

Curriculum Vitae

Personal Details

Name:	John Alan Williams	Date of Birth:	30 th Sept. 1973
Address:	4 Morehead Lane Norman Park 4170 Brisbane, QLD, Australia	Telephone:	(+61 7) 3864 2427
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Citizenship:	Australian	Dependants:	None

Academic Curriculum Vitae

Nov. 2001 – present **Postdoctoral Research Fellow, CRC for Satellite Systems, QUT**
Developed real-time remote sensing architectures for on-board satellite data processing. Responsibilities include independent and team research, publication authorship, student supervision.

2000 – present **Casual Lecturer, School of EESE, Faculty of BEE, QUT**
Six-week “Introduction to C Programming” component in EEB612 “Software Systems Design”, 2001 and 2002. Guest lecturer in image processing and computer vision for EEB905 “Advanced Topics B”, 2000. Relief lecturing as required.

May – Nov. 2001 **Joint Acting Director, Research Concentration In Computer Vision and Automation, QUT**
Held during postdoctoral appointment (below) responsibilities included day to day technical leadership of six Ph.D. and Masters students, developing research and funding proposals, research administration.

Oct. 2000 – Nov. 2001 **Research Assistant / Postdoctoral Research Fellow – Research Concentration in Computer Vision and Automation, QUT**
Conducted applied research into vision systems, 3D data acquisition, registration and modelling. Performed a variety of research and research-related tasks including preparation of competitive funding applications and algorithm development, prototyping and implementation.

Oct. 1999 **Technical Consultancy to Ernst and Young**
Conducted a technology viability assessment within a pre-commercialisation study for an automated meat quality inspection system.

Jul. 1997 – Mar. 2001 **Ph.D. in Electronic Engineering, QUT** Thesis title: “A System for Multiple View Acquisition and Registration Incorporating Statistical Error Models”. Degree awarded 25th September, 2001. Awarded APA scholarship, QUT “Vice-Chancellor’s Initiative Scholarship”, and Centre-funded top-up.

1996 **Exabyte (Scotland) – European Helpdesk Administrator**
Initiated and managed European helpdesk operations for data storage manufacturer Exabyte. Developed helpdesk procedures and software management system.

1991 – 1995 **Bachelor of Electronic Engineering (1st Class Hons) / Bachelor of Information Technology (with Distinction), QUT**
Grade Point Average 6.44. Fields of study included digital signal and image processing, computer architectures and software engineering.

Research Supervision

- Ph.D. associate supervisor – Birgit Planitz (ongoing)
- Coursework masters project co-supervisor – Luke Krasnoff (ongoing)
- Final year project supervisor – Arvin Lamanna, Medical Image Registration (2001)
- Final year project supervisor – Suhail Mahadevan and Haris Pandzo, 3D Image Acquisition and Modelling (2000)

Research and Technical Projects

Postdoctoral Research, CRC for Satellite Systems, 2001-2002	Real-time remote sensing and on-board satellite data processing Investigated reconfigurable logic and custom computers for real-time remote sensing. Focus on automatic real-time detection of natural disasters, as well as remote sensing processing tasks such as cloud detection and data formatting. Developed real-time image processing systems in reconfigurable logic. Outcomes included design and implementation of a real-time remote sensing architecture and a variety of real-time remote sensing algorithms. Contributed to CRCSS research in real-time data processing and analysis.
PhD Research, 1997-2000	Multiple View 3D Acquisition, Registration and Modelling Investigated 3D surface registration and modeling from range sensor data, utilising statistical sensor error models to maximise registration accuracy and yield confidence estimates on registration parameters. Considered the general problem of multiple view simultaneous registration, rather than simple pairwise approaches. Implemented and refined several 3D surface matching algorithms. Led the development of a 3D vision sensor and calibration system.
Undergraduate project, 1995	Block-Based Fractal Image Compression Investigated the application of fractal systems to image compression.
Undergraduate project, 1994	2D Machine Vision System Investigated parametric methods for the recognition of 2D objects in video images.

Research Grants, Awards, Prizes etc.

2002	ARC APA(I) – Linkage Grant Chief Investigator with Prof. Kurt Kubik (UQ) and Dr Mohammed Bennamoun (QUT). Project with AAM Geoscan investigating automatic extraction of vector information from Airborne Laser Scanning data
2001	Commendation, Prof. Weilin Chang, former Dean of BEE, QUT Written commendation for my involvement in and contribution to the Undergraduate Excellence Award Evenings, part of the BEE postgraduate student recruitment program
1997-2000	Vice-Chancellor's Initiative Postgraduate Scholarship Awarded to outstanding APA scholarship applicants
1998-2000	QUT Competitive Grants-in-aid Travel Scheme Awarded support for conference travel in 1998, 1999 and 2000

Professional Memberships and Activities

- Regular involvement in Faculty of BEE postgraduate student recruitment activities
- Involved in Equity Department's Q-Step / NEXUS (Network of Exchange - Universities and Schools) program, promoting higher education to school students from disadvantaged backgrounds (1997-98)
- Member, IEEE and IEEE Computer Society (since 1997)
- Association for Computing Machinery (ACM)
- Australian Pattern Recognition Society (Secretary of Queensland branch 2000, 2001)
- Senior First Aid and Resuscitation, St John Ambulance

Publications

Journals (refereed)

1. **J.A. Williams**, A.S. Dawood and S.J. Visser. Architecture and Implementation in FPGAs for Real Time Remote Sensing, *in preparation*, IEICE Trans. Information and Systems, special issue on Reconfigurable Computing.
2. **J.A. Williams** and M.Bennamoun. Simultaneous registration of multiple corresponding point sets, *Computer Vision and Image Understanding*, 81(1), pp. 117-142, January 2001.
3. **J.A. Williams** and M. Bennamoun. A multiple view 3D registration algorithm with statistical error modeling, *IEICE Trans. Information and Systems*, E83-D(8), pp. 1662-1670, August 2000.

Conference Publications

1. **J. A. Williams**, A.S. Dawood and S.J. Visser. FPGA Based Cloud Detection for Real-Time Onboard Remote Sensing, *submitted for review*, 1st IEEE Int. Conf. On Field Programmable Technology, December 2002.
2. A.S. Dawood, **J.A. Williams** and S.J. Visser. FPGA Based Real-time Adaptive Filtering for Space Applications, *submitted for review*, 1st IEEE Int. Conf. On Field Programmable Technology, December 2002.
3. **J.A. Williams**, A.S. Dawood and S. J. Visser. On-Board Wildfire And Volcanic Plume Detection Deploying Reconfigurable Logic, *Proc. 11th Australian Remote Sensing and Photogrammetry Conference*, Brisbane, Australia, September 2002 (*to appear*).
4. **J.A. Williams**, A.S. Dawood and S.J. Visser. Real-Time Remote Sensing Deploying Reconfigurable Logic, *Proc. 11th Australasian Remote Sensing and Photogrammetry Conference*, Brisbane, Australia, September 2002 (*to appear*).
5. A.S. Dawood, S.J. Visser, **J.A. Williams**. Reconfigurable FPGAs for Real Time Image Processing in Space, *Proc. 11th Int. Conf. on Digital Signal Processing*, Thessaloniki, Greece, June 2002.
6. B.M. Planitz, **J.A Williams** and M. Bennamoun. Automatic Correspondence of Range Images. *Proc. 5th Asian Conf. On Computer Vision*, Melbourne, Australia, January 2002.
7. S. Mahadevan, H. Pandzo, M. Bennamoun and **J.A. Williams**. A 3D acquisition and modelling system. *Proc. 26th IEEE Int. Conf. On Acoustics, Speech and Signal Processing*, Salt Lake City, USA, June 2001.
8. **J.A. Williams** and M. Bennamoun. Multiple view surface registration with error modeling and analysis. *Proc. 7th IEEE Int. Conf. On Image Processing*, volume I, pp. 545-548, Vancouver, Canada, September 2000.
9. **J.A. Williams** and M. Bennamoun. Evaluation of a novel point set registration algorithm. In *Proc. IEEE Int. Conf. On Computer Vision and Pattern Recognition*, volume I, pp. 1007-1010, South Carolina, USA, September 2000.
10. **J.A. Williams** and M. Bennamoun. Simultaneous registration of multiple point sets using orthonormal matrices. In *Proc. IEEE Int. Conf. on Acoustics, Speech and Signal Processing*, volume IV, pp. 2199-2202, Istanbul, Turkey, June 2000.
11. **J.A. Williams** and M. Bennamoun. Multiple view 3D registration using statistical error models. *Proc. Vision, Modeling and Visualisation*, pp. 83-90, Erlangen, Germany, November 1999.

12. **J.A. Williams** and M. Bennamoun. Multiple view 3D surface registration: A review and a new technique. Proc. IEEE International Conference on Systems, Man and Cybernetics, volume III, pp. 497-502, Tokyo, Japan, October 1999.
13. **J.A. Williams** and M. Bennamoun. A non-linear filtering approach to high precision stereo image matching. Proc. 5th IEEE Int. Conf. On Image Processing, volume II, pp. 157-161, Chicago, USA, October 1998.

Other Research Publications

1. B.M. Planitz, **J.A. Williams** and M. Bennamoun. Automatic Correspondence for Three Dimensional Modelling. QUT Technical Report, ISBN 1-86435-558-1
2. **J.A. Williams** and M. Bennamoun. Method for the simultaneous rigid alignment of multiple point sets. Australian Patent Office Provisional Patent No. PQ3985, November 1999.