	Electrical Physics and Electronics, 250 students, 50%
1999/I	E3462	8	26L13T	Digital Signal Processing, 80 students, lecture
1998/II	E3470	8	26L13T	Digital Communications, 80 students, lecture
1998/II	E3462	8	26L13T	Digital Signal Processing, 50 students, lecture, electronic data projection
1998/I	E3277	10	26L13T13P	Basic Digital Electronics, service course for BIT, 22 students, lecture
1997/II	E3470	8	26L13T	Digital Communications, 80 students, lecture
1997/II	E3462	8	26L13T	Digital Signal Processing, 30 students, lecture, electronic data projection
1996/II	E3462	8	26L13T	Digital Signal Processing, 30 students, lecture, electronic data projection
1996/II	E3470	8	26L13T	Digital Communications, 70 students, lecture
1996/I	E3277	10	26L13T13P	Cancelled due to course changes in school of IT leading to low enrolment
1996/I	E3206	6	26L13T	Digital Design I, 120 students, lecture, combined lectures and tutorials with E3277
1996/I	E3277	10	26L13T13P	Basic Digital Electronics, service course for BIT, 60 students, lecture, combined lectures and tutorials with E3206
1995/II	E3462	8	26L13T	Digital Signal Processing, 30 students, lecture, electronic data project
1995/II	E3470	8	26L13T	Digital Communications, 70 students, lecture
1995/I	E3206	6	26L13T	Digital Design I, 120 students, lecture, combined lectures and tutorials with E3277
1995/I	E3277	10	26L13T13P	Basic Digital Electronics, service course for BIT, 60 students, lecture, combined lectures and tutorials with E3206
1994/II	E3314	8	26L13T	Signals and Systems, 120 students, lecture, shared 50%
1994/II	E3470	8	26L13T	Digital Communications, 50 students, lecture
1994/I	E3206	6	26L13T	Digital Design I, 110 students, lecture, combined lectures and

				tutorials with E3277
1994/I	E3277	10	26L13T13P	Basic Digital Electronics, service course for BIT, 50 students, lecture, combined lectures and tutorials with E3206
1993/II	E3830	10	26L13T	Advanced Software Tools, postgraduate subject, 20 students, lecture, shared 33%
1993/II	E3314	8	26L13T	Signals and Systems, 120 students, lecture, shared 50%
1993/II	E3416	8	26L13T	Computer Networking and Digital Communications, 60 students, lecture, shared 50%
1993/II	E3856	10	26L13T	Image Processing, postgraduate subject, 20 students, lecture
1993/I	E3206	6	26L13T	Digital Design I, 120 students, lecture, shared 66%
1993/I	E3277	10	26L13T13P	Basic Digital Electronics, service course for BIT, 60 students, lecture
1992/yr	E3281	10	72P	Year II practical, 100 students, practical coordinator
1992/II	E3463	8	26L13T	Introduction to Digital Communications, 60 students, lecture
1992/I	E3277	10	26L13T13P	Basic Digital Electronics, service course for BIT, 60 students, lecture
1991/yr	E3281	10	72P	Year II practical, 100 students, practical coordinator
1991/II	E3463	8	26L13T	Introduction to Digital Communications, 60 students, lecture
1991/I	E3464	8	26L13T	Communication Systems, 60 students, lecture
1991/I	E3206	6	26L13T	Digital Design I, 120 students, lecture, shared 66%
1990/II	E3463	8	26L13T	Introduction to Digital Communications, 60 students, lecture
1990/I	E9101	5	13L26T	Year I graphics, 200 students, tutoring
1990/I	E3464	8	26L13T	Communication Systems, 60 students, lecture
1990/I	E3206	6	26L13T	Digital Design I, 120 students, lecture, shared 66%
1989/II	ME307	6	26L13T	Stochastic Processes, 60 students, lecture, shared 50%
1989/II	E3463	8	26L13T	Introduction to Digital Communications, 60 students, lecture
1989/I	E9101	5	13L26T	Year I graphics, 200 students,

				tutoring
1989/I	E3464	8	26L13T	Communication Systems, 60 students, lecture

TEACHING - 3

C. Supervision (Honours, Higher Degree Coursework and Research)

Degree (State if Honours, Masters by Coursework, Masters by Research or PhD. Ongoing or completed)	P/T or F/T	Student's Name	Date of Enrolment mm/yy	Date Thesis Submitted mm/yy	Date Awarded Mm/yy	Supervisor or Associate Supervisor (percent contribution)
MEngSc(Research)	F/T	Simon Lee	2/92	12/93	5/94	P Supervisor 100%
PhD	P/T	Rupert Paget	1/93	2/99		A Supervisor 50%
PhD	F/T	Aruna Gunawardena	1/93	2/97	9/97	A Supervisor 50%
PhD	F/T	Andrew Bradley	2/93	3/96	8/96	P Supervisor 90%
PhD	F/T	Steven Dodd	3/93	6/96	2/97	P Supervisor 40%
PhD	P/T	Guy Smith	7/93	2/98	9/98	A Supervisor 20%
PhD	F/T	Ross Walker	2/94	6/97	11/97	A Supervisor 50%
MEngSc(Research)	P/T	Nick Comino	7/95	12/97	9/98	P Supervisor 40%
PhD	F/T	Pascal Bamford	2/96	9/99	3/00	P Supervisor 90%
MEngSc(Research)	F/T	Robert Andrews	1/00	12/03	3/04	P Supervisor 60%
MEngSc(Research)	F/T	David McKinnon	1/00	1/02	5/03	A Supervisor 40%
MPhil	F/T	Martin Robinson	1/01	3/02	7/02	P Supervisor 80%
PhD	F/T	Nianjun Liu	8/00	6/04	12/04	P Supervisor 100%
MEngSc	F/T	Chen Shaokang	8/00			P Supervisor 100%
PhD	F/T	Richard Davis (UTas Medalist)	8/01	6/04		P Supervisor 100%
PhD	F/T	Ben Appleton (UQ Medalist)	1/02	12/04		P Supervisor 100%
PhD	F/T	Carlos Leung (UQ Medalist)	1/02			P Supervisor 100%
PhD	F/T	David McKinnon	1/02			P Supervisor 100%
PhD	F/T	Simon Long	7/03			P Supervisor 100%
PhD	F/T	Ting Shan	3/04			P Supervisor 100%
PhD	F/T	Suzanne Little	2/02			A Supervisor 30%

International Diploma Thesis	F/T	David Vignon (University of Nantes)	2/01		9/01	P Supervisor 100%
International Diploma Thesis	F/T	Roman Pflugfehler (Tech U of Vienna)	11/00	4/01	1/02	P Supervisor 50%
International Diploma Thesis	F/T	Florian Heinke (Tech U of Munich)	11/01		3/03	P Supervisor 100%
International Diploma Thesis	FT	Stefan Hoegg (Tech U of Munich)	3/02		6/03	A Supervisor 50%
International Diploma Thesis	F/T	Etienne Guy (University of Nantes)	1/02		7/03	P Supervisor 100%

TEACHING - 4

D. Other Teaching Duties

Include duties relating to:

- subject, course or program co-ordination;
- supervision of a clinical program or field work, or undergraduate project;
- other.

Year	Other Teaching Duties
2004	Year 4 Thesis Project supervision: 9 students
2003	Year 4 Thesis Project supervision: 8 students
2002	Year 4 Thesis Project supervision: 7 students
2001	Year 4 Thesis Project supervision: 10 students
2000	Year 4 Thesis Project supervision: 15 students
1999	Year 4 Thesis Project supervision: 20 students
1998	Year 4 Thesis Project supervision: 6 students
1997	Year 4 Thesis Project supervision: 6 students
1996	Year 4 Thesis Project supervision: 5 students
1995	Year 4 Thesis Project supervision: 6 students
1994	Year 4 Thesis Project supervision: 7 students
1993	Year 4 Thesis Project supervision: 5 students
1992	Year 4 Thesis Project supervision: 7 students
1991	Year 4 Thesis Project supervision: 7 students
1990	Year 4 Thesis Project supervision: 5 students
1989	Year 4 Thesis Project supervision: 6 students

TEACHING - 5

E. Evaluation(s) of Teaching

(Append a hard copy of UQ approved independent teaching evaluations. Applicants for Tenure, Promotion, or Mid-Term review should submit a hard copy to the Tenure and Promotions Office.)

F. External Recognition of Teaching

(Include CAUT grants, invitations to speak or present at other institutions, etc)

Invited research seminar at Manipal University, India, 9/04
 Invited research seminar at Pune University, India, 9/04
 Invited research seminar at Colombo, Sri Lanka, 3/04
 Invited research seminar at Anna University, Chennai, 3/04
 Invited research seminar at Pune University, Pune, 3/04
 Invited research seminar at IIT Bombay, Mumbai, 3/04
 Invited research seminar at Bangalore University, Bangalore, 3/04
 Invited research seminar at J Nehru University, New Delhi, 3/04
 Invited research seminar at IIT Delhi, New Delhi, 3/04
 Keynote Speaker at ICAPR, Indian Statistical Institute, Calcutta 12/2003
 Workshop Keynote Speaker, IEEE – Joint CSS/R&A Societies Chapter, Queensland ITEE Committee – Queensland, Engineers Australia INTELLIGENT ROBOTIC SYSTEMS WORKSHOP, Brisbane, 12/2003
 Invited research seminar at Sohar Univ, Oman, 3/02
 Invited research seminar at Nanyang Tech Univ, Singapore 3/02
 Invited research seminar at Nanyang Polytechnic, Singapore 3/02
 Invited research seminar at Ngee Ann Polytechnic, Singapore 3/02
 Invited research seminar at Temasek Polytechnic, Singapore 3/02
 Invited research seminar at NUS, Singapore 2/01
 Conference Dinner Speaker DICTA2002, Melbourne, 1/02
 Invited research seminar at Nanyang Tech Univ, Singapore 2/01
 Invited research seminar at Nanyang Polytechnic, Singapore 2/01
 Invited research seminar at Ngee Ann Polytechnic, Singapore 2/01
 Invited research seminar at Temasek Polytechnic, Singapore 2/01
 Invited research seminar at Singapore Polytechnic, Singapore 2/01
 Invited research seminar to IEEE Meeting at QUT, 24/4/01
 Invited research seminar at University of Alberta, Edmonton, Canada 12/00
 Invited research seminar at Michigan State University, Lansing, Michigan, USA 11/00
 Invited research seminar at George Washington University, Washington DC, USA 10/00
 Invited research seminar at MIT MediaLab, Boston, USA 10/00
 Invited research seminar at University College, Dublin, Ireland 9/00
 Invited research seminar at the University of Nantes, France 8/00
 Invited research seminar at the University of Stuttgart, Germany 7/00
 Invited research seminar at Daimler-Chrysler, Ulm, Germany 7/00
 Invited research seminar at Cambridge University, UK 7/00
 Invited research seminar at University of Birmingham, UK 7/00
 Invited research seminar at NUS, Singapore 6/00
 Invited research seminar at Nanyang Tech Univ, Singapore 6/00
 Invited research seminar at Nanyang Polytechnic, Singapore 6/00
 Invited research seminar at Ngee Ann Polytechnic, Singapore 6/00
 Invited research seminar at Temasek Polytechnic, Singapore 6/00
 Invited research seminar at Singapore Polytechnic, Singapore 6/00

Invited research seminar to IEAust, 22/5/96

Invited research seminar at Griffith University, 8/8/96

Industry course presenter at the International Summer School of Engineering, 12/96

G. Comments/Reflections from the Staff Member on their teaching role and practice

*(Tenure and/or Promotion applicants need to complete this section. It is **optional** for other appraisees.)*

Overall, I think that the students in my classes are satisfied. I have never had a complaint against my teaching raised with the Head or other external persons, and favourable comments such as "One of the best lecturers in the department (if not the best)" appear fairly regularly among the TEDI student comments. I am regularly nominated on the Dean's list as one of the best lecturers. All of my subjects in the EE/CSE programs are flexibly delivered via the Web, since the students appear to appreciate this method of delivery. My lectures also formed the basis of a successful industry short course at the International Summer School of Engineering, where I achieved the highest ever student appreciation scores (4.7/5.0).

RESEARCH AND ORIGINAL ACHIEVEMENT - 1

In all sections of Folio 3, cover research progress and achievements over the period since your last appraisal. In the case of applicants for promotion, however, evaluation will concentrate on the period commencing from your appointment/last promotion to current level. In the case of applicants for tenure, evaluation will be based on all research progress and achievements since appointment.

A. Summary statement of research activity

(1) Summary of major research themes

(Provide a brief summary of no more than two paragraphs of the major themes/areas of research in which you are involved.)

Signal and Image Processing, computer vision, signal and image analysis, machine learning, classification, pattern recognition, wireless and wired computer networks, embedded systems, visualisation, mobile location services

(2) Recent research progress and achievements

(Provide a brief summary of no more than two paragraphs of your research progress and achievements.)

Brian Lovell has been a named investigator of several ARC large, small, and other grants totalling \$6.7 million over the last 10 years. In 2000, he was visiting professor at MIT Media Lab, Michigan State University, University of Alberta, and University of Stuttgart. He also gave seminars at Cambridge, Daimler Chrysler (Ulm, Germany), University College Dublin, and George Washington University. Brian was invited as speaker at the 23rd Annual International Conference of the IEEE Engineering in Medicine and Biology Society in Istanbul, 2000 but was unable to attend due to September 11 attack. He has again been invited to the 24th Conference in Houston in 2002. Brian also referees for many of the major IEEE and other conferences and journals in his domain of expertise. He has served on the UQ faculty research committee for ARC small grants and has also assessed ARC grants from several other institutions. In 2001 he was nominated to the ARC Expert Advisory Panel by the Vice-Chancellor.

Recent research is focussed on image segmentation and medical diagnostics with application to the early detection of cervical cancer through the Cooperative Research Centre for Sensor Signal and Image Processing. A major outcome of this research is a cell image segmentation system, which has achieved 99.7% correct segmentation of the nucleus from cytoplasm over a large database of 20,000 cell images. This work was presented as a Technical Keynote address at DICTA97 in New Zealand and won the prize for best student paper. The methods were protected by a provisional patent, which has now been filed as a full patent. This has directly led to a US\$100, 000 (in-kind) contribution from the Chicago-based company, Accumed, on the basis that they would have the right to commercialise outcomes of the system. Brian holds an international patent on biomedical image processing technology. This patent is a key part of the IP has recently led to a research contract for 1.5 million over 3 years to a Virginia-based biomedical company, Monogen, specialising in early lung cancer detection (www.monogen.com).

Another area of research is tracking and annotating moving objects through video sequences that would have applications in medical diagnostics, building security, and smart computer interfaces. This research is complementary to current research on human face recognition and machine learning. I established a research laboratory IRIS (Intelligent Real-time Imaging and Sensing) in 2000 to pursue this research and capitalise on my international

research links through the IAPR. We have now built computer vision systems that can track human faces in real time and recognise faces offline.

RESEARCH AND ORIGINAL ACHIEVEMENT - 2

B. Specific Research Projects**(1) Current research projects**

List specific research projects which you are currently undertaking (as distinct from specific grants, covered in Section C(1), Folio 3-3). Note in each case the year in which the project first commenced, the members of the research team, showing the Chief Investigator and your role if you are not a Chief Investigator, and the source of funding (if any).

Year	Current Research Projects	Granting Agency (if any)	Amount (if any) \$	Chief Investigators & Staff Member in order	Percent Contribution
2003	Low-cost real-time numberplate recognition			Brian Lovell, research students	50%
2002	Learning theory applied to hidden Markov Models			Brian Lovell, research students	60%
2002	Real Time Gesture Recognition			Brian Lovell, research students	60%
2002	Real Time Face Recognition			Brian Lovell, research students	60%
2001	Video Coding			Brian Lovell, research students	60%
2002	Gesture Recognition			Brian Lovell, research students	60%
1992-2001	Cytometrics (I have now largely withdrawn from this project due to its commercial nature)	CSSIP	190,000pa	I. D. Longstaff, P.Jackway, B.Lovell, Pascal Bamford, PhD students	20%
1999	Real-Time Imaging and Sensing, face recognition, motion tracking, content-addressible image databasing			Brian Lovell, research students	60%

(2) Completed research projects

List specific research projects completed (as distinct from specific grants completed, covered in Section C(2), Folio 3-3). In each case indicate the year(s) over which the project was conducted, Chief Investigators (if any) and the source of funding.

Year(s)	Completed Research Projects	Granting Agency (if any)	Amount \$	Chief Investigators & Staff Member in order	Percent Contribution
	I have listed all my projects in C(2) as they were generally under grants or are still ongoing within the CRC				

RESEARCH AND ORIGINAL ACHIEVEMENT - 3

C. Research Grants and Contracts

(1) Current research grants and contracts

List research grants and contracts currently held, indicating in each case the project title, the granting agency, the amount received, the Chief Investigators (listed in the order they appear on the application) and your percentage contribution.

Year	Title of Current Research Grant or Contract	Granting Agency	Amount \$	Chief Investigators & Staff Member in order	Percent Contribution
2004	Lovell et al, Improving Australia's Data Mining and Knowledge Discovery Research	ARC	20,000	Lovell et al	5%
2004	ARC Network in Imaging Science and Technology	ARC	10,000	Lovell et al	5%
2004	ARC Research Network in Multimedia Technology and Applications (MTA)	ARC	10,000	Lovell et al	5%
2002	Embedded System Rapid Prototyping Laboratory (Extension to 6-layer facility)	UQ RIF	140,000	Brian Lovell	100
2001	Embedded System Rapid Prototyping Laboratory (2-layer facility)	ITEE Strategic	75,000	Brian Lovell	100
1994-2001	Cytometrics (I have now largely withdrawn from this project due to its commercial nature)	CSSIP	190,000 pa	I. D. Longstaff, P. Jackway, P. Bamford B. Lovell	20

(2) Completed Research Grants and Contracts

List (showing most recent first) research grants and contracts held. In each case indicate the project title, the granting agency, the amount received, the Chief Investigators (listed in the order they appeared on the application) and your percentage contribution.

Year	Title of Completed Research Grant or Contract	Granting Agency	Amount \$	Chief Investigators & Staff Member in order	Percent Contribution
1999	Special Research Centre for Functional and Applied Genomics	ARC	3.7 mil	J. Mattick, P. Andrews, B. Wainwright, ..., B.Lovell, (36 named researchers)	~2%
1996	Development of Metrics for Texture Classification Algorithms	UQNRS	15,898	G. Smith, B. Lovell	20
1994-1997	Three-Dimensional Imaging from Spaceborne	ARC	150,000	I. D. Longstaff, B. Lovell	20

1993	Synthetic Aperture Radar Automatic PAP Smear Classification	ARC	18,000	B. Lovell, I.D. Longstaff	50
1993	Video Motion Detection and Passive Surveillance System	UQNRS	21,000	B. Lovell, I. D. Longstaff	80
1992- 1995	Ground Penetrating Radar	GIRD	870,000	I. D. Longstaff, B. Lovell, N. Shuley	10
1991- 1994	Speaker Verification Using Artificial Neural Networks	Synd R&D	1.7 mil	T. Downs, A. C. Tsoi, M. Schulz, B. Lovell	25

RESEARCH AND ORIGINAL ACHIEVEMENT - 4

(3) Submitted or Planned Grants and Projects

(List those grant applications or projects submitted or planned where the outcome is pending.)

Submitted/Planned Research Grants and Projects	Granting Agency	Amount \$	Chief Investigators & Staff Member in order	Percent Contribution
2004 Lovell and Kubik, Automatic Financial Document Processing with Signature Verification	ARC Linkage	300k	Brian Lovell, Kurt Kubik	70%
2004 Lovell, Automated Movement Analysis and Feedback for Sports Training	ARC Linkage	380k	Brian Lovell	100%

(4) Other Attempts to Gain Funding.

(Completion of this section is optional. The Tenure and Promotions Committee wishes to recognise the work done in the preparation of research grant applications, even if they have not been successful.)

Year	Grants Requested	Granting Agency	Amount \$	Chief Investigators & Staff Member in order	Percent Contribution
2004	Bistatic Target Detection Using Multiple Illuminators of Opportunity	ARC Discovery	280k	Mojarrabi, Lovell, Homer	20%
2004	Automated 3-D Reconstruction of Buildings from Laser Scan Data and Aerial Images	ARC Discovery	450k	John Trinder, Brian Lovell	30%
2003	Lovell, Automated Movement Analysis and Feedback for Sports Training	ARC Linkage	46k	Brian Lovell	100%
2002	Real-Time Reconfigurable Distributed Hardware-Software Imaging	ARC Discovery	400k	Brian Lovell and Peter Kootsookos	50%
2002	Lovell, Automated Movement Analysis and Feedback for Sports Training	ARC Linkage	46k	Brian Lovell	70%
2001	Radio Frequency/Microwave Communications Engineering	UQ RIF	\$1.3 million	ITEE, CSSIP, CRCES (Although I am not listed as a Key Researcher, this proposal was written by	20%

2001	Radio Frequency/Microwave Communications Engineering Centre of Excellence Proposal	DSD	\$650k	Aleks Rakic, Simon Kaplan, and myself based on the DSD proposal below to obtain funding for communications engineering on about 1/11) ITEE (no named investigators, however I have the emails confirming that I wrote the proposal from the school under the signature of HOS on 8/10)	80%
2001	Development of a Queensland Repository for Digital Medical Images	ARC Linkage	114k	M. Deriche, A. Maeder, B. Pham, B. Lovell, L. Walker, P. Jackway	30%
2000	The Open-Ended Classifier Problem in the Context of Real-Time Human Face Recognition	ARC	284k	B. Lovell, I. D. Longstaff	50%
1999	Real-Time Human Face Recognition in Cluttered Visual Environments and the Open-Ended Classifier Problem	ARC	274k	B. Lovell, I. D. Longstaff, P. J. Kootsookos	50%
1995	Machine Analysis and Classification of Melanoma Images	ARC	21,130	B. Lovell, N. Martin	80%
1994	Automatic Translation of Signal Processing Algorithms into High Speed Software/Hardware Hybrid Architectures	ARC	104,250	S. Parameswaran, B. Lovell	50%
1994	Point and Click Knowledge Acquisition System	ARC	28,869	B. Lovell	100%
1992	Statistical Filtering of Circular Time Series	ARC	24,108	B. Lovell	100%
1990	Detection of Transient Sonar Signals Using Neural Network Methodology	ARC	24,708	A. C. Tsoi, B. Lovell	20%

RESEARCH AND ORIGINAL ACHIEVEMENT - 5

D. Bibliographic Record

Please indicate percentage contribution to jointly authored publications. For each publication indicate whether (A) refereed or (B) non-refereed.

(i) Publications (*List most recent first*)

(* indicates most important works)

Chen, Shaokang and Lovell, Brian C. (2004) Illumination and Expression Invariant Face Recognition With One Sample Image. In International Conference on Pattern Recognition, 23-26 August 1, pages 300-303, Cambridge, UK.

Leung, C. and Appleton, B. and Lovell, Brian C. and Sun, C. (2004) An Energy Minimisation Approach to Stereo-Temporal Dense Reconstruction. In International Conference on Pattern Recognition, 23-26 August 4, pages 72-75, Cambridge, UK.

Liu, Nianjun and Davis, Richard I. A. and Lovell, Brian C. and Kootsookos, Peter J. (2004) Effect of Initial HMM Choices in Multiple Sequence Training for Gesture Recognition. In International Conference on Information Technology, 5-7 April 1, pages 608-613, Las Vegas.

Liu, Nianjun and Lovell, Brian C. and Kootsookos, Peter J. and Davis, Richard I. A. (2004) Model Structure Selection and Training Algorithms for a HMM Gesture Recognition System. In International Workshop in Frontiers of Handwriting Recognition, 26-29 October 1(1), pages 100-106, Tokyo.

Liu, Nianjun and Lovell, Brian C. and Kootsookos, Peter J. and Davis, Richard I. A. (2004) Special Shape Gestures to Enhance HMM Model Training. In IEEE TENCON 2004, 21-24 November X(X), ChangMai, Thailand.

McKinnon, David N. and Lovell, Brian C. (2004) Tensor Algebra: A Combinatorial Approach to the Projective Geometry of Figures. In IWCIA - Tenth International Workshop on Combinatorial Image Analysis, 1-3 December XX(XX), pages XX-XX, Auckland.

Robinson, Martin and Kubik, Kurt and Lovell, Brian C. (2004) A First Order Predicate Logic Formulation of the 3D Reconstruction Problem and its Solution Space. International Journal of Pattern Recognition and Artificial Intelligence XX(XX):1-2.

Davis, Richard I. A. and Lovell, Brian C. (2003) Comparing and Evaluating HMM Ensemble Training Algorithms Using Train and Test and Condition Number Criteria. Pattern Analysis and Applications(6):327-336.

Brian C. Lovell, Anthony J. Maeder, Clinton Fookes, and Duncan Campbell (Ed), Proceedings of Australian and New Zealand Intelligent Information Systems, QUT Press, December 10-12, 2003

Brian C. Lovell and Anthony J. Maeder (Ed), Proceedings of the Workshop on Digital Image Computing, APRS, Brisbane, February 7, 2003.

*Brian C. Lovell, "Hidden Markov Models for Spatio-Temporal Pattern Recognition and Image Segmentation," Proceedings of International Conference on Applications of Pattern Recognition, Keynote Invited Paper, pp 60-65, Calcutta, December, 2003

*Christian J. Walder and Brian C. Lovell, "Kernel Based Algebraic Curve Fitting," Proceedings of International Conference on Applications of Pattern Recognition, Calcutta, pp 387-390, December, 2003

Nianjun Liu, Brian C. Lovell and Peter J. Kootsookos, "Evaluation of HMM training algorithms for

Letter Hand Gesture Recognition" Proceedings of IEEE International Symposium on Signal Processing and Information Technology, Paper WA4-7, December 14-17, 2003, Darmstadt, Germany.

Christian J. Walder, Brian C. Lovell, and Peter J. Kootsookos, "Algebraic Curve Fitting Support Vector Machines," Proceedings Digital Image Computing Techniques and Applications, pp 693-702, Sydney, Australia 10-12 December 2003

Nianjun Liu and Brian C. Lovell, "Gesture Classification Using Hidden Markov Models and Viterbi Path Counting" Proceedings Digital Image Computing Techniques and Applications, pp 273-282, Sydney, Australia 10-12 December 2003

David N. McKinnon and Brian C. Lovell, "Towards Closed Form Solutions to the Multiview Constraints of Curves and Surfaces" Proceedings Digital Image Computing Techniques and Applications, pp 519-528, Sydney, Australia 10-12 December 2003

Shaokang Chen and Brian C. Lovell, "Face Recognition with One Sample Image per Class," Proceedings of ANZIS2003, pp 83-88, Sydney, December 10-12, 2003

Andrew W. B. Smith and Brian C. Lovell, "Autonomous Sports Training from Visual Cues," Proceedings of ANZIS2003, pp 279-284, Sydney, December 10-12, 2003

Enrico Hinrichs, Ben Appleton, Brian C. Lovell, and Graham John Galloway, "Autonomous Direct 3D Segmentation of Articular Knee Cartilage," ANZIS2003, pp 417-420, Sydney, December 10-12, 2003

Christian J. Walder, Peter J. Kootsookos, and Brian C. Lovell, "Towards a Maximum Entropy Method for Estimating HMM Parameters," Proceedings of WDIC2003, pp 45-49, February 7, Brisbane, 2003

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Robert J. Andrews and Brian C. Lovell, "OFCat: An Extensible GUI-driven Optical Flow Comparison Tool," Proceedings of WDIC2003, pp 129-133, February 7, Brisbane, 2003

Robert J. Andrews and Brian C. Lovell, "Colour Optical Flow," Proceedings of WDIC2003, pp 135-139, February 7, Brisbane, 2003

David McKinnon, Barry Jones, and Brian C. Lovell, "[Polytopes, Feasible Regions and Occlusions in the n-view Reconstruction Problem](#)," Proceedings of WDIC2003, pp 77-82, February 7, Brisbane, 2003

Richard I. A. Davis and Brian C. Lovell, "[Improved Ensemble Training for Hidden Markov Models using Random Relative Node Permutations](#)," Proceedings of WDIC2003, pp 83-86, February 7, Brisbane, 2003

Carlos Leung and Brian C. Lovell, "[3D Reconstruction through Segmentation of Multi-View Image Sequences](#)," Proceedings of WDIC2003, pp 87-92, February 7, Brisbane, 2003

Robert J. Andrews and Brian C. Lovell, "[OFCat: An Extensible GUI-driven Optical Flow Comparison Tool](#)," Proceedings of WDIC2003, pp 129-133, February 7, Brisbane, 2003

Robert J. Andrews and Brian C. Lovell, "[Colour Optical Flow](#)," Proceedings of WDIC2003, pp 135-139, February 7, Brisbane, 2003

David McKinnon, Barry Jones, and Brian C. Lovell, "[A Closed Form Solution to the Reconstruction and Multi-View Constraints of the Degree-D Apparent Contour](#)," Proceedings of WDIC2003, pp 145-148, February 7, Brisbane, 2003

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Richard I. A. Davis, Christian Walder and Brian C. Lovell "Improved Classification Using Hidden Markov Averaging From Multiple Observation Sequences, Proc of WOSPA2002, pp 89-93, December 17-18, Brisbane, 2002

S. S. Chen, Brian C. Lovell and S. Sun, "Face recognition with APCA in variant illuminations," Proc of WOSPA2002, pp 9-12, December 17-18, Brisbane, 2002

Nianjun Liu and Brian C. Lovell, "Real-Time Two Hands Tracking System," Proceedings of The International Technical Conference on Circuits and Systems, Computers and Communications, Phuket, Thailand, July 16-19, 2002 (A 50%)

*Richard Davis and Brian C. Lovell, "Improved Estimation of Hidden Markov Model Parameters from Multiple Observation Sequences," Proc of ICPR2002, pp168-171, Quebec City, August 8-15, 2002 (A 50%)

D. Vignon, Brian C. Lovell, and Robert J. Andrews "General Purpose Real-Time Object Tracking using Hausdorff Transforms," Accepted, Invited paper, Proceedings of IPMU2002, pp 487-492, Annecy, July 1-5, 2002, (A 80%)

D. Vignon and Brian C. Lovell, "Real-time Hausdorff-Based Tracking," Proceedings of DICTA2002, pp 336-341, Melbourne, 21-22 January, 2002 (A 80%)

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Brian C. Lovell and Daniel Heckenberg, "Low-Cost Real-Time Gesture Recognition," Proceedings of ACCV2002, pp 336-341, Melbourne, 22-25 January, 2002 (A 80%)

Shaokang Chen and Brian C. Lovell, "Real-Time MMX-Accelerated Image Stabilization System," Proceedings of IVCNZ2001, pp 163-168, Dunedin , 26-28 November, 2001 (A 50%)

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Pascal Bamford and Brian Lovell, "Method of Cell Nuclei Segmentation," Full Patent Application Number PP2786, 1st April, 1999 (A 30%)

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Images," in *New Approaches in Medical Image Analysis, Proceedings of ARC Special Research Workshop on Automated Medical Image Analysis*, B. Pham and M. Braun Ed., Ballarat, SPIE, pp 34-56, July, 1998 (A 30%).

*Pascal Bamford and Brian Lovell, "Unsupervised Cell Nucleus Segmentation with Active Contours," *Signal Processing – Special Issue on Deformable Models and Techniques for Signal and Image Processing*, V 71, pp 203-213, December, 1998 (A 50%)

*Pascal Bamford and Brian Lovell, "Improving the Robustness of Cell Nucleus Segmentation," *Proceedings of British Machine Vision Conference*, V2, pp 518-524, September 14-17, 1998 (A 50%)

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Priantha Mudalige and Brian Lovell, "Machine vision for colour classification of natural fruits," *DICTA97*, Auckland, NZ, December 10-12, pp 131-136, 1997 (A 50%).

Pascal Bamford and Brian Lovell, "A two stage scene segmentation scheme for the automatic collection of cervical cell images," *Proceedings of IEEE TENCON97, IEEE Region 10 Conference*, Brisbane, 2-4 December, pp 683-686, 1997 (A 50%).

R. Paget, I. D. Longstaff, B. Lovell, "Texture classification using nonparametric random fields," *Invited Paper at DSP97 -- 13th International Conference on Signal Processing*, Santorini, Greece, pp 67-70, July 2-4, 1997 (A 33%).

B. C. Lovell, "Classification of Cytometric Texture Features," *Electronic Imaging, SPIE*, 7, no. 1, pp. 1-2, January, 1997, (A 100%)

P. Bamford and B. C. Lovell, "A water immersion algorithm for cytological image segmentation," *APRS Image Segmentation Workshop*, pp. 75—79, Sydney, December 13, 1996, (A 50%)

*B. C. Lovell and A. P. Bradley, "The multiscale classifier," *IEEE Trans. on Pattern Analysis And Machine Intelligence*, 18, no. 2, pp. 124-137, 1996, February (A 50%).

A. P. Bradley, P. T. Jackway and B. C. Lovell, "Classification in scale-space: Applications to texture analysis," *Proceedings of the XIVth International Conference on Information Processing in Medical Imaging IPMI*, pp. 375-376, Ile de Berder, France, 1995 (A 30%).

J. Homer, G. Buddis, D. Longstaff and B. Lovell, "Image Registration for Interferometric SAR via Sub- traction Image Methods," *Proc. Digital Image Computing: Techniques and Applications*, pp. 461-466, Brisbane, 1995 (A 10%).

A. Bradley, P. Jackway and B. Lovell, "Scale-Space Texture Analysis," *Proc. Digital Image Computing: Techniques and Applications*, pp. 68-73, Brisbane, 1995 (A 30%).

A. Maeder and B. Lovell, Eds., *Proc. Digital Image Computing: Techniques and Applications*. Brisbane: Australian Pattern Recognition Society, 6-8 December, 1995 (B 50%).

B. Lovell, P. Jackway and D. Longstaff, "On the Automation of Pap Smear Analysis," *Proc. Digital Image Computing: Techniques and Applications*, pp. 312-317, Brisbane, 1995 (A 80%).

- G. Smith and B. Lovell, "Metrics for Texture Classification Algorithms," Proc. Digital Image Computing: Techniques and Applications, pp. 223-227, Brisbane, 1995 (A 30%).
- R. Walker, P. Jackway and B. Lovell, "Cervical Cell Classification via Co-Occurrence and Markov Random Field Features," Proc. Digital Image Computing: Techniques and Applications, pp. 294-299, Brisbane 1995 (A 30%).
- A. Bradley, B. Lovell and M. Ray, "On the methodology for comparing learning algorithms: a case study," Australian and New Zealand Conference on Intelligent Information Systems, pp. 37-41, Brisbane, 1994 (A 40%).
- A. P. Bradley and B. C. Lovell, "Inductive learning using multiscale classification," Australian Conference on Neural Networks, pp. 133-136, Brisbane, 1994, January (A 50%).
- S. Lee and B. C. Lovell, "Modelling and classification of shapes in two-dimensions using vector quantization," Proc. IEEE Int. Conf. on ASSP, 5, pp. 141-144, 1994 (A 50%).
- M. B. Jeacocke and B. C. Lovell, "A multi-resolution algorithm for cytological image segmentation," Australian and New Zealand Conference on Intelligent Information Systems, pp. 322-326, Brisbane, 1994 (A 50%).
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- S. Lee and B. C. Lovell, "2-D shape classification by hidden Markov models and vector quantization," Proc. Digital Image Computing: Techniques and Applications, pp. 810-817, December, Sydney, 1993 (A 50%).
- M. Jeacocke and B. C. Lovell, "A quadtree approach to cell segmentation of pap smear slides," Proc. Digital Image Computing: Techniques and Applications, pp. 328-334, December, Sydney, 1993 (A 50%).
- *B. C. Lovell, R. C. Williamson and B. Boashash, "The relationship between instantaneous frequency and time-frequency representations," IEEE Trans. Signal Processing, 41, no. 3, pp. 1458-1461, March, 1993 (A 80%).
- K. H. Luu and B. C. Lovell, "Motion Compensation in the analysis of retinal imaging," Proc Digital Image Computing: Techniques and Applications, pp. 780-785, December, Sydney, 1993, (A 50%)
- R. Paget, I. D. Longstaff and B. C. Lovell, "Mutiprocessor adaptation of a texture segmentation scheme for satellite radar images," Proc. Digital Image Computing: Techniques and Applications, pp. 203-211, December, Sydney, 1993 (A 50%).
- T. Downs, A. C. Tsoi, M. Schulz, B. C. Lovell, M. Barlow, I. Booth, D. Shrimpton and B. Watson, An overview of the speaker verification project at the University of Queensland," Speech Science and Technology, pp. 62-66, December, 1992 (A 12%)
- P. Kootsookos, A. C. Tsoi and B. C. Lovell, "Speech enhancement for robust speaker verification," Speech Science and Technology, pp. 521-526, December, 1992 (A 33%).
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- B. C. Lovell and R. C. Williamson, "The statistical performance of some instantaneous frequency estimators," IEEE Trans. Signal Processing, 40, no. 7, pp. 1708-1723, July, 1992 (A 90%).
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B. C. Lovell and A. C. Tsoi, "Speaker Verification using artificial neural networks," Speech Science and Technology, pp. 298-303, Melbourne, 1990, also presented at the Australian Conference of Artificial Neural Networks in Sydney, February 1991 (A 50%).

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B. C. Lovell and B. Boashash, "Segmentation of non-stationary signals with applications," Proc. IEEE Int. Conf. on ASSP, pp. 2685-2688, New York, 1988 (A 60%).

B. Boashash, B. C. Lovell and L. B. White, "Time-frequency analysis and pattern recognition using singular value decomposition of the Wigner-Ville distribution," Proc. SPIE Conf. On Advanced Algorithms and Architectures for Signal Processing, 826, pp. 104-114, San Diego, 1987 (A 33%)

B. Boashash, B. C. Lovell and H. J. Whitehouse, "High-resolution time-frequency signal analysis by parametric modelling of the Wigner-Ville distribution," Proc. Int. Symposium on Signal Processing and Its Applications, pp. 297-302, Brisbane, 1987 (A 70%).

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(ii) Accepted/in press

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Brian C Lovell and Shaokang Chen, "Robust Face Recognition for Data Mining," Invited Chapter Encyclopedia of Data Warehousing and Mining, Accepted, In Press.

Martin Robinson, Kurt Kubik, and Brian C. Lovell, "A First Order Predicate Logic Formulation of the 3D Reconstruction Problem and Its Solution Space," International Journal of Pattern Recognition and Artificial Intelligence, October, 2003, Accepted, In Press

(iii) Submitted

Richard I. A. Davis and Brian C. Lovell, "Properties of the Viterbi Path Counting Algorithm for HMM Training," Electronic Letters on Computer Vision and Image Analysis, November, 2003, Submitted

(iv) Other papers presented (eg conference papers, reports)

A. P. Bradley and B. C. Lovell, "The Multiscale Classifier: Preliminary Results on the Prediction of Post-Operative Bleeding," CSSIP, CSSIP Technical Report, 1994 (B 20%)

B. C. Lovell and A. P. Bradley, "The Multiscale Classifier," Centre for Sensor Signal and Information Processing, CSSIP Technical Report, 1993 (B 50%).

R. Paget, I. D. Longstaff and B. C. Lovell, "Texture recognition in SAR images," Workshop on Pattern Analysis/Recognition, Townsville, 1992 (B 20%)

Comments on Research

Before sabbatical in 2000, I found that my research time was mostly committed to the CRC for Sensor Signal and Information Processing which would supply infrastructure for supported projects and scholarships for students. The difficulty in this structure was to genuinely find the time and develop the research edge to apply for grants outside the CRC structure (*e.g.*, ARC) as the CRC took up all my efforts. For these reasons, I have established a new research group IRIS (Intelligent Real-Time Imaging and Sensing) so I can now apply for grants outside the CRC framework and publish freely in most areas. This group has about 15 active students and 6 active academic staff at present.

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Folio 4

SERVICE - 1

A. Service within Department

(Include departmental committee memberships, and other service positions and projects etc. List most recent first. Indicate the duration and nature of role undertaken.)

Date(s)	Description of Role
2004	Director of Engineering Programs
2004	Program Director of Electrical Engineering
2004	Member of ITEE T&L
2004	Chair of Engineering Curriculum Committee
2003	Member of IT Working Party whose brief was the primarily the redesign of IT and Software Engineering Programs
2003	Chair of Engineering Curriculum Committee
2002	Program Director of Electrical Engineering
2002	Member of School Research Committee
2002	Member of School Curriculum Committee
2002	Member of School Teaching and Learning Committee
2002	Member of School Marketing Committee
2002	Member of School Executive Committee
2002	Recruited overseas students in Singapore, Careers 2002 Education Promotion, visits and seminars given at polytechnics
2001-2002	ITEE Alumni President: Sponsorship agreement of 10k signed with Queensland Government, Organiser of Inaugural Alumni Dinner.
1998-2002	International Development Role: Responsible for marketing and development of EE program in Singapore, Hong Kong, and China. Electrical Engineering is now one of the highest international revenue earning programs at UQ and growing rapidly.
2001	School Representative on Chair Selection committee chaired by Professor Paul Greenfield where our two most recent ITEE professors were appointed.
2001	ITEE Innovation Expo, Deputy Coordinator
2001	Dual Degree Advisor EE/CSE/SE
2001	Head of Division of Electrical and Communications Engineering
2001	Recruited overseas students in Hong Kong and China, Austrade Education Promotion
2001	Recruited overseas students in Singapore, Austrade Education Promotion
2001	Recruited overseas students in Singapore, Careers 2001 Education Promotion
2000-2001	Member of TAL, Curriculum, Engineering Curriculum committees
1998-2001	Dual, Double, Parallel, and Combined Degree Adviser (EE/CSE)
2000	Recruited overseas students in Singapore, Austrade Education Promotion
2000	Recruited overseas students in Singapore, Temasek Open Day
2000	Head of Division of Electrical Engineering
2000	Chair of Information Technology Policy Committee
1999	Recruited overseas students in Singapore, Diploma to Degree program
1999	IT&T awards departmental co-ordinator
1998	Set up a meeting with the State Government (Nick Notaris) to assist UQ to take a leading role in the Government's Microelectronics and CRC initiative.

1998	Nominated winning entry "Roboroos" in IT&T awards to improve departmental profile with government and industry. The student team won \$10,000 in the Student Group Project Category
1998-1999	EE Representative on Engineering Board of Studies
1998-1999	Mathematics Representative
1999	Curriculum Committee
1999	EE representative on Information Technology Policy Committee
1996-1999	Year II Adviser (EE/CSE)
1994-1999	Australian Pattern Recognition Society Representative
1998	Chairman of IT Policy Committee
1996-1997	Computer Policy Committee Chairman
1995-1996	Computer Policy Committee Member
1995-1997	World Wide Web Coordinator
1990-1997	Computer Purchasing and Network Management Adviser (with Mark Schulz)
1992-1995	Postgraduate Adviser
1990-1995	Australian Speech Science and Technology Association Representative
1992-1993	Chairman of Computer Users Group
1992	Expo Uni Coordinator
1990	Organiser of Australian Micromouse Championships; My team from UQ won.

B. Service to University

(Include faculty, university committee memberships, other service positions and projects, and serving as a representative of the University on external bodies. List most recent first. Indicate the duration and nature of role undertaken.)

Date(s)	Description of Role
2004	Developing MOA with IIT Bombay
2004	Developing MOA with University of Bangalore
2004	Member of UQ Graduation Party in Singapore (2 days)
2004	Member of Premier's Trade Mission to India (7 days)
2004	Lecture Tour of India and Sri Lanka for QETI and UQ (16 days)
2004	Member of SOE T&L Committee
2004	Quality Assurance visit to Sohar University Oman (6 days)
2004	Member of UQ Academic Board
2004	Member of Faculty Board
2003	Quality Assurance visit to Sohar University Oman (6 days)
2002	Coordinator of EPSA PCB Prototyping facility (my RIF grant paid for this)
1999	Member of EPSA research committee reviewing Small ARC and New Staff grants
1998-2002	EE Representative on Engineering Board of Studies
1997	VCIT Purchasing Committee Member
1997	Board of Studies IT Committee Departmental Representative
1992-1995	Faculty Postgraduate Studies Committee Departmental Representative
1992	Faculty Mathematics Working Party Member

SERVICE - 2

C. External Service

Professional (including refereeing articles, etc)	Date(s)	Description of Role
ICPR2008 (Tampa)	2008	Program Chair for Tampa Florida
ICCV2008 (Sydney)	2008	Bid Committee
ICPR2006 (Hong Kong)	2006	Track Co-Chair Computer Vision
DICTA2005 (Cairns)	2005	General Chair
WDIC2005 (Brisbane)	2005	General Chair
PREMI'05 (Calcutta)	2005	Keynote Speaker
ITTC2004 (Las Vegas)	2004	Program Committee
MDM/KDD2003 (Washington)	2003	Program Committee
ICAPR2003 (Calcutta)	2003	Program Committee
ICAPR2003 (Calcutta)	2003	Keynote Speaker
ANZIS2003 (Sydney)	2003	Technical Chair
IVCNZ2003 (NZ)	2003	Program Committee
DICTA2003 (Sydney)	2003	Program Committee
WDIC2003 (Brisbane)	2003	General Chair
MLDM2003, (Leipzig)	2003	Program Committee
SSPR 2002, (Windsor, Ontario)	2002	Program Committee
MDM/KDD2002 (Edmonton)	2002	Program Committee
PRIA-6-2002, (Belarus)	2002	Program Committee
Annual International Conference of the IEEE Engineering in Medicine and Biology Society (Houston)	November 2002	Invited Workshop Presenter
ICPR2002 (Quebec City)	2002	Program Committee
DICTA 2002 (Melbourne)	2000-2002	Program Committee
ACCV2002 (Melbourne)	2000-2002	Sponsorships and Publicity Chair
Annual International Conference of the IEEE Engineering in Medicine and Biology Society (Istanbul)	Oct 2001	Invited Workshop Presenter (cancelled due to Sept 11)
MDM/KDD2001 (Edmonton)	2001	Program Committee
IVCNZ 2001 (Dunedin)	2001	Program Committee
IMAGE 2001 (Brisbane)	2001	General Co-Chair
ICPR2000 (Barcelona)	2000	Program Committee
ISPRS2004 (Brisbane)	1999-2000	Bid Committee
International Association for Pattern Recognition	1999-2001	Chair of Conferences and Meetings Committee
ICICS99 (Singapore)	1999	Program Committee
ICPR 2000 (Barcelona)	2000	Program Committee
DICTA99 (Perth)	1999	Reviewer
GPR2000 (Brisbane)	1999	Program Committee
IEEE TENCON (Seoul)	1999	Program Committee
International Association for Pattern Recognition	1998-2001	Voting Member for Australia on the Governing Board
International Association for Pattern Recognition	1998-1999	Member of Conferences and Meetings Committee

IEEE International Conference on Computer Networking (Brisbane)	1998-1999	Local Arrangements Chair
International Association of Pattern Recognition (Brisbane)	1997-1998	Local Organisation Chair for ICPR98
IEEE, IEE	1990-1999	Reviewer for Major Journals including: IEEE Trans on Signal Processing IEE Trans on Geosciences and Remote Sensing IEEE Trans on Pattern Analysis and Machine Intelligence Electronic Letters Journal of Applied Statistics Machine Vision and Applications Signal Processing
Australian Pattern Recognition Society	1996-2004	National President
Australian Pattern Recognition Society (APRS)	1995	General Chairman of DICTA95 Conference
Australian Pattern Recognition Society	1994-1995	Queensland President
IEEE	1994	Local Arrangements Chair for ACNN94 Conference
Australian Speech Science and Technology Organisation (ASSTA)	1992	Publicity Officer for SST92 Conference
IEEE, APRS, ASSTA	1990-1997	Reviewer for National Conferences including: DICTA95 SST92 ACNN94 ANZIIS94
Institution of Engineers, Australia	1990-1994	National Engineering Week Member

Community	Date(s)	Description of Role
Holy Family Primary School	2004	President of P&F Association
General Public	2003	Television Interview, Seven News
General Public	2002	Television Interview, Brisbane Extra
General Public	1992	National Radio Interview for Voice Authentication Research
General Public	1990	Live Interview on "Good Morning Australia" for Australian Micromouse Competition
General Public	1990	Three recorded interviews for state and national news about the "Australian Micromouse Competition"

D. Consultative and Related Outside Work

Project Description (Provide date, details of the client, the nature of the work, any partners, and outcomes)	Hours committed	Payment received Yes/No

2004, Forensic Photo Examination, Jade Chen	4	Yes
2004, Forensic Tape Examination, Scannela	7	Yes
2004, Forensic Tape Examination, Tabe	8	Yes
2003, Mobile Telephone Accessory Testing, Jack Chen	20	Yes
2003, Forensic Tape Examination, Graham Tabe	8	Yes
2003, Development of Audio Software, Nick Thyer, QUT	200	Yes
2003, Forensic Face Recognition, Commonwealth DPP	20	Yes
1996-1999, Several Job Interviews for John Davidson and Associates	20	Yes
9/95, Consultant on image enhancement for coronial inquiry Client: P. Wiemers, solicitors Outcome: Images successfully enhanced and the required information was obtained	4	Yes
1992, Consultant on tape authentication for civil law suit Client: Gilshennan and Luton solicitors Outcome: tape validity verified	6	Yes
8/91, Consultant on tape authentication for the Drummond Inquiry Client: R. Nase, barrister-at-law Outcome: tape validity could not be proven	5	Yes
8/91, Expert witness on tape authentication for the Drummond Inquiry Client: R. Nase, barrister-at-law	45	Yes

Comments on Service

From 1998 to 2002, I have had the responsibility for the developing and maintaining the Electrical Engineering degree in the Singapore, Hong Kong, and China Markets and have spent many days (up to 30 days a year) developing relations with our partners. I am also responsible for designing course plans for Singapore Polytechnic (Singapore, Ngee Ann, Nanyang, Temasek) students. In 2001, Electrical Engineering was the degree that was earning the highest international revenue at UQ beating both BCom and BBMan. Indeed ITEE had the largest international income of any school at UQ (about \$7 million in 2001) due largely to the strength of Electrical Engineering. While I have been managed the EE program the annual growth in numbers has exceeded 30% per annum up to 2002. I also marketed the IT programs in Singapore and signed up almost equal numbers of IT and EE students at the education shows. I also regularly visit the IT departments to touch base with colleagues and friends and report back to the Director of International Development upon my return.

Another example of my marketing innovation is a panoramic virtual tour of the school that I developed in 2001 with two interns from Singapore Poly. The site can be viewed at www.itee.uq.edu.au/virtualtour and allows the user to zoom in and out of images and rotate the images about in space. The site impressed Philip Hay and Monica Turvey of IED so that they listed it in the 2004 UQ International Prospectus. An article on the site and the interns' involvement is being developed for Singapore Poly to promote through their alumni magazine.

In recent years I have been immersed in the implementation of the new course plan which has been an enormous workload. The task of year 2 and dual degree student advising has been a great drain on my time until 2002, but provided very useful insight into course design issues. I currently serve as the Chair of the Engineering Curriculum Committee within the School.

I also devote a great deal of time to professional societies, especially through conference organisation. My greatest success has been the organisation of the International Conference on Pattern Recognition in the Brisbane Convention Centre in 1998. This conference had 620 delegates and a budget of over \$500,000. I was the only member of the organising committee in Brisbane apart from the tutorial co-chair, so I had to take on the jobs of the entire committee. I edited the proceedings, designed the program, arranged sponsors, maintained the website, negotiated deals with State Government, and generally worked round the clock for 6 months while maintaining a full academic load. Typically the conference organiser would be given 6 months leave of absence in past conferences. I arranged for a competent secretary to come from Vienna and work as my conference assistant for 5 months, so I could cope. Fortunately, the conference was a success both technically and socially — many said it was the best in the series since 1984 in the Hague, Netherlands.

I am often on the organising, program, bid committees, or invited workshop presenter of about 10 international and national conferences. Furthermore, I am the President of the Australian Pattern Recognition Society (150 members, <http://www.aprs.org.au>), Voting member for Australia on the governing board of the International Association of Pattern Recognition (7500 members, IAPR, <http://www.iapr.org>), and member (former Chair) of the IAPR Committee for Conferences and Meetings which approves sponsorship for about 50 international conferences annually, and member of the Nominating Committee of the IAPR.

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OTHER STAFF ACTIVITIES

Staff Development Activities

(Provide staff development activities undertaken during the year under review, including completion of workshops, short courses and teaching qualification programs.)

Year	Staff Development Activities
2001	Attended 2 day course on Management by Jack Knight Consulting
2000	Attended 2 day course for UQ Heads of Department
1999	Attended 1 day on Management given by Priority Manager
1995	Attended 4 day course on Advanced Signal Processing in Adelaide given by Professor fred harris of UCSD

Any other relevant activities

Year	Other Relevant Activities
2004	Attended IWFHR, Tokyo
2004	Accompanied Peter Beattie on trade mission to India
2004	Attended ICPR2004, Cambridge
2003	Attended and presented keynote at ICAPR Calcutta
2003	Attended ACEE Melbourne
2003	Attended and organised WDIC2003
2002	Attended IPME, Annecy, France
2002	Revisited MIT MediaLab and met with new CEO, Bill Mitchell
2002	Attended ICPR2002, Quebec City
2002	Attended ACCV2002, Melbourne
2002	Attended DICTA2002, Melbourne
2000	Attended ICPR2000, Barcelona
1999	Attended DICTA99, Perth
1999	Attended Techfest99, Adelaide
1998	Attended Techfest98, Adelaide
1998	Attended ICPR98 Conference, Brisbane
1997	Attended DICTA97, New Zealand
1997	Attended Techfest97, Adelaide
1996	Attended and presented at APRS Segmentation Workshop, Sydney
1996	Attended Techfest96, Adelaide
1995	Attended, presented, and chaired DICTA95, Brisbane
1995	Attended Techfest95, Adelaide
1994	Attended and presented at ICASSP94, Adelaide
1994	Attended, and helped run ACNN94, Brisbane
1994	Attended Techfest94, Adelaide
1993	Attended DICTA93, Sydney
1993	Attended and presented at Techfest93, Adelaide
1992	Attended, presented, and helped run SST92, Brisbane
1991	Attended and presented at ICASSP91, Toronto
1990	Attended and presented at SST90, Sydney
1989	Attended and presented at ASSPA, Adelaide
1988	Attended and presented at ICASSP88, New York
1987	Attended and presented at ISSPA97, Brisbane
1987	Attended and presented at SPIE Conference on Advanced Algorithms and Architectures for Signal Processing, San Diego

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SPECIAL STUDIES PROGRAM - 1

This folio is to be used when a staff member wishes to apply for a Special Studies Program or has completed a program in the year under review.

Proposal for Special Studies Program

(To be completed if staff member wishes to apply for Special Studies Program within the next 18 months.)

A. Duration

(For a period longer than 6 months, please justify the duration in Section C below.)

From:		To	
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B. Itinerary

(Provide institutions to be visited and planned dates. Also include periods to be spent locally.)

Institution	Dates

C. Description of Proposed Activities

(Include details of the research area, proposed activities, goals and expected outcomes, and the expected benefits to yourself and your Department.)

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SPECIAL STUDIES PROGRAM - 2

D. Special Studies Program Report

(To be included when the staff member has completed a program in the year under review, or wishes to apply for a program in the coming 18 months)

Staff returning from a Special Studies Program are required to send this folio to the Special Studies Officer through the Head of Department within three months of return to duty after a Special Studies Program.

(1) Duration of most recent program:

Commencement date	7/7/2000
Date of departure from Australia	17/6/2000
Date of return to Australia	22/1/2001
Completion date	22/1/2001

(2) Summary of Program

Dates	Main Institutions Visited or Other Activities
7/7/2000 – 22/7/2000	Presented seminar and visited University of Birmingham
23/7/2000 – 26/8/2000	Presented seminar and visited Cambridge University Researching at the Technical University of Stuttgart Presented seminar and visited Institute of Photogrammetry, University of Stuttgart Presented seminar and visited Image Understanding Group, Daimler-Chrysler, Ulm
27/8/2000 – 2/9/2000	Presented seminar and visited University of Nantes
3/9/2000 – 9/9/2000	Attended ICPR2000 Conference in Barcelona
10/9/2000 – 7/10/2000	Worked with E-Muse Pty Ltd in Dublin (Digital TV) Presented seminar and visited University College Dublin Attended seminar at Trinity College Attended seminar at MediaLab Europe
8/10/2000 – 4/11/2000	Attended Hell Week at MIT MediaLab, Boston Presented seminar and visited George Washington University, Washington
5/11/2000 – 2/12/2000	Presented seminar and visited Michigan State University
3/12/2000 – 3/1/2001	Presented seminar and visited University of Alberta, Edmonton
3/1/2001 – 22/1/2000	Returned home via Vancouver and Silicon Valley

(3) Report on most recent Program:

(Complete a 750 - 1500 word report of the achievements of this most recent program.)

The main purpose of this sabbatical leave is to capitalise on my international links established through organising ICPR98 and representing Australia on the governing board of the IAPR. Many of the world's leading laboratories in computer vision and pattern recognition were represented at the conference and had extended invitations for me to visit.

After visiting and presenting seminars at National University of Singapore, Nanyang Technological University, and four polytechnics in Singapore, I started my sabbatical leave in the UK. In the UK, I was invited to Cambridge University and University of Birmingham to present seminars and visit their researchers. Both institutions are remarkably similar to UQ Electrical Engineering in many respects. Even the linoleum on the floors at Birmingham was similar to that in the Axon Building. The most remarkable fact about being a researcher

in the UK is the amazing level of industry research support. It is just not available in Brisbane.

Once on the continent, I spent a month at the Technical University of Stuttgart. The visit was not especially productive because many of the researchers take their holidays over August, so I only managed a few talks and visits. After my time in Germany I visited the University of Nantes and attempted to organise a cooperation agreement between UQ and Nantes. UQ was unwilling to proceed, but I have still achieved good collaboration with them. Since arriving home, I have taken on a Nantes student for 6 months and Professor Dominique Barba is visiting at the end of April.

After France, I drove to Barcelona to attend the ICPR2000 Conference for a week. There were 1200 delegates. I also attended the IAPR Governing Board Meeting as voting member for Australia and Chair of the Conferences and Meeting Committee.

Next stop was Ireland where I worked with E-Muse Pty Ltd which is a digital TV start-up company. I wanted to experience life in a start-up and to understand why Ireland was such a successful country for IT development. I visited the newly-opened MediaLab Europe while in Dublin and gave seminars at University College Dublin. From my contacts here I have been invited to give a workshop in Istanbul (expenses paid) in October, 2001.

After Dublin, I stayed at the MIT MediaLab. Alex Pentland is Academic Head of the MIT Media Labs and was an invited speaker at ICPR. His computer vision group is one of the most highly funded and productive laboratories in the world. He offered to host me at MIT and is keen to help me establish a similar research group in Australia. From Boston, I flew to George Washington University, Washington DC, at the request of Murray Loew. I gave a seminar and visited the labs.

Next I drove to Lansing, Michigan. Anil K. Jain of Michigan State University was a Technical Co-Chair with ICPR98 and is a leading member of the research community. We keep in touch by e-mail every few weeks since we work on the Conferences and Meetings Committee of the IAPR. I spent a month with him to find out more about his approach to computer vision.

For my final month of collaboration, I visited Terry Caelli at the University of Alberta. This was a very productive time. We are in the process of writing several papers as a result of this period and another visit is planned.

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SPECIAL STUDIES PROGRAM - 3

(4) Report on Overseas University Travel

Please write a very succinct summary (25 to 45 words for each overseas trip undertaken), such that it can be included in the University's annual report to the State Government.

Brian Lovell visited Cambridge, University of Birmingham, Technical University of Stuttgart, University of Stuttgart, University of Nantes, University College Dublin, MediaLab Europe, MIT MediaLab, George Washington University, Michigan State University, and University of Alberta. The main theme of his trip was to visit the most outstanding laboratories in computer vision and image processing to find out how they achieved their success. Another theme was to discover how small countries like Ireland and Canada have been so successful in developing high technology industries.

(5) Adjustment to Special Studies Program Allowance

*Please complete the table below on the basis of actual travel undertaken, and enclose a cheque (payable to The University of Queensland) for any overpayment. Where an **approved** itinerary adjustment has increased the amount payable, the balance shall be paid to the staff member.*

	Allowances Received	Allowances Due	Balance
Basic Allowance			
Weekly Allowance (total)			
No of weeks for allowance claimed			
Total	All allowance was used, and then some!		

I certify that the statements in folios 6-2 and 6-3 are true and complete.

Date	Name of Staff Member	Signature
	Brian Lovell	

NOMINATION OF TEACHING REFEREES AND SCHOLARSHIP ASSESSORS

(Include addresses, telephone, facsimile numbers and email addresses)

To be completed by candidates for **Tenure and Promotion**.

Teaching

(i) Colleague or former colleague

Mark Schulz (Expert in Engineering Teaching)
Deputy Head ITEE
School of ITEE, UQ
+61 7 33654136, marks@itee.uq.edu.au

(ii) Student or former student

Research and Original Achievement

Professor Terry Caelli (Expert in Pattern Recognition and Image Analysis)
Department of Computing Science
University of Alberta
Edmonton, Alberta
CANADA T6G 2E8
Phone:
voice: (780) 492 3015
fax: (780) 492-1071
email: tcaelli@ualberta.ca

Professor Murray Loew (Expert in Biomedical Engineering and Pattern Recog)
Department of Electrical Engineering and Computer Science
The George Washington University
Washington DC 20052
voice:(202) 994-7181
fax:(202) 994-0227
email:loew@seas.gwu.edu

Service

Reader candidates exercising option (b), (see information booklet '*Applying for Tenure/Promotion/Mid-Term Review*') should provide names of two service referees.

Professor Anthony Maeder (Professional Service to the Scientific Community)
Head of School
School of Electrical and Electronic Systems Engineering
Queensland University of Technology
Phone: +61 7 38642179, a.maeder@qut.edu.au

Prof Gabriella Sanniti di Baja (Former President of the IAPR)
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80078 Pozzuoli, Napoli, ITALY
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