

PATENTS & PUBLICATIONS

Most significant publications are shown in bold. Updated August 2008.

Patents Granted or Pending

JP 2519289 (Japanese patent) Wrist mechanism for robotic manipulators. (1988) (With coinventors D. Elford, P. Kovesi, M. Ong. May 1996. Contribution 25%

AU 8431508 (Australian patent) Contact sensing device. (1985) (With M. J. Crooke, coinventor) International Patent Convention WO 8500445 designated states Australia, Japan, USA, EEC.AU 8820664 (Australian patent) Animal head restraint. (1989) (With A. Whitehead, coinventor). Corresponding patents in New Zealand (ZA 8805870), South Africa, United States of America (4887553), Europe) Contribution 50%

SE 8800567 (Swedish patent) Wrist mechanism for robotic manipulators. (1988) (With coinventors D. Elford, P. Kovesi, M. Ong. Corresponding patents in Australia (AU8812154), Europe, Japan, USA (US 4862759) New Zealand (ZA 8801211), Britain (GB 2201140), Germany (DE 3805528), France (FR 2611161), South Africa). Contribution 25%

AU 8776112 (Australian patent) Leg restraint. (1987) (with coinventors D. Elford, R. Leslie). Contribution 30%.

AU 8776111 (Australian patent) Nose restraint. (1987) (with coinventors D. Elford, R. Leslie). Contribution 30%.

AU 8433725 (Australian patent) Positioning, manipulating restraining of animals during shearing. (1985). (with coinventors D. Elford, R. Leslie). Corresponding patent in New Zealand (ZA 8407660). Contribution 30%.

No. 210154 N.Z. patent for resistance sensing. (November 1984. Coinventors R. Greenhalgh, R. A. Leslie) (Corresponding Australian (52100/86, 591645, PCT/AU85/00304) and overseas patents) Contribution 30%.

AU 8815016 (Australian patent) Sensor shielding device. (1988). Corresponding patents in Britain (GB 2204132), New Zealand (8802625).

AU 9068360 (Australian patent) Hybrid follower control. 1991.

Monographs

Trevelyan, J. P. (1999, 2000) Demining Research at the University of Western Australia. CD-ROM (approx 4000 pages of text including images). ISBN 1 74052 012 2. Contribution 95%

Trevelyan, J. P. Robots for Shearing Sheep: Shear Magic Oxford University Press, 1992, 400 pp, ISBN 0-19-856252-7.

Trevelyan, J. P. A Perspective flight display. Master of Engineering Science Thesis, Department of Mechanical Engineering, The University of Western Australia 1972.

Research Monographs

Trevelyan, J. P. Simplified Robot Calibration. A technical report detailing a technique for robot calibration supplied to several robotics research laboratories for evaluation and testing. 1995

Chapters and Edited Volumes

Trevelyan, J. P., Khang, S., Hamel, W. (2008) Robotics in Hazardous Applications. In Khatib, O., Siciliano, B, & Zelinsky, A. (eds) Handbook of Robotics Research, Springer, 2008.

Trevelyan, J. P. (2008). Coordination in Mechatronic Engineering Work. Mechatronics and Machine Vision in Practice. J. Billingsley and R. Bradbeer. Berlin, Springer: 51-64.

Corke, P. and Trevelyan, J. P. (1999) Experimental Robotics VI. Proceedings of the 6th International Symposium on Experimental Robotics, Sydney, March 26th-28th, Springer, London, ISBN 1-85233-210-7

Trevelyan, J. P. Servo and Control Devices, Encyclopaedia of Applied Physics, Trigg, G. L. (Editor) American Institute of Physics (1997), VCH Publishers, 35 pages.

Göth, A., McLean, I. G., Trevelyan, J. P. (2003) How do dogs detect landmines? A summary of research results. In Ian McLean (ed) *Mine Detection Dogs: Training, Operations and Odour Detection* Geneva International Centre for Humanitarian Demining, ISBN 2-88487-007-5, available at www.gichd.ch, pp 195-207. Contribution 10%.

Fully refereed papers

Trevelyan, J. P. (2007). "Technical Coordination in Engineering Practice." *J. Eng. Ed.*, 96(3), 191-204.

Trevelyan, J. and S. Tilli (2007). "Published Research on Engineering Work." *Journal of Professional Issues in Engineering Education and Practice* 133(4): 300-307.

Trevelyan, J. P. (2003) Remote laboratories and team skills in mechatronics. *Mechatronics and Machine Vision in Practice*, Edited by J. Billingsley, Research Studies Press, pp 45-58, 2003.

Bartley, C. and Trevelyan, J. P. (2002) Modeling Minefield Clearance Data: Statistical Analysis of Minefield Clearance Data, Demining Technology Information Forum Journal, Humanitarian Demining Research and Development Overview Papers, <http://maic.jmu.edu/dtif/OVERVIEW/index.html>. (23 pages) Contribution 40%

Trevelyan, J. P., Tilli, S., Parks, B., Teng Han Chiat (2002) Farming Minefields: Economics of Remediating Land with Moderate Landmine and UXO Concentrations. Demining Technology Information Forum Journal, Humanitarian Demining Research and Development Overview Papers, <http://maic.jmu.edu/dtif/OVERVIEW/index.html>. (25 pages) Contribution 40%.

Trevelyan, J. P. (2002) Practical issues in manual demining: implications for new detection technologies. Schubert, H. and Kuznetsov, A. (editors) *Detection of Explosives and Landmines: Methods and Field Experience*, NATO Science Series II Mathematics, Physics and Chemistry - Vol 66, ISBN 1-4020-0693-4, pp 155-164.

Trevelyan, J. P. (2002) Technology and the landmine problem: practical aspects of landmine clearance operations. Schubert, H. and Kuznetsov, A. (editors) *Detection of Explosives and Landmines: Methods and Field Experience*, NATO Science Series II Mathematics, Physics and Chemistry - Vol 66, ISBN 1-4020-0693-4, pp 165-184.

Taylor, K., Dalton, B., Trevelyan, J. P. (1999) Web-based telerobotics. *Robotica*, Vol 17, No. 1, pp 49-59.

Trevelyan, J. P. (1999) Redefining robotics for the new millenium. *International Journal of Robotics Research*, Vol 18, No 12, December, pp 1211-1223.

Trevelyan, J. P. (1998) Landmines: A Humanitarian Demining Approach. *Asia-Pacific Magazine*, Research School of Asian and Pacific Studies, Australian National University, Canberra, May 1998.

Trevelyan, J. P. (1997) Simplifying Robotics: A challenge for researchers. *Journal of Robotics and Autonomous Systems*, Vol 21, No. 3, Sept 1997, pp207-220.

Trevelyan, J. P. (1997) Robots and Landmines. *Industrial Robot*, Vol 24, No. 2, pp 114-125.

Trevelyan, J. P. (1996) Automating Sheep Shearing. *Service Robot*, Vol 2, No. 3, 1996, pp 27-30 (invited paper).

Legnani, G., Mina, C. and Trevelyan, J. P. (1996). Static calibration of industrial manipulator: Design of an optical instrumentation and application to SCARA robots. *Int. Journal of Robotic Systems*, Vol 13, No. 7, pp 445-460. (0.15 contribution)

Trevelyan, J.P. (1989) Replicating Manual Skills, Fifth International Symposium on Robotics Research, Tokyo, 1989.

Trevelyan, J.P. Sensing and Control for Sheep Shearing Robots, IEEE Transactions, Journal of Robotics and Automation, Special Issue on Sensing and Control, December 1989 pp 716-727.

Trevelyan, J.P., Nelson, M. (1987) Adaptive robot control incorporating automatic error recovery. 3rd International Conference on Advanced Robotics, Versailles. Oct. 1987. IFS (Conferences) Ltd. pp. 385-398.

Trevelyan, J.P, Elford, D.E, Ong, M, Kovesi, P.D. (1986) ET - A wrist mechanism without singular positions. International Journal of Robotics Research Volume 4, No 4, 1986, MIT Press, pp. 71-85.

Key, S.J., Trevelyan, J.P., Stone, B.J., (1986) Manufacturing applications from robotic sheep shearing research. CIRP Annals 35-1-86 Israel August 1986. p309-312.

Invited Papers

Trevelyan, J. P. (2008). Observations of Engineering Practice: Ideas for Engineering Educators. 2008 Dane and Mary Louise Miller Symposium, <http://www.nae.edu/>, National Academy of Engineering Center for the Advancement of Scholarship on Engineering Education.

Trevelyan, J. P. (2004) 'Engineering Skills in Mine Action' EUDEM2 Final Workshop: Is Humanitarian Demining Technology a Broken Promise? Prof. Jan Cornelius (ed), Vrije Universiteit, Brussels, October 2004, 8 pp. (expenses paid, but unable to attend – paper presented by proxy).

Trevelyan, J. (2004) 'Landmine Research: Technology Solutions Looking for Problems', invited keynote address SPIE SPIE Symposium on Defense & Security: 5415-Detection and Remediation Technologies for Mines and Minelike Targets IX, Orlando, Florida, April 2004, 13 pp.

Trevelyan, J. P. (2003) Why Aren't Mechatronics Engineers Wealthy? Keynote presentation to Mechatronics and Machine Vision in Practice Conference, Perth 2003. (expenses paid)

Trevelyan, J. P. and Tili, S. (2003) Observations from a Study of Professional Engineering in Australia and Pakistan, National Bureau of Economic Research Conference: Internationalization of Science and Engineering: Issues of Work, Education and Security, Columbia University, New York, May 2003. (expenses paid) Contribution 75%.

Trevelyan, J. (2001) Performance analysis of manual demining in Afghanistan, NATO Workshop on Explosive Detection Methods, St Petersburg, September 2001. (expenses paid)

Trevelyan, J. P. (2000) Mine Action: Improving the Process. Standing Committee of Experts in Mine Action Technologies, 2nd Meeting, May 2000, Geneva International Centre for Humanitarian Demining. (expenses paid)

Trevelyan, J. P. (2000) Reducing accidents in demining. Standing Committee of Experts in Mine Action Technologies, 2nd Meeting, May 2000, Geneva International Centre for Humanitarian Demining. (expenses paid)

Trevelyan, J. P. (1995) Simplifying Robotics. Workshop on Some Critical Issues in Robotics, US Army Far East & National University of Singapore Applied Research Corporation, Singapore, October 1995, pp 118-135 (expenses paid).

Trevelyan, J. P. (1993) Prospects for robots: will we see robot shearers in the 90's? IFR Regional Conference: Robots for Competitive Industries, Brisbane Australia, 1993, pp 163-178. (Expenses paid)

Trevelyan, J. P. (1992) Force controlled surface following without stability problems. IEEE TENCON Conference, Melbourne, November 1992, pp 247-251.

Trevelyan, J. P. (1992) Approximations may lead to errors in brain science. Invited commentary, Behavioural and Brain Sciences, Vol 15, No. 2, June 1992, pp 350-351.

Trevelyan, J. P. (1990) Team skills for mechatronics. I.Mech.E./S.E.R.C. Research Conference on Mechatronics, St Albans, UK, September 1990. (Expenses paid)

- Trevelyan, J.P. (1988) Robotic shearing, Australian Bicentenary Wool Conference, Sydney, July 1988. (Expenses paid)
- Trevelyan, J.P. (1989) Automated Sheep Shearing Station, Proceedings part 1. of 2nd International World Sheep and Wool Congress, Tasmania, Mar. 1989 (Expenses paid)
- Trevelyan J.P. (1988) Future prospects for robot shearers (keynote address), International Symposium and Exposition on Robots, Sydney, Nov., 1988 pp.65-85. (Expenses paid)
- Trevelyan, J. P. (1988) Mechanisms for robotic sheep shearing. Keynote address (unpublished) to the ASME Mechanisms and Design Conference, Orlando, Florida September 1988. (Expenses paid)
- Trevelyan, J.P. (1986) Australian robotics research - an overview. The World Yearbook of Robotics Research and Development, eds, P. Scott and K. Lyall (Technology Division Department of Industry, Technology and Commerce), Kogan Page, London, 1986, pp. 107-110.
- Trevelyan, J.P. (1987) Robots in the shearing shed. 'Advanced Robotics' Vol. 2. 1987. pp. 3-8.
- Trevelyan, J.P., Nelson, M., Kovesi, P.(1986) Adaptive motion sequencing for process robots. 4th International Symposium on Robotics Research, Santa Cruz, USA. MIT Press. (Invited Paper). pp 445-453. Contribution 60%.
- Key, S.J., Trevelyan, J.P. Robots in food processing and agriculture. Encyclopedia of Robotics, John Wiley and Sons, 1985, pp 556-560. Contribution 50%.
- Trevelyan, J.P., Ong, M. and Kovesi, P.D. Motion control for a sheep shearing robot. Proceedings of First International Symposium on Robotics Research, MIT, 1983, MIT Press, 1984, p. 175. (Expenses paid) Contribution 50%.
- Trevelyan, J.P. Automated sheep shearing. Proceedings of 7th Invitation Symposium: Outlook for Australia's Natural Fibres, Australian Academy of Technological Sciences, Canberra, 1983, p. 99. (Expenses paid)
- Trevelyan, J.P. Skills for a shearing robot: dexterity and sensing. Proceedings of Second International Symposium on Robotics Research, Kyoto, Japan, 1984. MIT Press, 1985, p. 273. (Expenses paid)
- Trevelyan, J.P. and Leslie, R.A. A control system for automated shearing. Proceedings of 1st Wool Harvesting Research and Development Conference, Melbourne, 1979. Australian Wool Corporation. P. Hudson (Ed.) (Expenses paid) Contribution 50%.
- Leslie, R.A. and Trevelyan J.P. Mechanical development of an automated shearing rig. Proceedings of 1st Wool Harvesting Research and Development Conference, Melbourne. 1979. Australian Wool Corporation. P. Hudson (Ed.) (Expenses paid) Contribution 50%.
- Trevelyan, J.P. Automated shearing experiments. Proceedings of 2nd Wool Harvesting Research and Development Conference, Sydney, 1981, p. 151. (Expenses paid)
- Trevelyan, J.P. and Key S.J. Automated sheep shearing. Robots in Manufacturing Industry - Seminar and Workshop, Technology Transfer Council, Adelaide, South Australia, 1981. Contribution 50%.
- Trevelyan, J.P. Software for automated sheep shearing. Proceedings of 51st ANZAAS Congress, Brisbane, Queensland, 1981.
- Trevelyan, J.P. Automated sheep shearing. Robots in Industry Symposium, Caulfield Institute of Technology, Victoria, 1981. (Expenses paid)

Fully Refereed Conference Papers

Domal, V. K. and J. P. Trevelyan (2008). Comparing Engineering Practice in South Asia with Australia. American Association for Engineering Education (ASEE) Annual Conference, Pittsburgh.

Nair, S. and J. P. Trevelyan (2008). Current maintenance management methods cannot solve engineering asset maintenance history data quality problems. ICOMS Asset Management Conference, Fremantle, Western Australia, Maintenance Engineering Society of Australia (Engineers Australia), Asset Management Council.

Tilli, S. and J. P. Trevelyan (2008). Longitudinal Study of Australian Engineering Graduates: Preliminary Results. American Association for Engineering Education (ASEE) Annual Conference, Pittsburgh.

Trevelyan, J. P. (2008). A Framework for Understanding Engineering Practice. American Association for Engineering Education (ASEE) Annual Conference, Pittsburgh.

Petermann, M., J. P. Trevelyan, et al. (2007). Cross-Cultural Collaboration in Design Engineering -- Influence Factors and their Impact on Work Performance. International Conference on Engineering Design ICED'07, Paris.

Razali, Z. B. and J. P. Trevelyan (2007). Experience in laboratory and the ability to diagnose equipment faults. 2nd Regional Conference on Engineering Education, Johor, Malaysia, Universiti Teknologi Malaysia Faculty of Mechanical Engineering.

Stephan, A. and J. P. Trevelyan (2007). Accounting for maintenance: is there a gap? ICOMS 2007, Melbourne, Maintenance Engineering Society of Australia.

Trevelyan, J. P., Gouws, L., and Stephan, A. (2006) Engineering maintenance work: a blank space on the map. World Conference on Engineering Asset Management, Surfers Paradise, Queensland, paper 075.

Gouws, L., and Trevelyan, J. P. (2006). Research on influences on maintenance management effectiveness. 2006 World Conference on Engineering Asset Management, Surfer's Paradise, Queensland, Paper 011.

Trevelyan, J. (2004) 'Using Remote On-Line Laboratories in Mechatronics Systems Teaching', 3rd IFAC Symposium on Mechatronic Systems, Sydney, September 2004. 7 pp.

Trevelyan, J. P. (2004) 'Lessons learned from 10 years experience with remote laboratories', International Conference on Engineering Education Research, Olomouc, Czech Republic, June 2004, 11 pp.

Trevelyan, J. P. (2003), Statistical Analysis and Experiments in Manual Demining, EUDEM-SCOT Conference on Demining Technologies, Brussels, September 15th-18th.

Trevelyan, J. P. (2003), Farming Minefields: Remediating land with moderate landmine and UXO contamination, EUDEM-SCOT Conference on Demining Technologies, Brussels, September 15th-18th.

Trevelyan, J. (2002) Towards Cost-Effective On-Line Laboratories, Networked Learning 2002 Conference, Berlin. (8 pages)

Dalton, B. and Trevelyan, J. (1999) Experiments with Web-Based Telerobots. Proceedings of International Symposium on Experimental Robotics, Corke, P. (Ed), Sydney, pp 317-323. Contribution 30%

Trevelyan, J. P. (1998) Target depth estimation in the frequency domain. 2nd International IEE Conference on Detecting Abandoned Landmines, Edinburgh, pp 218-221.

Trevelyan, J. P. (1998) Technology transfer for humanitarian demining. 2nd International IEE Conference on Detecting Abandoned Landmines, Edinburgh, pp 23-27.

Trevelyan, J. P. (1997) Better tools for deminers. International Workshop on Sustainable Humanitarian Demining, Zagreb, September 1997, pp s6.1-s6.12.

Trevelyan, J. P. (1997) What can robotics researchers learn from the landmine problem? Field and Service Robotics Conference, Canberra, pp516-522.

Trevelyan, J. P. (1997) Robots: a premature solution for the landmine problem. Proceedings of Eighth International Symposium on Robotics Research, Japan, pp 382-390.

Vu, T. L., Pan, J. and Trevelyan, J. P. (1996). An investigation of nonlinear vibration in a single link flexible manipulator. Proceedings of 21st International Symposium on Modal Analysis, Leuven, September 18-20th 1996, pp 469-480. Contribution 5%.

Trevelyan, J. P. Robot Calibration with a Kalman Filter. International Conference on Advanced Robotics and Computer Vision (ICARCV96), Singapore 1996.

Trevelyan, J. P. Opportunities for Robotic Landmine Clearance. International Conference on Advanced Robotics and Computer Vision (ICARCV96), Singapore 1996.

Trevelyan, J. P. and Murphy, P. Fast Vision Measurements using Shaped Snakes. International Conference on Advanced Robotics and Computer Vision (ICARCV96), Singapore 1996. Contribution 50%

Trevelyan, J. P. A Suspended Device for Humanitarian Demining. MD96: IEE Conference on Detecting Abandoned Landmines, Edinburgh, 1996.

Legnani, G. & Trevelyan, J. P. Static calibration of industrial manipulators: a comparison between two methodologies. Proceedings of 27th International Symposium on Industrial Robots: Robots Towards 2000, Milan, Italy, October 1996, pp 111-116. Contribution 50%

Trevelyan, J. P. A renewed first year course for engineering students. Proceedings of Australian Association for Engineering Education Conference "Inspiring Integration", University of Technology, Sydney, 1994, pp 583-588.

Taylor, K. and Trevelyan, J. P. (1995) Australia's telerobot on the World Wide Web. 26th International Symposium on Industrial Robots, Singapore, pp 39-44 (Winner of Japan Robot Association Prize for best paper in management presented at 25th and 26th International Symposia on Industrial Robots in 1995) Contribution 50%

Taylor, K. and Trevelyan, J. P. (1995) A Telerobot on the World Wide Web. Proceedings of Robots for Australian Industries Conference, Australian Robot Association, Melbourne, pp 108-120. Contribution 50%

Trevelyan, J. P. (1994) Force control without stability problems. Proceedings of 3rd International Symposium on Experimental Robotics, Kyoto, October 1994, eds. Yoshikawa, T., and Miyazaki, F., Lecture Notes in Control and Information Sciences 200, Springer Verlag, pp132-142.

Trevelyan, J. P. (1992) Measuring sheep with shaped snakes. 2nd International Conference on Advanced Robotics and Computer Vision, Singapore, September 1992, paper CV-15.4.

Trevelyan, J. P. and Sultan, I. K. (1992) Inverse kinematics of bent robots. 2nd International Conference on Advanced Robotics and Computer Vision, Singapore, September 1992, paper RO-1.4. Contribution 15%.

Trevelyan, J. P. Feature recognition using fields. (1991) 3rd International Advanced Robotics Programme Workshop on Robotics in Agriculture and Food Processing, Genoa, June 1991.

Trevelyan, J.P. , Elford, D. (1988) Sheep handling and manipulation for automated shearing, 19th International Symposium and Exposition on Robots, Sydney, Nov. 1988 pp.397-416. (Winner of Innaugural Japan Industrial Robot Association Prize for best paper in application technology presented at 18th and 19th International Symposia on Industrial Robots in 1988). Contribution 50%

Trevelyan, J.P., Key, S.J. and Owens, R.A. (1982) Techniques for surface representation and adaptation in automated sheep shearing. Proceedings of 12th International Symposium on Industrial Robots, Paris, 1982, p. 163. Contribution 50%.

Trevelyan, J. P. (1977) A Minicomputer based microprocessor development system. Institution of Engineers Symposium on microprocessor systems, Melbourne 1977.

Trevelyan, J. P. (1975) Simulation of a marine telemetry buoy. Institution of Engineers Australia Conference on Computers in Engineering, Perth, 1975.

Other Papers Published in non-Refereed Media

- Trevelyan, J. P. (2008). The intertwined threads of work. Engineers Australia. **80**: 38-39.
- Trevelyan, J. P. (2008). Lets be seen and heard: engineers must shed their invisibility cloaks. Australian. Sydney: 26.
- Trevelyan, J. P. (2008). Smart Power Options. Dawn. Karachi.
- Trevelyan, J. P. (2008). Teaching the human side of engineering. Engineers Australia. **80**: 51.
- Hodkiewicz, M. R. and J. P. Trevelyan (2007). You can't manage what you can't measure. Touch Briefings: Oil and Gas Processing Review. **2007**.
- Trevelyan, J. P. (2007). Mathematics and Engineering Practice. Perth, Australia, The University of Western Australia: 5 p.
- Trevelyan, J. P. (2003) Norme kakvoće za razminiranje. Glasilo DZNM, Sadržaj 3-6, 2003, pp 65-69. (Translation of article 'Quality Standards for Demining' published in 2002), published in Croatian Standards Bulletin.
- Trevelyan, J. P. (2001) Magnetic Fragment Collection. Journal of Mine Action, Vol 3, No. 2, Mine Action Information Center, James Madison University. <http://maic.jmu.edu/journal/index/past.htm>.
- Trevelyan, J. P. (2002) Quality Standards for Demining. Journal of Mine Action, Vol 4, No. 2, Mine Action Information Center, James Madison University. <http://maic.jmu.edu/journal/index/past.htm>.
- Trevelyan, J. P. (1999) Protecting Deminers. Austcare Workshop on Humanitarian Demining, Sydney.
- Trevelyan, J. P. (1995) Simplifying Robot Calibration. Proceedings of Robots for Australian Industries Conference, Australian Robot Association, Melbourne, pp 331-340
- Trevelyan, J. P. Recent advances in robotics and control. Electricity Supply Authorities Summer School, January 1994, University of Western Australia.
- Trevelyan, J. P. (1993) Robotic Shearing: recent research results. International Advanced Robotics Programme Workshop on Robotics in Agriculture and the Food Industry, Brisbane Australia, 1993, pp 69-79.
- Trevelyan, J. P., Legnani, G., Li, Z. D., and Sultan, I. K. On robot calibration. (1992) Australian Workshop on Theory of Machines and Mechanisms, University of Melbourne Department of Mechanical Engineering, Ed. A. Samuel November 1992, pp 155-174 Contribution 25%.
- Trevelyan, J. P. Fifth International Symposium on Robotics Research - Conference Report - Australian Robot Association Newsletter, August 1990 pp 15-17.
- Key, S.J. and Trevelyan, J.P. Automated sheep shearing robot. National Conference and Exhibition on Robotics, IEAUST, Melbourne, 1984 pp 41-45. Contribution 50%.