




# CV

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## Details

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**Name:** William Buchanan, BSc (Hons.), PhD, FBCS, FIEE (FIET) CEng, MCP  
**Date of Birth:** 6th March, 1961.  
**WWW page:** <http://www.soc.napier.ac.uk/~bill> ()  
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**Current Post:** Professor, School of Computing  
Leader, Centre for Distributed Computing and Security  
Leader, Centre of Excellence in Cybercrime (Scotland/NI)  
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## Outline

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Bill Buchanan is a Professor in the School of Computing at Edinburgh Napier University, and a Fellow of the BCS and the IET. He currently leads the Centre for Distributed Computing, Networks, and Security, and works in the areas of security, next generation user interfaces, Web-based infrastructures, e-Crime, intrusion detection systems, digital forensics, e-Health, mobile computing, agent-based systems, and simulation. Bill has one of the most extensive academic sites in the World, and is involved in many areas of novel research and teaching in computing. He has published over 27 academic books, and over 120 academic research papers, along with awards for excellence in knowledge transfer, and for teaching, such as winning at the I ♥ my Tutor Awards (Student voted), Edinburgh Napier University, 2011, and has supervised many award winning student projects.

Presently he is working with a range of industrial/domain partners, including with the Scottish Police, health care professionals and the FSA. As part of the drive to create a World-leading infrastructure for security and cybercrime, he leads the Scottish Centre of Excellence for Security and Cybercrime which bring together a wide range of collaborators, including most of the universities in Scotland, the Scottish Police, the public sector, and a range of SMEs and large organisations.

He has a long track record in commercialisation activities, including being a co-founder of Inquisitive System, which has progressed from PhD work to a university spin-out. This spin-out has also involved patenting novel security software in three countries around the World. His current work includes a collaboration with Microsoft plc on a £2million project which aims to improve the care of the elderly using Trusted Cloud-based services, and with Chelsea and Westminster Hospital on a next generation Health Care platform. This also matches up with other funded projects with the FSA and the Scottish Police

## Employment

2005-Present	Professor, School of Computing, Napier University, Edinburgh.
2003-2005	Reader, School of Computing, Napier University, Edinburgh.
1989-2003	Senior Lecturer, School of Computing, Napier University, Edinburgh.
1996-Present	Series Editor (IT and Computing), Macmillan Press Ltd.
1989-Present	Consultant to several companies including British Gas plc, HMSO, and so on.
1991-1995	Director, Real-Time Technologies Ltd, Edinburgh.
1989-1990	Software Consultant, ABACUS Simulations Ltd, Glasgow.
1986-1989	Lecturer, Department of Electronics, Napier University, Edinburgh.
1986	Electronic Engineer, Racal-MESL, Edinburgh.
1985	Industrial Training, Royal Observatory, Edinburgh.
1984	Industrial Training, Racal-MESL Ltd, Edinburgh.
1983	Industrial Training, Royal Observatory, Edinburgh.
1977-1981	Apprentice Electrician, ICI Ltd, Grangemouth.

## Qualifications (Outline)

2010	Fellow of the BCS
2009	Cisco Regional Instructor, CCNA Security
2007	Cisco Regional Instructor, Network Security
2006	Fellow of IET (previously IEE)
2006	Microsoft XML Web Services (70-320) Certification
2006	Cisco 642-55 Certification, Securing Networks with PIX and ASA
2005	Cisco Regional Instructor, Wireless LANs
2005	Microsoft Certified Professional (MCP)
2000	(and 2005) Cisco Certified Instructor - Semester 1 -4
1996	PhD. Electromagnetic Field Modelling
1993	CEng, MIEE
1986	BSc (Hons) in Communications and Electronic Engineering

## Recent Activities

- University spin-out for Digital DNA (Inquisitive Systems), 2010.
- Scottish Centre of Excellence in Security and Cybercrime (Approved In-principle), £647,000.
- EPSRC/TSB Award, Scaleable and Open Framework for Human/Digital Trust between Informal/Formal Personal Health Care Infrastructures, Human and Digital Trust, Jan 2010. (overall grant £2million, Napier funding: £300,000).
- EPSRC/TSB Award, Information Infrastructure Protection: Managing complexity, risk and resilience, Nov 2009. (£1.5million, Napier funding: £280,000).
- Strategy Investment Fund, £85,000. Centre of Excellence in CyberCrime (2010).

- US Patent: 61/116681 (with Jamie Graves), Oct 2009. DNA Digital Fingerprinting Framework.
- UK Patent: 0816556.5 (with Jamie Graves), Sept 2008. DNA Digital Fingerprinting Framework.
- Lead, BCS Centre of Excellence in Cybercrime (2010), Scotland and NI (proposed UK-lead).
- Digital DNA, Proof-of-Concept, Scottish Enterprise, Sept 2008, £210,000.
- Principal's Award, e-Health, £12,500, 2008.
- Principal's Award, Security Network of Excellence, £10,000, 2008.
- SIPR (Scottish Institute for Policing Research) funded PhD studentship, 2008, £30,000. Information-sharing Architecture for Information Sharing between the Police and their Community Partners.
- SIPR (Scottish Institute for Policing Research) Knowledge Transfer Co-originator for the Evidence and Investigation Network. [<http://www.sipr.ac.uk/networks/network2.php>]
- FSA (Financial Services Authority)-funded PhD studentship, 2008, £30,000. Next-generation Anonymisation for Cybercrime Investigations.
- KTP Award Winner, Canan Ltd. [[http://www.dcs.napier.ac.uk/~bill/tcs\\_aw02.html](http://www.dcs.napier.ac.uk/~bill/tcs_aw02.html)]
- KTP Award Winner, Seven Layer Communications. [[http://www.dcs.napier.ac.uk/~bill/tcs\\_award.html](http://www.dcs.napier.ac.uk/~bill/tcs_award.html)]
- Supervisor of Prize Winner in the Young Software Engineering for the three years running. [[http://www.dcs.napier.ac.uk/~bill/pr\\_main\\_complete.htm](http://www.dcs.napier.ac.uk/~bill/pr_main_complete.htm)]
- KTP (Knowledge Transfer Partnership), Summerhall, 2007. £60,000.
- KTP with Fibrehub Europe Ltd. June 2003. Development of Voice/Video over IP systems, especially related to delivery to mobile devices. £60,000.
- KTP with Seven Layer Communications Limited, South Queensferry. KTP Programme No. 2966. Development of high-speed configurable networking test equipment. Winning Programme, KTP Programme Awards 2003. £60,000 Winning Programme, KTP Programme Awards 2003.
- KTP with Justfone. Java development for mobile computing using GSM. £120,000.
- KTP with Canan. June 2001. Development of a multimedia system for minority languages, such as Scots and Irish Gaelic. Awarded Certificate of Excellence (Grade 1), Jan 2004. Winning Programme, KTP Programme Awards 2004. £60,000. Gaelic learning WWW site.
- 3-year, EPSRC-funded CASE award in Intelligent Control of Large-Scale Systems. This involves PI Ltd, and involves intelligently controlling industrial equipment that can not be controlled by conventional methods. £60,000.
- Teaching Company Scheme with Viasystems, North Tyneside, £120,000.
- Editor/editorial board of wide range of Journals, and organiser for a range of Conferences.
- Nomination, I ♥ my Tutor Awards (Student voted), Edinburgh Napier University, 2010.
- Winner, I ♥ my Tutor Awards (Student voted), Edinburgh Napier University, 2011 (Nominated in two classes: Innovation and I ♥ my Tutor)

## Book/CD-ROM publications

1. Buchanan WJ, "C for Electronic Engineering with Applied Software Engineering", Prentice-Hall International, April 1995, ISBN 0-13-342668-8.
2. Buchanan WJ, "Applied PC Interfacing, Interrupts and Graphics", Addison-Wesley, June 1996, ISBN 0-201-87728-7.
3. Buchanan WJ, "Data Communications and Computer Networks", Chapman & Hall, ISBN 0-412-75430-4.
4. Buchanan WJ, "Microelectronic Systems: Design, Modelling and Test", Arnold, Jan. 1997, ISBN 0-340-67771-6.
5. Buchanan WJ, "Mastering Global Information Systems", Macmillan, Sept. 1997, ISBN 0-333-68951-8. (and Chinese edition). Translated into several languages, including Chinese (2002).
6. Buchanan WJ, "Mastering the Internet", Macmillan, Sept. 1997, ISBN 0-333-6926-6. (and Polish edition).
7. Buchanan WJ, "Advanced Data Communications and Networks", Chapman & Hall, Sept. 1997, ISBN 0-412-80630-4.
8. Buchanan WJ, "Software Development for Engineers (C++/ Pascal/ Assembly/ Visual Basic/ HTML/ JavaScript and Java)", Arnold, October 1997, ISBN 0-340-70014-9.
9. Buchanan WJ, "Advanced PC Interfacing, Communications and Windows Programming", Addison-Wesley, Apr. 1998, Nov. 1998. ISBN 0-201-87728-7. Translated into several languages, including Chinese and Japanese editions 2002.
10. Buchanan WJ, "Handbook of Data Communications and Networks", Kluwer, Jan. 1998, ISBN 0-412-84060-0.
11. Buchanan WJ, "Mastering Pascal and Delphi", Macmillan, Apr. 1998. ISBN 0-333-73007-0. Top 100 Bestseller on Amazon.co.uk (January 2000). No.1 Pascal book in the UK / No.3. for Delphi.
12. Buchanan WJ, "Mastering Java", Macmillan, Apr. 1998, ISBN 0-333-73008-9.
13. Buchanan WJ, "Software Development", John Wiley & Sons. December 1997. ISBN 0-471-85266-2.
14. Buchanan WJ, "CD-ROM Handbook of Data Communications & Networks", Kluwer, May 1998. ISBN- 0-412-84060. 2nd edition due out soon.
15. Buchanan WJ, "Mastering Windows NT, Novell NetWare and UNIX", Macmillan, Apr. 1999. ISBN 0-412-84060.
16. Buchanan WJ, "Mastering Networks", Macmillan, Apr. 1999. ISBN 0-333-748042. Top 100 Bestseller on Amazon.co.uk (Autumn 1999).

17. Buchanan WJ, "Computer Busses", November 1999, Arnold, ISBN 0-340-74076.
18. Buchanan WJ and Wilson A, "Advanced PC Architecture", Addison-Wesley Longman, Spring 2000, ISBN 0-201-39858-3. Translated into Chinese edition - Chinese Electric Power Press of Beijing (2003)
19. Buchanan WJ, "Wiedziec wieceg Internrt", Oct 1999. (Polish edition). ISBN 83-206-1283-7.
20. Buchanan WJ, "Mastering Computing", ISBN 0333748069, Palgrave. Polish edition.
21. Buchanan WJ, "Mastering Delphi", Jan 2003, Macmillan.
22. Buchanan WJ, "Distributed Systems and Networks", McGraw-Hill, June 2000, ISBN 0-077-09583-9. Translated in Indian by Tata McGraw-Hill (2004).
23. Buchanan WJ, "Handbook of Security and Digital Forensics", ISBN: 9780387286020, release date: 2010.
24. Buchanan WJ, "Introduction to Network Forensics", AUERBACH, ISBN: 084933568X, Sept 2010.
25. And other publications, including Chinese and Russian translations.

## Papers publishing in Journals/Conferences

1. Buchanan, W. (2011, Sept). Creation of Dynamic Environments for Virtualised and Cloud-based Teaching in Digital Forensics and Computer Security. Paper presented at CFET, Canterbury. Keynote speech.
2. Macfarlane, R., Buchanan, W., Ekonomou, E., Uthmani, O., Fan, L., Lo, O. (2011). Review of Security Policy Implementations. Computers & Security. Accepted.
3. Buchanan, W., Flandrin, F., Macfarlane, R., Graves, J. (2011). A Methodology to Evaluate Rate-Based Intrusion Prevention System against Distributed Denial-of-Service (DDoS). In: (Ed.) Cyberforensics 2011.
4. Buchanan, W., Kwecka, Z. (2011). A Novel Privacy Preserving Method for the Location Tracking of Mobile Devices. The Journal of Mobile Communication, Computation and Information: Special Issue on Security.
5. Buchanan, W. (2011, May). A next generation Cloud-based health care platform. Paper presented at Innovation in Healthcare, London. Keynote.
6. Buchanan, W. (2011). Advanced Cloud and Virtualisation, CRC Press.
7. Miehling, M., Buchanan, W., Lawson, A. (2011). Affiliate Advertising Fraud and an Investigatory Fraud Framework. In: (Ed.) CyberForensics 2011, Glasgow.
8. Buchanan, W., Macfarlane, R., Flandrin, F., Graves, J., Fan, L., Ekonomou, E., Bose, N., Ludwiniak, R. (2011). Cloud-based Digital Forensics Evaluation Test (D-FET) Platform. Cyberforensics 2011.

9. Uthmani, O., Buchanan, W., Lawson, A., Scott, R., SCHAFER, B., Fan, L. (2011). Crime Risk Evaluation within Information Sharing between the Police and Community Partners. *Information & Communications Technology Law*, 20(2).
10. Buchanan, W., Macfarlane, R. (2011, June). D-FET – A Community Cloud for Enhancing Skills using Virtualised Environments and Cloud-based Infrastructures. Paper presented at Scottish Higher Education Employability Conference: Strengthening Partnerships with Employers, Heriot-Watt, Edinburgh.
11. Buchanan, W., Kwecka, Z. (2011). A Novel Privacy Preserving Method for the Location Tracking of Mobile Devices. Submitted to: *The Journal of Mobile Communication, Computation and Information: Special Issue on Security*.
12. Fan, L., Buchanan, W., Thuemmler, C., Lo, O., Khedim, A., Uthmani, O., Lawson, A., Bell, D. (2011). DACAR Platform for eHealth Services Cloud. *IEEE Cloud 2011*.
13. Buchanan, W. (2011). Student Perception of On-line Lectures with a Blended Learning Environment. Paper presented at Edinburgh Napier University Staff Conference, Craiglockhart.
14. Buchanan, W., Graves, J., Bose, N., Macfarlane, R., Davison, B., Ludwiniak, R. (2011). Performance and Student Perception Evaluation of Cloud-based Virtualised Security and Digital Forensics Labs. *HEA ICS Conference*.
15. Bani Khalaf, M., Al-Dubai, A., Buchanan, W. (2010). A New Adaptive Broadcasting Approach for Mobile Ad hoc Networks. In: (Ed.) *Proceedings of 2010 6th Conference on Wireless Advanced (WiAD)*. (pp. 1-6). London: IEEE Computer Society.
16. Buchanan, W., Thuemmler, C., Fan, L., Lo, O., Khedim, A. (2010, August). Information sharing framework: Next Generation e-Health Cloud. Paper presented at BCS Health Informatics Scotland, Glasgow.
17. Buchanan, W. (2010). AES Encryption and Decryption in Microsoft .NET. *CDCS*.
18. Buchanan, W. (2010). 3DES Encryption and Decryption in Microsoft .NET. *CDCS*.
19. Migas, N., Buchanan, (2010). Ad-hoc Routing Metrics and Applied Weighting for QoS support. *International Journal of Parallel, Emergent, and Distributed Systems*, 25, (4).
20. Smith, M., Buchanan, W., Bell, D., Hazelhoff Roelfzema, N. (2010). Analysis of Information Governance and Patient Data Protection within Primary Health Care. *International Journal for Quality in Health Care*.
21. Buchanan, W., Thuemmler, C., Fan, L., Lo, O., Khedim, A. (2010, September). An e-Health Cloud. Paper presented at *Cloud Computing for the Public Sector*, Edinburgh.
22. Miehlung, M., Buchanan, W., Old, L., Batey, A., Rahman, A. (2010). Analysis of Malicious Affiliate Network Activity as a Test Case for an Investigatory Framework. In: (Ed.) *9th European Conference on Information Warfare and Security*. (pp. ). Greece:.
23. Buchanan, W. (2010). RC2 Encryption and Decryption in Microsoft .NET. *CDCS*.

24. Buchanan, W., Fan, L., Lawson, A., SCHAFER, B., Uthmani, O. (2010). Interagency data exchange protocols as computational data protection law. In: (Ed.) 23rd International Conference on Legal Knowledge and Information Systems. (pp. ). University of Liverpool, 16th-17th December 2010.
25. Buchanan, W. (2010). Introduction to Network Forensics ( ed.). : Auerbach Publications.
26. Kwecka, Z., Buchanan, W., Spiers, D. (2010). Minimising Collateral Damage: Privacy-Preserving Investigative Data Acquisition Platform. International Journal of Information Technologies and Systems Approach (IJITSA) : Special issue on Privacy and Security Issues in IT, 4(2).
27. Mason, A., Dingle, N., Knottenbelt, W., Bell, D., Buchanan, W., Thuemmler, C. (2010). Modelling infection spread using location tracking. Int. J. Healthcare Technology and Management, 11, (6), 442-461.
28. Buchanan, W., Uthmani, O. (2010, February). Novel Information Sharing Architecture between the Police and their Community Partners. Paper presented at Scottish Networking Event 2010, Napier University, Edinburgh.
29. Uthmani, O., Buchanan, W., Lawson, A., Fan, L. (2010). Novel Information Sharing Syntax for Data Sharing Between Police and Community Partners, Using Role-Based Security. Proceedings of the 9th European Conference on Information Warfare and Security, 394-402.
30. Buchanan, W., Bose, N. (2010). Patent: IMPROVEMENTS IN OR RELATING TO DIGITAL FORENSICS ( ed.). .:
31. Kwecka, Z., Buchanan, W., Spiers, D. (2010). Privacy-preserving data acquisition protocol. In: (Ed.) IEEE International Conference of Computational Methods in Electrical and Electronics Engineering. (pp. 131 - 136). Listvyanka: IEEE.
32. Buchanan, W., Macfarlane, R., Ludwiniak, R. (2010). Student Perception of On-Line Lectures with a Blended Learning Environment. Paper presented at The 4th International Conference on Cybercrime Forensics Education & Training, Canterbury.
33. Buchanan, W., Lo, O. (2010). Towards a framework for the generation of enhanced attack/background network traffic for evaluation of network-based intrusion detection systems. In: (Ed.) 9th European Conference on Information Warfare and Security. (pp. ). Greece:.
34. Kwecka, Z., Buchanan, W., Spiers, D. (2009). Application and Analysis of Private Matching Schemes Based on Commutative Cryptosystems. In: (Ed.) 8th European Conference on Information Warfare and Security. (pp. ). Lisbon.
35. Buchanan, W., (Eds.), (2009). International Journal of Healthcare Technology and Management: Special Issue on Patient-Centric Modelling and Enhanced Security in Distributed Healthcare Systems, 10 (1/2), ( ed.). : Inderscience.

36. Garrigues, C., Migas, N., Buchanan, W., Robles, S. (2009). Protecting mobile agents from external replay attacks. *Journal of Systems and Software* 82, (2), 197-206.
37. Thuemmler, C., Buchanan, W., Fekri, H., Lawson, A. (2009). Radio frequency identification (RFID) in pervasive healthcare. *International Journal of Healthcare Technology and Management* , 10, (1-2), 119 - 131.
38. Migas, N., Buchanan, W. (2008). Ad-hoc Routing Metrics and Applied Weighting for QoS support. In: (Ed.) 22nd IEEE International Parallel & Distributed Processing Symposium. (pp. 1 - 8 ). Miami, FL: IEEE.
39. Kwecka, Z., Buchanan, W., Saliou, L. (2008). Validation of 1-N OT Algorithms in Privacy-Preserving Investigations. In: (Ed.) 7th European Conference on Information Warfare and Security. (pp. ).
40. Lawson, A., Buchanan, W. (2007, ). Challenge-based Learning Framework for Teaching Programming Skills. Paper presented at HEA-ICS 7th Programming Workshop, University of Kent, Canterbury, 2nd April 2007.
41. Migas, N., Buchanan, W. (2007). Mass Customisation through Personalised Brochures: the Role of Digital Printing. *The 15th European Conference on Information Systems*.
42. Saliou, L., Buchanan, W., Munoz, J. (2007). Scenario Analysis using Out-of-line Firewall. In: Remenyi, D. (Ed.) 6th European Conference on Information Warfare and Security. (pp. 227-235). Shrivvenham, UK: Academic Conferences International.
43. Saliou, L., Buchanan, W., Munoz, J. (2007). Scenario Analysis using Out-of-line Firewall. In: (Ed.) 6th European Conference on Information Warfare and Security. (pp. 227-235). Shrivvenham, UK,:
44. Thuemmler, C., Buchanan, W. (2007). Setting Safety Standards by Designing a Low-budget and Compatible Patient Identification System based on Passive RFID Technology. *International Journal of Healthcare Technology and Management (IJHTM)*, 8, (5), 571-583.
45. Buchanan, W. (2007). *The Handbook of Data & Networks Security 1* (1 ed.). : Springer-Verlag New York, Inc. Secaucus, NJ, USA.
46. Abimbola, A., Buchanan, W (2006). A Framework to detect novel Computer Viruses via System Calls. In: Merabti, M., Pereira, R., Abuelma'atti, O. (Eds.) 7th Annual PG Symposium on The Convergence of Telecommunications, Networking and Broadcasting. (pp. 308-313). John Moores University, Liverpool, UK:.
47. Buchanan, W., (2006). Analysis of an Agent-based Metric-Driven for Ah-hoc, On-Demand Routing. *Journal of Ad-hoc Networks*, 4, (2), 146-167.
48. Saliou, L., Buchanan, W., Munoz, J. (2006). Analysis of Firewall Performance Variation to Identify the Limits of Automated Network Reconfigurations. In: Hutchinson, B. (Ed.) 5th European Conference on Information Warfare and Security. (pp. 205-214). Helsinki, Finland:.



49. Abimbola, A., Munoz, J., Buchanan, W. (2006). Enhancing Intrusion Detection via a Active Target Host. In: (Ed.) IEEE ICTe Africa 2006. (pp. ). Kenya: IEEE Computer Society Press.
50. Abimbola, A., Munoz, J., Buchanan, W. (2006). Investigating False Positive Reduction in HTTP via Procedure Analysis. In: (Ed.) IEEE International Conference on Networking and Services. (pp. 87 - 87). Silicon Valley, CA: IEEE Computer Society Press.
51. Buchanan, W. (2006). Mastering Information Technology (Palgrave Masters Series (Computing)) 1 (1 ed.). : Palgrave.
52. Abimbola, A., Munoz, J., Buchanan, W. (2006). NetHost-Sensor: Investigating the Capture of End-To-End Encrypted Intrusive Data. *Computers & Security*, 25, (6), 445-451.
53. Abimbola, A., Munoz, J., Buchanan, W. (2006). NetHost-sensor: Monitoring a target host's application via system calls. *Information Security Tech. Report*, 11, (4), 166-175.
54. Graves, J., Buchanan, W., Saliou, L., Old, L. (2006). Performance Analysis of Network Based Forensic Systems for In-line and Out-of-line Detection and Logging. In: Hutchinson, B. (Ed.) 5th European Conference on Information Warfare and Security. (pp. 41-50). Helsinki, Finland: Academic Conferences International.
55. Buchanan, W., Saliou, L.(2005). Agent-based Forensic Investigations with an Integrated Framework. In: Hutchinson, W. (Ed.) 4th European Conference of Information Warfare and Security. (pp. 47-52). Glamorgan, United Kingdom: Academic Conferences International.
56. Buchanan, W., Munoz, J., (2005). Critical Analysis and Error Determination of Locating-finding Techniques in GSM. *International Journal of Mobile Communications (IJMC)*, 3, (2), 165-182.
57. Migas, N., Buchanan, W. (2005). Metric Evaluation of Embedded Java-based Proxies on Handheld Devices in Cluster-based Ad-hoc Routing. *ECBS '05 Proceedings of the 12th IEEE International Conference and Workshops on Engineering of Computer-Based Systems* , 147 - 154.
58. Saliou, L., Buchanan, W., Munoz, J. (2005). Novel Framework for Automated Security Abstraction, Modelling and Verification. In: Hutchinson, W. (Ed.) 4th European Conference on Information Warfare and Security. (pp. 303-311). Glamorgan, United Kingdom: Academic Conferences International.
59. Buchanan, W., (2004). Agent-based Clustering over Ad-hoc Networks. *Expert Update*.
60. Buchanan, W., (2004). Agent-based Systems for Ah-hoc Routing in Wireless Networks. In: (Ed.) BCS Symposium/Colloquium on Mobile and Complex Agent Applications. (pp. ). Napier University, Edinburgh:.
61. Abimbola, A., Munoz, J., W.Buchanan, W. (2004). Analysis and Detection of Cruising Computer Viruses. 3rd International Conference on Electronic Warfare and Security (EIWC) .

62. Raja, K., Buchanan, W., Munoz, J. (2004). Analytical Review of Mobile Phone-based Location-finding. IEE Communication Engineer.
63. Migas, N., Buchanan, W., (2004). Benchmarking bandwidth and resource consumptions of Java-based proxy PDAs in ad-hoc networks. Expert Update.
64. Buchanan, W. (2004). Correlation between academic and skills-based tests in computer networks. British Journal of Education Technology (BJET), Volume 37, Number 1, January 2006 , pp. 69-78(10).
65. Buchanan, W. (2004). Covert Channel Analysis and Detection using Reverse Proxy Servers. 3rd International Conference on Electronic Warfare and Security (EIWC).
66. Buchanan, W., Saliou, L. (2004). Enhanced Methods of Coursework Provision of Computing. IEEE International Conference on Information Technology: Research and Education , 111 - 115.
67. Buchanan, W. (2004). Llamas D, Covert Channel Analysis and Detection using Reverse Proxy Servers. 3rd International Conference on Electronic Warfare and Security (EIWC).
68. Buchanan, W., Raja, K., (2004). Migration of Location Services from GSM to 3G. 3G Mobile Communication Technologies, 2004. 3G 2004. Fifth IEE International Conference on , 352 - 358.
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70. Buchanan, W. (2004). Network-based Computer Forensics for Misuse Detection. Industrial Management & Data Systems (IMDS) Journal.
71. Buchanan, W. (2004). Replacing Courseworks with Practical Assessments in Computer Networks. Napier Teaching Fellow's Journal.
72. Buchanan, W. (2004). The handbook of data communications and networks 1 (2 ed.). : KLUWER ACADEMIC PUBLISHERS.
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86. Lewis, O., Buchanan, W. (2002). Performance Issues of Variability Design for Embedded System Product Lines. Fraunhofer IESE Technical Report 070.00/E .
87. Buchanan, W., Brown, E. (2002). Towards a Reusable and Reconfigurable WWW, System-Level Issues and Approaches in Software Development. IEEE 26th Annual International Computer Software and Applications Conference, 814 - 815.
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93. Buchanan, W. (2000). Computer Busses ( ed.). : Butterworth-Heinemann Newton, MA, USA.

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## PhD/MPhil Examinations/Completions

- 15 PhD and 3 MPhil Vivas.
- 12 MPhil/PhD Completions.
- Patents:
  - US Patent: 61/116681 (with Jamie Graves), Oct 2009. DNA Digital Fingerprinting Framework.
  - UK Patent: 0816556.5 (with Jamie Graves), Sept 2008. DNA Digital Fingerprinting Framework.
- External Examiner Activities:
  - Robert Gordons University, Aberdeen (started Aug 1997 - completed Aug 2001), BSc (Hons).
  - Paisley University, Paisley (started 1998 - complete 2003), BSc.
  - University of Central Lancashire (started 1999 - Completed 2003), MSc.
  - Staffordshire University (started 2004 – Completed 2007), BSc (Hons).
  - University of Sunderland (started 2007 – Complete 2011), MSc Security.
  - University College, Dublin (to start 2011).

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14. Napier University develops 'digital DNA' computer security system, 3 Feb 2009, BJHCIM, and many other publications.
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