Curriculum Vitae: David Robertson

Date of completion: 16th August 2014

A. CURRICULUM VITAE

1. Name

David Stuart Robertson

2. College

Science & Engineering

3. School

Informatics

4. Date of first appointment in The University of Edinburgh

1st October 1984

5. Dates of promotions in The University of Edinburgh

October 1988 : lecturer

October 2002 : senior lecturer

October 2008 : professor

6. University education

BSc Hons (2.1) Ecological Science : University of Edinburgh, 1984.

PhD Artificial Intelligence : Autonomous University of Barcelona, 2000 (external registration while staff member of University of Edinburgh).

7. Career since graduation

October 1984 – October 1988 : Research fellow, Department of Artificial Intelligence, University of Edinburgh.

October 1988 – September 2002 : Lecturer, Department of Artificial Intelligence, University of Edinburgh.

October 2002 – September 2008 : Senior Lecturer, School of Informatics, University of Edinburgh.

October 2008 – date : Professor, School of Informatics, University of Edinburgh.

October 1994 – October 1999 : EPSRC Advanced IT Fellow, School of Informatics, University of Edinburgh.

August 2001 – July 2009 : Director, Centre for Intelligent Systems and their Applications, School of Informatics, University of Edinburgh.

August 2009 – July 2014 : Head, School of Informatics, University of Edinburgh.

August 2014 – date : Dean, College of Science and Engineering, University of Edinburgh.

9. Achievements

- I developed the first system for synthesising complex ecological simulation models as logic programs, based on problem descriptions given by non-mathematical ecologists using a domain-specific language. My 1991 book was the first in this area.
- I developed a "lightweight" approach to applied logic, in which the barrier to adoption of logic created by the mathematical complexity of formal methods is dramatically reduced by applying logics in ways which mesh with existing engineering practises - hence the resulting methods are lightweight in the sense that they are easy for engineers to pick up. My 1999 book was a recommended formal methods text by the International Association of C and C++ Users.
- I invented a new approach to coordinated knowledge sharing in distributed systems. To support this, I defined an executable specification language (the Lightweight Coordination Calculus, LCC) for describing models of interactions, combining a process calculus specification language with an execution model drawn from logic programming. Many others have helped to develop and enhance this concept via large EU (OpenKnowledge and Smart Society) and UK national (SociaM) projects.
- The research above has stimulated a wide variety of translational research in astrophysics, business modelling, ecology, emergency response, healthcare, proteomics and other areas.
- I led the School of Informatics at Edinburgh for 5 years as Head of School. During this period it doubled its research income without increasing it's core academic staff headcount and rose from 30 to 12 in the world QS rankings for computing science departments.
- I was part of the leadership teams that developed the University as a hub for translational research in data science - attracting (among others) the Digital Healthcare and Data Innovation Centres and the Farr Network.

10. Principal research grants

The ECO project: Funded by EPSRC. I was a CoI in the latter part of this project with Bundy and Muetzelfeldt. Edinburgh funding £60,000. Duration 1988-1991.

The Intelligent Authoring Project: Funded by EPSRC, involving three universities and the Scottish Office. I was the Edinburgh PI. The other PIs were Tweed (Queens, Belfast) and Summerville (Leeds). Edinburgh funding £90,000. Duration 1991-1994.

The Techniques Editor project: Funded by an ESRC/MRC/EPSRC Joint Initiative in Cognitive Science and Human Computer Interaction, involving 3 universities. I was the coordinator. The other PIs were Pain, Brna (Edinburgh), Ormerod (Loughborough), Kahney (Open University). Edinburgh funding £85,000. Duration 1991-1994.

The Indigenous Knowledge project: Funded by the Overseas Development Agency. I was one of the PIs at Edinburgh. The other PIs were Sinclair (Bangor) and Muetzelfeldt (Institute for Ecology & Resource Management, Edinburgh). Edinburgh funding £80,000. Duration 1991-1994.

Frameworks for Reasoning in Safety Cases: Funded by the EPSRC. Involved PIs at a number of Edinburgh departments: the Laboratory for Foundations of Computer Science (Anderson,Clelland); the Human Communications Research Centre (Stenning); the Department of Artificial Intelligence (Bundy, myself); and the Department of Sociology (MacKenzie). Funding to my department £178,000. Duration 1993-1996.

Advanced IT Fellowship: Funded by the EPSRC to support my personal research. Funding £123,000. Duration 1994-1999.

Sustainable Lifecycles in Information Ecosystems: Funded by the EC (Framework 5) involving 3 universities. I was the coordinator. The other PIs were Anderson,Fourman,Sannella (Edinburgh), Parsons, Wooldridge (Liverpool), Agusti and Sierra (Barcelona). Total funding £631,800. Edinburgh funding £262,600. Duration 2000-2003.

Communication of Knowledge from Synthesised Web Sites: Funded by the EPSRC and involving 2 universities. I was the coordinator. The other PIs were Lee (Edinburgh) and Johnson (Glasgow). Total funding £276,200. Edinburgh funding £155700. Duration 2000-2003.

Advanced Knowledge Technologies Interdisciplinary Research Collaboration: Funded by the EPSRC involving 5 UK universities. I was one of the two PIs at Edinburgh. The other PIs were Tate (Edinburgh), Shadbolt, Hall (Southampton), Sleeman (Aberdeen), Motta (Open University) and Wilks (Sheffield). Total funding £7 million. Edinburgh funding £1,289,000. Duration 2000-2006.

Open Knowledge: Funded by the EC (Framework 6) involving 6 universities. I was the coordinator. The other PIs were van Harmelen (Amsterdam), Sierra (Barcelona), Motta (Open University), Shadbolt (Southampton) and Giunchiglia (Trento). Total funding £2.6 million. Edinburgh funding £636,000. Duration 2006-2009.

Safe and Sound: ICT Services to Ensure Quality and Safety of Patient Care : Funded the EPSRC Grand Challenges in Information Driven Health initiative, with Fox (Oxford), Glasspool (Edinburgh) and Vincent (Imperial College).

National e-Science Centre Research Platform : Funded by EPSRC's e-Science Platform call, with Clarke, Berry, van Hemert, Atkinson, Mann (Edinburgh) Sinnott and Ford (Glasgow).

Smart Society - Hybrid and Diversity-Aware Collective Adaptive Systems : Funded by the EC (Framework 7), with Rovatsos (PI at Edinburgh), Anderson and Ramamoorthy. Total Funding £4 million. Edinburgh funding 0.5 million.

Social Machines Research Programme : Funded by the EPSRC involving 3 UK universities. PIs are Shadbolt (coordinator, Southampton), de Roure (Oxford) and myself. The other investigators are Buneman and Hall. Total funding £6.1 million. Edinburgh funding £1.2 million. Duration 2012-2017.

I was a founder member of the Edinburgh component of the Dependability Interdisciplinary Research Collaboration, an EPSRC project (similar to the AKT IRC above). The PIs on this grant were Anderson (Edinburgh), Jones (Newcastle), Sommerville (Lancaster), Littlewood (City) and Burns (York).

With Leung, I developed the initial programme of research for the new Centre for Biomedical Informatics at the University of Macao. This is intended to provide a focus for automated knowledge sharing and analysis in Chinese Medical research (it supports the Journal of Chinese Medicine) and already has stimulated a cluster of research project proposals in Hong Kong, Beijing and elsewhere.

Other smaller research grants include: The Social-IST EU coordination action for collective intelligence research, Logics for Knowledge Sharing project (3 years, British Council/CAPES-Brazil funded, collaborative with Sao Paulo and Fortaleza); the MODELOGOS project (3 years CICYT Spain funded, collaborative with Barcelona); and two EU Marie Curie fellowships to support visiting research fellows. I have also have occasional consultancy projects with government and industrial organisations (*e.g* Lucas Aerospace, UNESCO, the UK Health and Safety Executive) and have been a mentor under the Edinburgh Pre-Incubator Scheme (EPIS) for stimulating commercial spinoffs from academic research.

11. RAE status

I am included in the 2013 REF (and was included in all RAEs preceding it).

12. Research supervision experience

The following are the doctoral students who have completed their theses under my (1st) supervision. Listed for each is the year of award of doctorate, student name, and last known occupation.

1. 1992, Flavio Correa da Silva, *Automated Reasoning with Uncertainties* (Reader in the Department of Computer Science, University of Sao Paulo).
2. 1993, Xindong Wu, *Knowledge Acquisition from Databases* (Department Chair in Computer Science at the University of Vermont).
3. 1994, Keiichi Nakata, *A Causal Reasoning Approach to Behaviour-oriented Design* (Reader, Henley Business School).
4. 1994, Maria Vargas-Vera, *Guidance During Program Composition in a Prolog Techniques Editor* (Lecturer in Computing, the Open University).
5. 1995, Wamberto Vasconcelos, *Extracting, Organising Designing and Reusing Prolog Programming Techniques* (Reader in Computer Science, University of Aberdeen).
6. 1995, Soon-Ae Yang, *A Case Based Reasoning System for Building Regulations* (Chief of Staff, Minister for Technology, South Korea).
7. 1996, Mandy Haggith, *A Meta-level Argumentation Framework for Representing and Reasoning about Disagreement* (Forestry researcher and campaigner, Lochinver, Scotland).
8. 1997, Nam Seog Park, *A Connectionist Representation of First-order Formulae with Dynamic Variable Binding* (Research scientist at General Electric Labs, New York).
9. 1998, Alberto Castro, *A Techniques Based Framework for Domain-specific Synthesis of Simulation Models* (Lecturer in the Department of Computer Science, University of Manaus).
10. 1998, Peter Funk, *CABS: A Case-Based and Graphical Requirements Capture, Formalisation and Verification system* (Senior Lecturer at the Department of Computer Engineering, Malardalen University).
11. 1998, Edjard Mota, *Time Granularity in Simulation Models Within a Multi-agent System* (Senior Research Scientist, Hewlett Packard Research, Brazil).
12. 1999, Renaud Lecoeuche, *Formalisation and Evaluation of Focus Theories for Requirements Elicitation Dialogues in Natural Language* (Senior Operations Research Scientist, Amazon, Seattle).
13. 2000, Yannis Kalfoglou, *Deploying Ontologies in Software Design* (Technology Innovation Consultant, Ricoh Europe).
14. 2001, Daniela Carbogim, *A Formal System for Dynamic Argumentation* (Consultant, Mackenzie Consulting, Sao Paulo).
15. 2001, Jessica Chen-Burger, *Formal Support for Business Process Modelling* (Lecturer, Heriot Watt University).
16. 2003, Virginia Brilhante, *Ontology and Re-use in Model Synthesis* (Senior Lecturer in the Department of Computer Science, University of Manaus).
17. 2003, Joao Cavalcanti, *Web Site Synthesis from Domain-specific Problem Descriptions* (Head of Department of Computer Science, University of Manaus).
18. 2006, Mark Collins *An Algorithm for Evolving Protocol Constraints* (co-founder Glufstream Software)
19. 2006, Jarred McGinnis *On the Mutability of Protocols* (Research Manager, Semantic Technologies, Press Association, London)
20. 2007, Guo Li *Enacting a Decentralised Workflow Management System on a Multi-agent Platform* (Research Fellow, Computer Science, Imperial College, London)

21. 2007, Fadzil Hassan, *Managing Finite Domain Constraints in Multi-agent Interactions*, (Lecturer, Petronas University, Malaysia).

22. 2007, Adam Barker, *Distributed Multi-agent Protocols in Support of Grid Experimentation*, (Reader, University of St. Andrews)

23. 2007, Siu-wai Leung, *Automated Synthesis in Support of Internet Based Experimentation*, (Executive editor Journal of Chinese Medicine)

24. 2008, Nardine Osman *Model checking for multi-agent coordination*, (Research Fellow, CSIC AI Research Institute, Barcelona).

25. 2009, Paolo Besana *Predicting the content of peer to peer interactions*, (Research Fellow, Informatics, Edinburgh).

26. 2009, Maciej Zurawski *A formal framework for multi-context knowledge management*, (Managing director of Musemantic).

27. 2009, David Lambert *Thinking outside the TBox: multiparty service matchmaking as information retrieval*, (Research Fellow, Knowledge Media Institute, Open University).

28. 2010, Ana Costa e Silva *Task-specific ontology mapping in distributed environments*, (Technology consultant).

29. 2010, Paul Martin *Social group formation in multi-agent systems*, (Research Fellow, Informatics, University of Edinburgh).

30. 2011, Philip Graham *Multi-agent coordination in complex virtual environments*, (Technology consultant).

31. 2012, Nikolaos Chatzinikolaou *Evolution Through Reputation: Noise-resistant Selection in Evolutionary Multi-agent Systems*, (Technology consultant).

32. 2012, Jinhan Kim *J-model: an Open and Social Ensemble Learning Architecture for Classification*, (Researcher, Samsung).

33. 2013, Xi Bai *Peer-to-Peer, Multi-agent Interaction Adapted to a Web Architecture*, (Researcher, BBC).

34. 2013, Aswag Maghraby *Bridging the Specification Protocool Gap in Argumentation*, (Lecturer, Saudi Arabia).

35. 2013, Shariar Bijani *Securing Open Multi-agent Systems Governed by Electronic Institutions*, (Lecturer, Shahed University, Tehran).

13. Teaching experience

I have had a major involvement in teaching since the expansion of Artificial Intelligence undergraduate courses of the mid-1980s. My principal achievements in this time (interrupted by my EPSRC Advanced Research Fellowship) are as follows:

- I have maintained Edinburgh's reputation in computational aspects of logic by teaching courses in logic programming and by using logic as a *lingua franca* for courses in which it is less common (for example in knowledge management and in software engineering).
- I have been one of the key players in developing our teaching of knowledge based systems, both in the formative undergraduate years and in the more advanced Honours and Masters courses.
- I have promoted, by example, teaching of informatics across traditional sub-disciplines (in my case, between artificial intelligence and computer science). I believe this to be essential to achieving a deep understanding across the field.

- As a course organiser I have helped make key course integration occur, increasing course size while decreasing administrative overhead (for example in Artificial Intelligence 2 and our MSc). This, in my view, has been crucial to maintaining teaching excellence as Informatics has grown.

My main teaching responsibilities have been as follows:

- Artificial Intelligence 1: I have taught (in different years) components covering roughly half the course (Prolog Programming, Knowledge Representation, Experimental Methods)
- Informatics 1: I co-designed and co-taught two of the four components of this course which is the new (2004-5) foundation course for the majority of Informatics undergraduate degrees. My 2006-7 course on logic and computation is one of the first wave of University "vanguard" courses.
- Artificial Intelligence 2: I was course organiser(1989-1994, 1999-2000) and redesigned (and presented) its knowledge based systems component. I was responsible for coordinating and overseeing a major overhaul of this course in 1999-2000.
- Computer Science 2: I re-designed and taught the software engineering component.
- MSc in Informatics: I was the first course organiser for the combined Informatics MSc courses (2000-2001). This merged three MSc degrees (Artificial Intelligence, Cognitive Science and Computer Science. I have taught MSc/Honours courses in logic programming, knowledge based systems, software engineering and multi-agent semantic web systems.
- I led the team that re-designed the knowledge representation and reasoning theme for Informatics Honours and Msc courses, producing a suite of eight revised/new courses covering this research area.

External examiner for the Open University's Prolog programming course (1993 - 1998).

Member of the PhD Thesis External Review Committee of the International Graduate School in Information and Communication Technology of Trento, Italy.

External examiner for undergraduate computer science courses for the University of Aberdeen (2009-2012).

External examiner for undergraduate computer science courses for the University of Liverpool (2011-date).

Member of Master of Technology Visiting Committee for the Institute of Systems Science of the University of Singapore (2012).

External advisor for QA of open data course presented by University of Southampton and the UK's Open Data Institute.

14. Postgraduate student supervision

I have supervised approximately 50 MSc student projects (all successful).

15. Administrative experience

- 2014-date: Dean of Special Projects, College of Science & Engineering. Stimulating and supporting strategic efforts across College.
- 2009-2014: Head of School of Informatics. The School is the largest academic department for computing science in the UK and one of the top computer science departments in the world.
- 2001-2009: Director of the Centre for Intelligent Systems and their Applications, one of the six research institutes comprising the School of Informatics.

- Other administrative duties include being course organiser for Artificial Intelligence 2 (1989-1994, 1999-2000) and for the Informatics MSc (2000-2001); director of studies (2004-2009); and membership of various University committees and advisory boards (Centre for the Study of Environmental Change and Sustainability 1997-1998, University Management Information Committee 2002-2004, University Website Development Project Board 2007-date, University Shared Timetabling Board 2011-date).

16. Fellowships and elected membership of societies

- Fellow of the British Computer Society (FBCS).
- Elected to executive group of the UK Computing Research Committee (2010-2014).
- Chair of UK Computing Research Committee (2014-date).
- Member of British Computer Society Academy board (2014-date)

17. Membership of committees and review panels

- Editor in Chief of the Artificial Intelligence Review Journal 2009-2014.
- Joint Editor in Chief of the Automated Experimentation Journal 2009-2011.
- Member of programme committees for: 2^{nd} IFAC/IFIP/EurAgEng Workshop on Artificial Intelligence in Agriculture (1995); IEEE Software Engineering and Knowledge Engineering conference (1997-2003); IEEE Knowledge and Data Engineering Exchange Workshop (1997); Logic Programming and Software Transformation Workshop (1998,1999); Workshop on Visual Issues for Formal Methods (1998); Year 2000 Integrated Design and Process Technology conference (2000); IEEE International Workshop on Rapid System Prototyping (2001 to 2005); The First International Workshop on Model-based Requirements Engineering (2001); Modelling and Methods for Agent Based Systems workshop (2001); The 16th International Conference on Industrial and Engineering Applications of Artificial Intelligence and Expert Systems (2002); Formal Approaches to Multi-Agent Systems workshop (2003, 2007); 15th IEEE International Conference on Tools with Artificial Intelligence (2003,2004); IEEE International Conference on Machine Learning and Cybernetics - agent track (2003); AAAI Spring Symposium on Semantic Web Services (2004); ECAI workshop on the Semantic Grid (2004); AAAI Fall Symposium on Agents and the Semantic Web (2005); Young Researchers Workshop on Service Oriented Computing (2005); 4th International Workshop on Web Semantics (2005); User Aspects of the Semantic Web workshop at the European Semantic Web Conference (2005); End-User Semantic Web Interaction workshop at the International Semantic Web Conference (2005); 4th Mexican International Conference on Artificial Intelligence (2005); 2nd International Conference on Intelligent Computer Communication and Processing (2006); ECAI workshop on Contexts and Ontologies (2006); ECAI workshop on Formal Aspects of Multi-Agent Systems (2006); American Association for Artificial Intelligence, AAAI (2006); ISWC workshop on Uncertainty Reasoning for the Semantic Web (2006-2014); Workshop on Context and Ontology Representation and Reasoning (2007); European Workshop on Multi-Agent Systems (2007); European Conference on Artificial Intelligence, ECAI (2008); International Workshop On Semantic Extensions to Middleware (2008); International Joint Conference on Autonomous Agents and Multi-Agent Systems, AAMAS (2009 to 2013); International Conference on Advances in Semantic Processing (2009); Formal Approaches to Multi-Agent Systems (2007,2009); ISWC workshop on the Living Web (2009); International Conference on Artificial Intelligence (2010); 9th International Conference on Software Engineering and Formal Methods, special track on modelling for sustainable development (2011); International Symposium on Foundations of Health Information Engineering and Systems (2011,2012); 1st Workshop on Social Informatics and Social Computing (SISCO 2011, held in conjunction with the International Conference on Management of Emergent Digital EcoSystems, MEDES 2011); Web Science (2011) vice-Chair; Crowd Search workshop at WWW (2011); 4th ACM Web Science Conference, WebSci (2012); International Conference on Computer and Information Sciences (2012); 2nd International Workshop on Searching and Integrating New Web Data Sources at VLDB (2012); 2nd International Workshop on the Theory and Practice of Social Machines (2013); PAAMS Workshop on Intelligent Human-Agent Societies (2013), ISWC Workshop on Context, Interpretation and Meaning (2014), ACS/IEEE International Conference on Computer Systems and Applications, Social Computign track (2014), Practical Applications of Agents and Multi-agent Systems (2015).

- Referee for the following journals: Artificial Intelligence; IEE Journal on Selected Areas in Communications; IEE Transactions on Systems, Man and Cybernetics; IEEE Software Engineering; IEEE Transactions on Knowledge and Data Engineering; The International Journal of Human Computer Studies; The International Journal of Agent-Oriented Software Engineering; The Journal of Ecological Modelling; The Journal of Expert Systems; The Journal of Software Engineering and Knowledge Engineering; The Journal of Software Practice & Experience; The Journal of Software and System Modelling; The Journal of Web Semantics; Knowledge Based Systems Journal; The Knowledge Engineering Review.
- Member of the editorial board of the Knowledge and Information Systems journal (published by Kluwer) from its inception in 1998 until 2006.
- Organiser of the following events: Association of Logic Programming workshop on Logic Programming Environments, Edinburgh (1994); ETAPS workshop on Multi-agent Simulation, Genova (2001); ETAPS workshop on Multi-agent Systems, Budapest (2002); Peer to Peer Knowledge Management workshop at the second Annual International Conference on Mobile and Ubiquitous Systems, San Diego (2005).
- Member of IT proposal review panel for the Science Foundation of Ireland (2005, 2009).
- Proposal reviewer for: British Computer Society Distinguished PhD Dissertations; British Computer Society Roger Needham Awards; Royal Society University Research Fellowships.
- Project reviewer for the European Commission (including large scale Integrated Projects).
- Member of the International Exchanges panel for the Royal Society (2011 - 2015)
- Member of strategic review panel for the Department of Information Systems, and Computing in Brunel University (2012).
- Member of the UK Engineering and Physical Sciences Research Council (EPSRC) peer review college.
- Chair of UK Engineering and Physical Sciences Research Council (EPSRC) review of Human Computer Interaction (approximately 10% of EPSRC ICT research portfolio), 2012.
- Member of UK Engineering and Physical Sciences Research Council (EPSRC) Strategic Advisory Team for ICT (2013 - 2015).
- Deputy-Chair of Management Board for the Digital Healthcare Innovation Centre (2013-14).
- Member of Management Board for the Data Science Innovation Centre (2014).

18. Items of esteem at symposia and congresses

The following are seminars given internationally by invitation (items 14,17 and 18 are keynote talks). Note that the ARO/NSF/ARPA/ONR/AFSOR meetings in 1994,1995,1998,2000 and 2002 are in the "Monterey workshop" series. This is an annual US event, supported by the main US research funding bodies and held alternately in the US and Europe, targeting a different aspect of innovation in software engineering each year. All formal presentations at Monterey workshops are by invitation and it funds attendance by major international researchers in each chosen area.

1. "Applications of Computational Logic to Ecological Modelling", invited seminar, San-Diego Supercomputing Centre, California, USA, 1994.
2. "Argumentation in Support of Software Design", invited seminar, ARO/NSF/ARPA/ONR/AFOSR Workshop on Increasing the Practical Impact of Formal Methods for Computer-Aided Software Development, Monterey, USA, 1994.
3. "Lightweight Methods of Formal Specification", invited seminar, ARO/NSF/ARPA/ONR/AFOSR Workshop on Increasing the Practical Impact of Formal Methods for Computer-Aided Software Development, Monterey, USA, 1995.

4. "A Requirements Specification System for Logic Programs", invited seminar, CSIC Institute for Artificial Intelligence, Autonomous University of Barcelona, Spain, 1995.

5. "Domain Specific Problem Description", invited seminar, Institute for Informatics, University of Zurich, Switzerland, 1997.

6. "Pitfalls of Formal Methods in Program Synthesis", invited seminar, ARO/NSF/DARPA workshop on Engineering Automation for Computer Based Systems, Carmel, USA, 1998.

7. "Formal Methods From Requirements to Implementation", invited seminar, Department of Computer Science, University of Rouen, France, 1998.

8. "Formal Methods in Modelling Populations of Agents", invited seminar, ARO/NSF workshop on Modelling Software Systems in Fast Moving scenarios, Liguria, Italy, 2000.

9. "A Framework for Multi-agent Simulation", invited seminar, CSIC Institute for Artificial Intelligence, Autonomous University of Barcelona, Spain, 2000.

10. "Reliable Design of Agent Systems", invited seminar, ARO/NSF workshop on Radical Innovations in Software and Systems Engineering, Venice, Italy, 2002.

11. Invited panelist, Dagstuhl Seminar: Semantic Interoperability and Integration, Schloss Dagstuhl, Germany, 2004.

12. "A Lightweight Coordination Calculus: Its Use in Deployment and Analysis", invited seminar, Department of Computer Science, University of Trento, Italy, 2004.

13. "Knowledge Sharing in Distributed, Open Environments", invited seminar, National Centre for High Performance Computing, Taiwan, 2005.

14. "What we Don't Know about Semantic Systems", keynote talk, Inauguration of Austrian Federal Ministry of Innovation research programme on Semantic Systems and Services, Vienna, Austria, 2005.

15. "Applications of Peer to Peer Knowledge Sharing", invited seminar, Tsinghua University, China, 2006.

16. "Opportunities and Limits for Open, Peer to Peer Knowledge Sharing", invited seminar, UN University of Macao, China, 2006.

17. "The Key role of Context in Peer to Peer Knowledge Sharing", keynote talk at 3rd International Workshop on Contexts and Ontologies: Representation and Reasoning, Roskilde, Denmark, 2007.

18. "Agency, Peer to Peer and the Internet - More Than the Sum of Their Parts?", keynote talk at Multi-Agent Logics, Languages, and Organisations Federated Workshops(MALLOW), Durham, UK, 2007.

19. "From Agency to Social Computation", keynote talk at the 12th International Conference on Practical Applications of Agents and Multi-agent Systems, Salamanca, 2014.

19. National invitations

1. "Model Based Requirements Analysis", invited paper, Future Customer Facing Systems Workshop, BT, Martlesham, UK, 1990.

2. Invited panelist, Inaugural meeting of IFIP working group 2.9 on requirements engineering, London, UK, 1995.

3. "Multi-agent Specification for Clinical Protocols", invited seminar, Advanced Computation Laboratory, Imperial Cancer Research Fund, London, UK, 1998.

4. "Synthesis of Logic Programs From Domain-Specific Problem Descriptions", invited paper, The 8th International Workshop on Logic-Based Program Synthesis and Transformation, Manchester, UK, 1998.

5. "Design Automation Using Formal Methods", invited seminar, Department of Computer Science, University of Glasgow, UK, 1999.

6. "Synthesis of Logic Programs", invited seminar, Department of Computer Science, University of Aberdeen, UK, 1999.
7. "In Defence of Formal Methods in Early Requirements Engineering", invited seminar, RESG/FACS workshop on Formal Methods & Requirements Engineering, London, UK, 1999.
8. "Multi-agent Simulation", invited seminar, British Telecom, Martlesham, UK, 2000.
9. "Domain-specific Program Synthesis", invited seminar, Department of Computer Science, University of Surrey, UK, 2001.
10. "Lightweight Formal Methods for Multi-agent Coordination", invited seminar, Department of Computer Science, University of Bath, UK, 2002.
11. Invited panelist, Foundations of Interactive Computation workshop at the European Joint Conferences on Theory and Practice of Software, Edinburgh, UK, 2005.
12. "Coordination Oriented Programming", invited seminar, School of Computer Science, University of Manchester, UK, 2005.
13. "Open Ontologies for Peer to Peer Systems", invited seminar, e-science workshop "The Closed World of Databases Meets the Open World of the Semantic Web", National e-Science Centre, Edinburgh, UK, 2006
14. "Open, Peer to Peer Knowledge Sharing", invited seminar, University of Durham, UK, 2006.
15. "Reconstructing Argumentation and Trust in the OpenKnowledge Project", invited seminar, Imperial College, London, 2007.
16. "Open, Peer to Peer Knowledge Sharing", invited seminar, Department of Computer Science, University of Aberdeen, UK, 2007.
17. "Programming the Social Computer', invited presentation, Web Science: the New Frontier discussion meeting, The Royal Society, London, 2010.
18. "Security and Social Computation", invited presentation, IBM Better Security Colloquium, Royal Academy of Engineering, 2012.
19. "Research Challenges", invited presentation, IBM Big Data Colloquium, Royal Academy of Engineering, London, 2014.
20. "Socialising Artificial Intelligence", thought leadership seminar, BT, Martlesham, 2014.

20. Major lectures given as guest lecturer

See sections 18 and 19 above.

21. PhD external examining

Julian Smart (Dundee, 1995), Xin Hong (Ulster, 2001), Panayiotis Periorellis (Newcastle, 2002), Martin Dzbor (Open University, 2003), Marc Esteva (Barcelona, 2003), Jordi Sabater (Barcelona, 2003), Thomas Norlander (Aberdeen, 2004), Lee Onn Mak (Surrey, 2006), Martin Gill (Stirling, 2006), Luke Teacy (Southampton, 2006), Fan Zhang (Surrey, 2007), Ying Wang (Queens, Belfast, 2010), Alexandros Marinos (Surrey, 2010), Heather Packer (Southampton, 2011), Michael Gibson (Aberdeen, 2014).

B. LIST OF PUBLICATIONS

In the lists below, in all joint publications where I am first author I am also the main originator.

An asterisk is placed against those publications I consider the most significant.

1. Books published

1. ∗ D. Robertson, A. Bundy, R. Muetzelfeldt, M. Haggith, and M Uschold. *Eco-Logic: Logic-Based Approaches to Ecological Modelling*. MIT Press (Logic Programming Series), 1991. ISBN 0-262-18143-6. 243 pages.

2. ∗ D. Robertson and J. Agusti. *Software Blueprints: Lightweight Uses of Logic in Conceptual Modelling*. Addison Wesley/ACM Press, 1999. ISBN 0-201-39819-2. 220 pages.

3. Y. Chen-Burger and D.Robertson. *Automating Business Modelling*. Springer Verlag, 2004. 322 pages.

2. Books/Journal issues edited

1. ACM Transations on Interactive Intelligent Systems, special issue on Internet Scale Human Problem Solving.

3. Articles published as sole author

3.1. Journal articles

1. D. Robertson. Multi-level cooperative dialogue in intelligent front ends. *Journal of Artificial Intelligence in Engineering*, 6(1), 1990.

2. ∗ D. Robertson. An empirical study of the LSS specification toolkit in use. *Journal of Systems and Software*, 42:115–123, 1998. one of the selected papers from SEKE-96.

3. D. Robertson. Pitfalls of formality in early system design. *Science of Computer Programming*, 42(1):29-38, 2002.

3.2. Refereed conference papers

1. D Robertson. A simple Prolog techniques editor for novice users. In G.A. Wiggins, C. Mellish, and T. Duncan, editors, *Proceedings of 3rd Annual Conference on Logic Programming*, pages 190–205, Edinburgh, April 1991. Springer-Verlag Workshops in Computing Series.

2. ∗ D. Robertson. Distributed specification. In *Proceedings of the 12th European Conference on Artificial Intelligence*, Budapest, Hungary, August 1996.

3. D. Robertson. An empirical study of the LSS specification toolkit in use. In *Proceedings of the 8th International Conference on Software Engineering and Knowledge Engineering, Nevada, USA*. Knowledge Systems Institute, Illinois, 1996. ISBN 0-9641699-3-2.

4. D. Robertson. Domain specific problem description. In *Proceedings of the 8th International Conference on Software Engineering and Knowledge Engineering, Nevada, USA*. Knowledge Systems Institute, Illinois, 1996. ISBN 0-9641699-3-2.

5. D. Robertson. Can formal argumentation raise our confidence in safe design? In *Towards System Safety: Proceedings of the Seventh Safety-Critical Systems Symposium, Huntingdon, UK*, pages 225–238. Springer-Verlag, 1999. ISBN 1-85233-064-3.

6. ∗ D. Robertson. A Lightweight Method for Coordination of Agent Oriented Web Services. In *Proceedings of AAAI Spring Symposium on Semantic Web Services, Stanford*, 2004.

7. ∗ D. Robertson. Multi-agent Coordination as Distributed Logic Programming. In *Proceedings of the International Conference on Logic Programming, Sant-Malo*, 2004.

3.4. Refereed workshop papers

1. D. Robertson. Lightweight formal specification. In *Proceedings of ONR/ARPA/AFOSR/ARO/NSF workshop on Increasing the Practical Impact of Formal Methods for Software Architectures*, Monterey, California, 1995.

2. D. Robertson. Pitfalls of formality in early system design. In *Proceedings of the ARO/NSF Monterey Workshop on Increasing the Practical Impact of Formal Methods for Computer-Aided Software Development*, Monterey, California, 1998. an extended version appears in a special issue of The Science of Computer Programming.

3. D. Robertson. A Lightweight Coordination Calculus for Agent Social Norms. In *Proceedings of the Autonomous Agents and Multiagent Systems Workshop on Declarative Agent Languages and Technologies, New York*, 2004.

4. Joint articles published

4.1. Journal articles

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