

NICHOLAS ROBERT JENNINGS

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I. PERSONAL RECORD**Appointments Held**

2016-	Vice-Provost (Research and Enterprise), Imperial College
2016-	Professor of Artificial Intelligence, Imperial College
2016-	Visiting Professor, Electronics and Computer Science, Univ. of Southampton
2015-16	Head of the Electronics and Computer Science Department, Univ. of Southampton
2014-16	Regius Professor of Computer Science, Univ. of Southampton
	(a post bestowed by Queen Elizabeth II on her Diamond Jubilee to "recognise exceptionally high quality research")
2010-15	Chief Scientific Advisor for National Security to the UK Government
2008-10	Associate Dean (Research and Enterprise), Faculty of Engineering, Science and Mathematics, Univ. of Southampton
2000-14	Professor, Electronics and Computer Science, Univ. of Southampton
1998-99	Professor, Electronic Engineering, Queen Mary Univ. of London
1995-98	Reader, Electronic Engineering, Queen Mary Univ. of London
1989-95	Lecturer, Electronic Engineering, Queen Mary Univ. of London
1988-89	Research Assistant, Electronic Engineering, Queen Mary Univ. of London

Qualifications

1992	PhD Artificial Intelligence, Queen Mary University of London
1988	BSc (Hons.) Computer Science (First Class), University of Exeter

National Honours

2016	Companion of The Order of the Bath (CB) "For services to Computer Science and National Security Science"
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Fellowships and Professional Society Memberships

- Fellow of the German Research Centre for Artificial Intelligence (2012)
- Fellow of the Association for the Advancement of Artificial Intelligence (2010)
- Fellow of the Institute of Electrical and Electronic Engineers (2008)
- Member of Academia Europaea (2008)
- Fellow of the Society for the Study of AI and Simulation of Behaviour (2006)
- Fellow of the Royal Academy of Engineering (2005)
- Fellow of the Institution of Engineering and Technology (2004)
- Chartered IT Professional (2004)
- Fellow of the British Computer Society (2003)
- Fellow of the European Artificial Intelligence Association (2003)
- Chartered Engineer (2003)

External Appointments

- Advisor to:
 - Aerogility (www.aerogility.com) (2000-)
 - Contact Engine (www.contactengine.com) (2017-)
 - Crossword Cybersecurity (www.crosswordcybersecurity.com) (2016-)
 - Mentat (www.ment.at) (2016-)
 - Reliance Cyber Science (relianceacsn.co.uk) (2016-)
- Trustee of the Building Research Establishment (2015-)
- Non-Executive Board member of CERT-UK (2014-16)
- Distinguished Adjunct Professor at King Abdulaziz University, Saudi Arabia (2011-2017)
- Founding Director of Int. Foundation on Autonomous Agents and Multi-Agent Systems (1998-2012)

II. RESEARCH AND SCHOLARSHIP

My long-term research goal is to develop artificial intelligence systems for large-scale, open and dynamic environments. I focus on how to endow individual autonomous agents with the ability to act and interact in flexible ways and with effectively engineering systems that contain both humans and agents. I am interested in these issues from their fundamental principles, through design, to their application in particular problem domains. My research has made advances in models of automated negotiation, mechanisms and algorithms for inter-agent cooperation and coordination, models of trust and reputation, perspectives and methodologies for agent-oriented software engineering and the science of human-agent collectives.

Citations

- 72,000 citations and h-index = 114 (Google Scholar, Nov. 2017)
- ISI Web of Science “highly cited” in both the Computer Science and the Engineering categories
- Top 25 in the world for h-index for Computer Science (www.cs.ucla.edu/~palsberg/h-number.html)

Impact

I was the lead system architect for one of the world’s first industrial deployments of multi-agent technology, in the area of electricity transportation, and have subsequently been involved with deployments of agent-based solutions for: environmental sensor network monitoring in the Briksdalsbreen glacier in Norway and in the River Solent in Southampton; controlling Daimler-Chrysler’s engine manufacturing production lines; workforce scheduling within BT; interpreting seismic data for oil exploration with BHP Billiton; managing supply chains and providing in-theatre situational awareness with BAE Systems; assessing and predicting race conditions for the 2012 British Olympic sailing team; disaster assessment and response planning with Rescue Global; analysing and predicting home energy use for those in fuel poverty with the Centre for Sustainable Energy and scheduling the repair of aircraft engines with Rolls-Royce. All of these systems have been used operationally — saving and improving lives, protecting the environment, making business processes more efficient, providing insight on complex data science problems, and helping to win gold medals.

I have been involved with a number of start-ups. At Aerogility, formerly Lostwax, I am involved with the design and roll-out of a decision support tool suite that optimises the scheduling and maintenance activities for fleets of aircraft and allows forward simulation of strategic policy and resourcing choices. This system has been used by: BAE Systems for the Tornado, Harrier, Typhoon, Nimrod and Hawk fleets; Lockheed Martin for the F-22 Raptor and F-35 fleets; Sikorsky Aerospace Services for the S-92 fleet; and Boeing for the TLCS UK Chinook fleet. At Mentat, I advise on machine learning technologies for real-time analysis of sensor data for enterprise applications. At Contact Engine, I advise on using artificial intelligence techniques to help improve and personalise consumer interactions. At Crossword and Reliance Cyber Science, I provide strategic advice on a broad range of cyber security challenges and opportunities.

Awards

- *The Engineer's "Collaborate to Innovate" Award* for ORCHID (2016)
- *The Engineer's Award for Best Aerospace and Defence Project* for ALADDIN (2009)
- *BAE Systems Chairman's Award* for ALADDIN's Technology Transfer activities (2009)
- *International Conf. on Autonomous Agents and Multi-Systems Best Industrial Demonstrator Award* (2008)
- *International Foundation for Autonomous Agents and Multi-Agent Systems Special Recognition Award* for paper: "Intelligent agents: theory and practice" *The Knowledge Engineering Review* [> 10,000 citations]
- *The Engineer's Award for Large Company/Univ. Collaboration* for ARGUS II (2007)
- *ACM Autonomous Agents Research Award* (2003) for contributions to agent-based computing
- *IEE Achievement Medal* (2000) for contributions to agent-based computing
- *Computer and Thought Award* (1999) for contributions to multi-agent systems. [The most prestigious award for a young AI researcher and first time in the award's 40-year history the recipient was based in Europe]

International Competitions

- Winner US State Department's TAG Challenge on social mobilization and rapid information gathering (2012) (wikipedia.org/wiki/Tag_Challenge)
- Second place in RoboCup Rescue Simulation League (2010)
- Winner 1st and 2nd International Competitions on the Lemonade Stand Game (2010 & 2011) (www.ecs.soton.ac.uk/about/news/3005)
- Winner RoboCup Rescue infrastructure development competition (2007)
- Winner 1st and 2nd International Competitions on Agent Reputation and Trust (2006 & 2007) (www.lips.utexas.edu/art-testbed/competition.htm)
- Winner 20th Anniversary Iterated Prisoner's Dilemma Competition (2004) (www.prisoners-dilemma.com)
- International Trading Agent Competitions (www.sics.se/tac) in: Market Design (3rd in 09, 1st in 07); Travel Game (3rd in 06, 4th in 05, 2nd in 02; 3rd in 01) and Supply Chain Management (2nd in 05, 6th in 04).

Research Fellows and Students

- Current:

PhD students: A. Augustin (14-), E. Manino (15-), R. Pruna (14-), N. V. Q. Truong (15-)

Research Fellows: Y. Luo (17-)

- Previous:

Research Fellows: A. Bye (Royal Society Industrial Fellow) (06-09), R. Cavalcante (09-11), G. Chalkiadakis (06-11), A. Chapman (09-10), V. D. Dang (04-06), R. K. Dash (05-07), E. David (03-06), P. S. Dutta (05-06), E. Elkind (RCUK Fellow) (07-09), A. Farinelli (07-09), P. Faratin (95-00), E. Gerding (05-07), S. Ghosh (10-13), M. Gibney (97-00), M. He (04-06), G. Hines (11-13), L. M. J. Hogg (98-01), M. Johnson (94-95), N. C. Karunatillake (06-09), A. Lomuscio (99-00), X. Luo (01-06), T. Michalak (09-11), E. Munoz de Cote (08-10), V. Naroditskiy (09-14), T. J. Norman (96-99), P. Panzarasa (99-02), S. Paurobally (02-05), M. Polukarov (07-10), J. Pople (91-93), Z. Rabinovich (07-10), T. Rahwan (06-13), S. D. Ramchurn (04-09), V. Robu (09-14), A. Rogers (03-06), C. Skinner (09-10), J. Stein (94-95), S. Stein (07-15), R. Stranders (10-12), W. T. L. Teacy (06-09, 12-15), L. Tran-Thanh (11-15), P. Turner (95-03), L. Z. Varga (91-93), M. Venanzi (14-15), I. A. Vetsikas (05-11), M. Vinyals (12-14), T. Voice (09-12), P. Vytelingum (06-11), S. Williamson (09-10), F. Wu (11-14), D. Yuen (05-07), D. Zhao (14-16).

PhD students graduated:

1. P. Faratin (2000) "Automated service negotiation between autonomous computational agents"
2. L. M. J. Hogg (2001) "Control of social reasoning in resource bounded agents"
3. S. Kalenka (2001) "Modelling social interaction attitudes in multi-agent systems"
4. C. B. Excelente-Toledo (2003) "The dynamic selection of coordination mechanisms in multi-agent systems"
5. P. Anthony (2003) "Bidding agents for multiple heterogeneous on-line auctions"
6. S. K. Bussmann (2003) "An agent-oriented design methodology for production control"

7. M. He (2004) "Bidding strategies for autonomous trading agents" [Nominated for ECCAI Distinguished Dissertation award]
8. V. D. Dang (2004) "Coalition formation and operation in virtual organisations"
9. S. D. Ramchurn (2004) "Multiagent negotiation using trust and persuasion"
10. Y. Z. Wei (2005) "A market-based approach to recommender systems"
11. T. D. Nguyen (2005) "A heuristic model for concurrent bilateral negotiations in incomplete information settings"
12. P. S. Dutta (2005) "Adaptive distributed resource allocation using cooperative information-sharing"
13. R. K. Dash (2006) "Distributed mechanisms for multi-agent systems: analysis and design" [Winner BCS Distinguished Dissertation award]
14. Y. K. Peña (2006) "Optimal allocation and scheduling of demand in deregulated energy markets" (registered at Technical University of Vienna)
15. T. D. Huynh (2006) "Trust and reputation in open multi-agent systems"
16. N. A. Haque (2006) "Resource allocation in communications networks using market-based agents"
17. N. C. Karunatilake (2006) "Argumentation-based negotiation in a social context"
18. P. Vytelingum (2006) "The structure and behaviour of the continuous double auction"
19. J. Patel (2007) "A trust and reputation model for agent-based virtual organisations"
20. W. T. L. Teacy (2007) "Agent-based trust and reputation in the context of inaccurate information sources"
21. T. Rahwan (2007) "Algorithms for coalition formation in multi-agent systems" [Winner BCS Distinguished Dissertation award]
22. V. Narayanan (2008) "A learning-based approach to modelling bilateral, adaptive agent negotiations"
23. S. Stein (2008) "Flexible provisioning for service workflows" [Honourable mention for European AI Association's Distinguished Dissertation award]
24. I. Ponka (2009) "Commitment models and concurrent negotiation strategies in dynamic service markets"
25. M. Allen-Williams (2009) "Bayesian learning for multi-agent coordination"
26. J. Kho (2009) "Decentralised control of wireless sensor networks"
27. A. C. Chapman (2009) "Control of large distributed systems using games with pure strategy Nash equilibria"
28. R. C. Kota (2009) "Decentralised methods for self-adapting agent organisations"
29. S. A. Williamson (2009) "Valuing communication in multi-agent coordination"
30. A. Papakonstantinou (2010) "Mechanism design for the elicitation of costly probabilistic estimates in next generation citizen sensor networks"
31. R. Stranders (2010) "Decentralised coordination of information gathering agents" [Nominated BCS Distinguished Dissertation award]
32. B. Shi (2011) "Analysis and design of competing double auction marketplaces"
33. H. S. Packer (2011) "Evolving ontologies with online learning and forgetting algorithms"
34. A. M. Sykulski (2011) "The exploration-exploitation trade-off in sequential decision making problems"
35. K. S. Macarthur (2012) "Multi-agent coordination for dynamic, decentralised task allocation"
36. L. Tran-Thanh (2012) "Budget-limited multi-arm bandits" [Runner-up BCS Distinguished Dissertation award & Honourable mention for European AI Association's Distinguished Dissertation award]
37. F. M. D. Fave (2012) "Theory and practice of coordination algorithms exploiting the Generalised Distributive Law"
38. C. Williams (2013) "Practical strategies for agent-based negotiation in complex environments"
39. O. Pryymak (2013) "Achieving accurate opinion consensus in large multi-agent systems"
40. J. McInerney (2014) "Intelligent agents for mobile location services"
41. M. Venanzi (2014) "Trust-based algorithms for fusing crowdsourced estimates of continuous quantities"
42. C. A. Baker (2016) "A combined mechanism for UAV explorative path planning, task allocation and predictive placement"
43. T. Panagopoulos (2016) "Efficient control of domestic space heating systems and intermittent energy resources"
44. Z. Beck (2016) "Collaborative search and rescue by heterogeneous robot teams"
45. E. Alkayal "Agents for cloud computing applications" (submitted, awaiting viva)
46. A. Zenonos "Coordinating measurements for participatory sensing applications" (submitted, awaiting viva)

47. M. M. Kahn "Speeding up GDL-based distributed constraint optimisation algorithms in cooperative multi-agent systems" (writing up)

Academic visitors: J Campos (94-95), K. Decker (02-03), S. Fatima (08), A. Giovannucci (06-07), K. Larson (08), V. R. Lesser (05), M. Mamokas (17), R. A. Micello (08), E. Oliveira (98), T. Paulussen (02), T. Penya-Alba (13), I. Rahwan (02), C. Sierra (96-97), N. Stefanovitch (09), M. Vinyals (10), Z. Wei (13-14), Z. Xu (09-10), F. Zambonelli (99-00), Y. Zick (12), C. Zhang (96)

Funding Secured [TOTAL: £25.61M]. Red = current project

Dates	Funding Body	Title	Other Investigators	Value
16-21	MoD and US Army Research Lab	Distributed Analytics and Information Sciences International Technology Alliance	S. Stein	810k
16-21	Royal Academy of Eng. & Roke Manor	Roke / Royal Academy of Engineering Research Chair in Cyber Security	V. Sassone	889k
16-18	EPSRC	Future everyday interaction with the autonomous Internet of Things	E. Costanza, J. Fischer, T. Rodden & S. Ramchurn	806k
15-18	EPSRC	Cyber security solutions for smart traffic control systems	L. Tran-Thanh & B. An	249k
11-16	EPSRC	Human-agent collectives: From foundations to applications (ORCHID) Winner of The Engineer's "Collaborate to Innovate" Award (2016).	T. Rodden, A. Rogers, L. Moreau, S. Roberts	6470k
12-16	EPSRC	Distributed sensing, control and decision making in multi-agent autonomous systems	S. Veres, A. Rogers, E. Rogers, J. Scanlan	1316k
13-16	EPSRC	International centre for infrastructure futures	B. Collins, S. Ramchurn, B. Bahaj	322k
10-13	EPSRC	Intelligent agents for home energy management	A. Rogers, N. Stanton, B. Bahaj	813k
09-14	Secure Meters Ltd	Intelligent decentralised energy-aware systems	A. Rogers	1500k
08-10	Systems Engineering for Autonomous Systems Defence Technology Centre	Control and management of mobile sensors	A. Rogers & S. Roberts	367k
05-11	EPSRC / BAE Systems	Autonomous learning agents in decentralised data and information networks Winner BAE Chairman's Awards for "Innovation" (2008) and "Enhancing Customer Performance" (2009). Winner of The Engineer award for "Best Defence and Aerospace Project" (2009).	Univs Oxford, Bristol & Imperial, BAE Systems	5470k
04-10	EPSRC	Market-based control of complex computational systems	Univs. Liverpool & Birmingham, HP, BT & BAE	689k
08-09	EPSRC	Autonomic supply chains in computational economies	A. Rogers & D. MacBeth	120k
06-09	Data & Information Fusion Defence Technology Centre	Adaptive energy-aware sensor networks	A. Rogers & N. White	508k
06-09	Data & Information Fusion Defence Technology Centre	Self-organising multi-agent systems	General Dynamics, BT, QinetiQ, Imperial College	404k
02-08	DTI / EPSRC / MoD	Decentralised data fusion Winner of The Engineer's Large Company / University Collaboration Award (2007).	Univ. Oxford, QinetiQ, BAE Systems & Rolls Royce	436k
04-07	EPSRC	Virtual organisations for eScience	Univ. Liverpool	259k
04-06	EPSRC	Southampton / Chicago Grid activity	L Moreau, D de Roure and I. Foster	40k
03-06	BAE Systems	Engineering practical multi-agent systems using game theory		73k

03-06	Data & Information Fusion Defence Technology Centre	Agent-based control systems		463k
03-06	EPSRC / DTI	Trust & reputation in Grid applications	M. Luck	124k
02-05	EPSRC	Argumentation and social influence	Univs of Aberdeen & Dundee	69k
00-05	Mobile virtual centre of excellence	Agents in future generation mobile communication systems (MobileVCE)	Many universities and industrial partners	421k
01-05	EPSRC	Mobile handsets in cooperative agent networks	D. de Roure & L. Moreau	214k
00-04	BT Research	Coalition formation for virtual organisations		138k
00-04	EPSRC / QinetiQ	Mobile agents negotiating for itinerant users in a distributed enterprise	D. de Roure, W. Hall, & L. Moreau	263k
03-04	EPSRC	Adaptive divide and conquer	Univs of Liverpool, Sheffield Birmingham, & Nottingham	60k
00-03	EU	Network of excellence on agent-based computing	M. Luck	502k
00-03	HP Research Labs	Knowledge acquisition for negotiating agents	N. Shadbolt	153k
01-03	EU	Managing intrusiveness in pervasive environments	D. de Roure, M. Luck & L. Moreau	187k
98-02	EPSRC	Practical negotiation for electronic commerce	K. Binmore & M. Wooldridge	163k
98-01	DERA	Team-oriented problem solving		98k
98-00	Marconi Comms Systems	Information brokerage		120k
96-00	Nortel Networks	Negotiating agents for telecommunications		150k
97-00	EPSRC	Agent-based connection admission control	L. Cuthbert & J. Griffiths	128k
96-99	EPSRC	Using agents in a virtual laboratory	Univs Durham & Strathclyde	164k
96-99	EPSRC	Practical rationality in resource bounded agents	J. Bell	162k
95-98	BT Research	Negotiating agents for e-commerce applications		45k
96-97	BHP	Feature extraction from large scientific data sets		12k
94-97	DTI / EPSRC	Agent-based business process management	BT, ICI & Univ. Loughborough	220k
94-95	JRC ISPRA	Information economies for sharing earth observation data		10k

Patents

- US patent for negotiation technology with co-inventors at Variab.ly
- European patent for decentralised coordination with co-inventors at BAE Systems
- European and Canadian patent for flexible agent based negotiators with co-inventors at Nortel Networks
- European, US & Japanese patent for autonomous agent architecture with co-inventors at ZUNO
- European and US patent for intelligent agents in business process management with co-inventors at BT Research Labs, ICI Engineering and Loughborough University

Conference Leadership and Participation

- Co-initiator and conference co-chair of 1st Int. Conf. on the Practical Applications of Intelligent Agents and Multi-Agent Systems (1996)
- Co-initiator and conference co-chair for ACM's 1st Int. Conf. on Autonomous Agents (1997)
- Co-initiator Int. Workshop on Agent Theories, Architectures and Languages series. Co-chair 1st (1994), 2nd (1995), 3rd (1996) and 6th (1999) workshops
- Co-initiator and co-organiser of UK Special Interest Group on Multi-Agent Systems (UKMAS) (1996-2000)
- Program co-chair 3rd Int. Conf. on Multi-Agent Systems (1998)
- General co-chair 3rd Int. Joint Conf. on Autonomous Agents and Multi-Agent Systems (2004)
- Selected keynote and major presentations:
 - Scientific Discourse, Royal Institution (London, UK) 6/17
 - Ideas Lab, World Economic Forum (Davos, Switzerland) 1/17

- 7th Int. Conf. on Agents and AI (Lisbon, Portugal) 1/15
 - 3rd Int. Conf. on Computational Sustainability (Copenhagen, Denmark) 7/12
 - 1st Abe Mamdani Memorial Lecture (London, UK) 2/12
 - 1st Patterson Lecture (Warwick, UK) 1/12
 - 1st Int. W. on Uncertainty Reasoning and Multi-Agent Systems for Sensor Networks (Belfast, Northern Ireland) 6/11
 - 3rd Int. Symposium on Intelligent Distributed Computing (Ayia Napa, Cyprus) 10/09
 - The BCS Computer Journal Lecture (London, UK) 6/09
 - 1st Int. Conf. on Visions of Computer Science (London, UK) 9/08
 - 22nd Int. Sym. on Computer and Information Science (Ankara, Turkey) 11/07
 - 8th Int. Conf. on Business Information Systems (Karlsruhe, Germany) 03/07
 - 33rd Int. Conf. on Current Trends in Theory and Practice of Computer Science (Horrachov, Czech Republic) 01/07
 - 18th Belgium-Dutch Conf. on AI (Namur, Belgium) 10/06
 - 5th IEEE/WIC/ACM Int. J. Conf. on Web Intelligence and Intelligent Agent Technology (Compiègne, France) 9/05
 - 1st Int. Workshop on Autonomous Intelligent Systems (St. Petersburg, Russia) 6/05
 - PriceWaterhouseCoopers E-Business Lect. (Leuven, Belgium) 4/05
 - Int. Workshop on Intelligent Information Management Systems (Shanghai, China) 3/05
 - 2nd Int. Conf. on AI in Engineering and Technology (Kota Kinabalu, Malaysia) 8/04
 - 1st Int. Conf. on Autonomic Computing (New York, USA) 5/04
 - The BCS Sidney Michaelson Memorial Lecture (Edinburgh, UK) 4/04
 - German Nat. Conf. on AI (Hamburg, Germany) 9/03
 - 2nd Int. Conf. on Autonomous Agents & Multi-Agent Systems (Melbourne, Australia) 7/03 [*ACM Autonomous Agents Research Award Lecture*]
 - Int. Conf. on Intelligent Information Technology (Beijing, China) 9/02
 - IFIP Intelligent Information Processing Conf. (Montreal, Canada) 8/02
 - 2nd Multiagent Systems Workshop of Central & Eastern Europe (Krakow, Poland) 9/01
 - 4th Pacific Rim Int. Workshop on Multi-Agent Systems (Taipei, Taiwan) 7/01
 - 2nd Int. Conf. on Intelligent Data Engineering (Shatin, Hong Kong) 12/00
 - 16th ACM Conf. on Object-Oriented Programming, Systems, Languages, & Applications (Minneapolis, USA) 10/00
 - 6th Pacific Rim Conf. on AI (Melbourne, Australia) 9/00
 - 1st Int. Workshop on Group Decision and Negotiation (Glasgow, UK) 7/00
 - 15th European Conf. on Cybernetics and Systems Research (Vienna, Austria) 4/00
 - 5th Int. Conf. on Practical Aspects of Agents & Multiagent Systems (Manchester, UK) 4/00
 - 18th Humphrey Davis Lecture (London, UK) 3/00
 - Distinguished Lecture Series in Software Engineering (Austin, USA) 2/00
 - 19th Int. Conf. on Expert Systems and Applied AI (Cambridge, UK) 12/99
 - 4th Int. Conf. on Cooperative Information Systems (Edinburgh, UK) 9/99
 - 16th Int. J. Conf. on AI (Stockholm, Sweden) 8/99 [*Computers and Thought Lecture*]
 - 9th European Workshop on Multi-Agent Systems (Valencia, Spain) 6/99
 - 12th Int. Conf. on Industrial and Engineering Applications of AI (Cairo, Egypt) 6/99
 - 1st Catalanian Conf. on Artificial Intelligence (Taragona, Spain) 10/98
 - European IT Conf. (Brussels, Belgium) 11/97
 - 5th Int. Conf. on Cognitive Science (San Sebastian, Spain) 7/97
 - 1st Int. Conf. on Practical Aspects of Agents & Multi-Agent Systems (London, UK) 4/96
 - 1st Int. Conf. on Multi-Agent Systems (San Francisco, USA) 6/95
 - 2nd Int. Conf. on Cooperating Knowledge Based Systems (Keele, UK) 6/94
 - Int. Conf. on Solving Complex Problems with Agent Systems (Bielefeld, Germany) 2/94
 - 1st Int. Workshop on Cooperative Knowledge Processing (Trento, Italy) 6/91
- Member steering committees for: Int. Workshop on Agent Theories, Architectures and Languages (ATAL) (1994-2007; chair: 2004-2007); Int. Conf. on Autonomous Agents (1997-2006); Int. Conf. on Multi-Agent Systems (ICMAS) (1996-98); European Workshop on Multi-Agent Systems (1997-2001); Int. Conf. on Electronic Commerce (2003); and UK Workshop on Multi-Agent Systems (1996-2003)
 - Co-organiser OOPSLA Workshop on Agent Oriented Methodologies (2002), IJCAI Workshop on AI and Autonomic Computing (2003), AAMAS Workshop on Smart Grid Technologies (2005), AAMAS Workshop on

Defence Applications of Multi-Agent Systems (2005), Fusion Workshop on Autonomous Agents for Data and Information Fusion (2006), AAMAS Workshop on Applications of Agent Technology to Disaster Management (2006), Dagstuhl on Negotiation and Market Engineering (2006), AAMAS Workshop on Optimisation in Multi-Agent Systems (2008 and 2009)

- Programme or Senior Programme committee [SPC] member: Autonomous Agents and Multi-Agent Systems (AAMAS) (02 [SPC], 03 [SPC], 05 [SPC]; 07 [SPC]; 08 [SPC]; 09, 10 [SPC]); Int. Conf. on Multi-Agent Systems (95, 96, 98, 00: all); Autonomous Agents (97, 98, 99 [SPC], 00 [SPC], 01 [SPC]: all); Agent Theories, Architectures and Languages (94, 95, 96, 97, 98, 99, 00, 01: all); Practical Applications of Agents and Multi-agent Systems (96, 97, 98, 99); Association for Advancement of AI (AAAI) (98, 07, 08, 10 [SPC]); European Workshop on Multi-Agent Systems (97, 98, 99, 00, 01); Australian Distributed AI Workshop (95, 96); Agent-Mediated Electronic Commerce (98, 99, 00, 02, 03, 04, 05); Agent Oriented Software Engineering (00, 01, 02, 03); Intelligent Agents for Telecoms Applications (96, 97, 98); Int. Semantic Web Conf. (02); World Wide Web Conf. (03, 06); Automated Planning and Scheduling (03); ACM E-Commerce Conf. (04, 07, 09, 10 [SPC]); Autonomic Computing (04, 05); European Conf. on AI (00 [SPC], 06)

Service to Journals and Grant Awarding Bodies

- Founding editor-in-chief of the Int. Journal of Autonomous Agents and Multi-Agent Systems. [First journal in this area; 1998-2002]
- Editorial board member of: J. of Computer Science and Technology (2004-08), Int. J. of Autonomous Agents and Multi-Agent Systems (2003-13), ACM Trans. on Internet Technology (2003-09), Computational Intelligence (2003-09), Int. J. of Applied Logic (2003-11), Int. J. of Electronic Commerce Research (2002-10), Int. J. of Web Semantics (2002-10), J. of Logic and Computation (1998-11), Int. J. of AI Communications (1996-04), The Knowledge Engineering Review (1994-08), and the AISB Journal (2004-05)
- Referee for following international journals: ACM Computing Surveys, ACM Trans. on Internet Technology, ACM Trans. on Software Engineering and Methodology, Acta Informatica, Artificial Intelligence, AI Review, AI and Law, Chemical Engineering Communications, Comms. of the ACM, The Computer Journal, Computational Intelligence, Concurrent Engineering Research and Applications, Decision Support Systems, Electronic Commerce Research Journal, Int. J. Man-Machine Studies, IEE Proc. on Software, IEE Proc. on Distributed Systems Engineering, IEE Electronics Letters, IEEE Intelligent Systems, IEEE Journal on Selected Areas of Communications, IEEE Internet Computing, IEEE Trans. on Systems Man and Cybernetics, IEEE Trans. on Data and Knowledge Engineering, IEEE Spectrum, IEEE Trans. on Robotics and Automation, Information Fusion Journal, Intelligent and Cooperative Information Systems, Intelligent Systems Engineering, Journal of the ACM, Journal of AI Research, Journal of Web Semantics, Machine Learning Journal, Pervasive and Mobile Computing, Software Practice and Experience, User Modelling and User-Adaptation Interaction
- Grant evaluator: Engineering and Physical Sciences Research Council; Biotechnology and Biological Sciences Research Council; Economic and Social Research Council; Natural Environment Research Council; Medical Research Council; European Research Council; Fulbright Scholarship Program; Oxford Martin School, The Leverhulme Trust; The Nuffield Foundation; The Royal Academy of Engineering; The Royal Society; The British Academy; The Royal Irish Academy; The European Science Foundation; The (US) National Science Foundation; The (US) Department of Homeland Security; The Netherlands Computer Science Research Foundation; The Australian Research Council; Science Foundation Ireland; The Swiss National Science Foundation; The Norwegian Research Council; The Research Council of Canada; The Polish Science Foundation, The Welsh Government, and The Israel Science Foundation

III. POLICY AND ADVISORY ROLES

As the UK Government's Chief Scientific Advisor (CSA) for National Security, I worked with a range of departments and agencies both in the UK and abroad. I was responsible for scientists and engineers who work in the natural, physical, information and social sciences, and championed science at board level. My team responded to urgent operational situations and delivered new capabilities that helped keep the country safe and secure. I devised and deployed new mechanisms for delivering innovative technologies in partnership with academia, government labs

and a range of companies (both large and small). I was the inaugural post holder and created this multi-agency section from scratch.

I also worked closely with two Government CSAs, Sir Mark Walport and Sir John Beddington, as a member of the network of departmental CSAs that provide scientific advice to government.

Scientific Policy

- Government Office of Science:
 - Foresight panel member on: Cognitive Systems (2003), CyberTrust (2003), Intelligent Infrastructure Systems (2004) and The Future of Identity (2013)
 - Blakett review team member on: Cybersecurity (2010), Low Probability High Impact Events (2011), Wide-Area Biological Detection (2013), Internet of Things (2014), and Influence and Persuasion (2016)
 - Technology and Innovation Futures working group (2015-16)
 - Several Departmental Science and Engineering reviews, including Ministry of Defence and DSTL
- Reports:
 - Prime Minister's Council for Science and Technology (2013) "The age of algorithms" that led to the creation of the Alan Turing Institute
 - Royal Academy of Engineering (2015) "Connecting data: driving productivity and innovation"
 - House of Commons Science & Technology Committee (2016) "Robotics and artificial intelligence"
 - Royal Society (2017) "Machine learning: the power and promise of computers that learn by example"
 - Defence and Security Accelerator (2017) "Future technology trends in security"
- Contributions to Green and White papers, including: National Security Strategy and Strategic Defence and Security Review (2015), National Security through Technology (2012), The UK Cyber Security Strategy (2011), and Securing Britain in an Age of Uncertainty (2010)
- Contributions to the National Risk Register, leading the cyber risks group (2013-)

Advisory Roles

- National Security Council: Science and Technology Committee (2013-)
- Several Science Advisory Committees in the National Security area (2010-)
- Royal Academy of Engineering:
 - MacRobert Award Committee (2017-)
 - Engineering Policy Committee (2016-)
 - Research and Secondments Committee (2008-11)
 - Membership Panel (2008-11)
 - Industrial Secondment Scheme (Chair: 2008-2010)
- Newton Prize Committee (2017-)
- Royal Society: University Research Fellows Appointment Panel (2009-2013)
- European Research Council: Informatics Panel for Advanced Fellowships (2008-12)
- RCUK Global Uncertainties Programme: Strategic assessor (2012-13)
- IEE: IT Sector Panel (2002-2006)
- European Network of Excellence in Agent-Based Computing: Management Board (1999-2002)
- Defence Scientific Advisory Council: Register of independent members (1997-)
- EPSRC: Information Technology Computing College (1997-2015)
- UK Computing Research Committee: Member (2004-); Membership Committee (2007-10)
- Advisory boards for:
 - BAE Systems Technology Foresight (2016-)
 - RCUK Partnership for Conflict, Crime and Security Research programme (2013-16)
 - EPSRC Autonomous and Intelligent Systems programme (2012-2016)
 - Southampton University Academic Centre of Excellence in Cyber Security Research (2012-16)
 - Imperial College Institute for Security Science and Technology (2011-16)
 - UK National Research and Training Initiative in Large-Scale Complex IT Systems (2007-12)

- Web Science Research Initiative (2006-10)
- Defence Technology Centre on Systems Engineering and Integrated Systems (2005-08)
- IBM Autonomic Computing Initiative (2002-05)
- German Research Centre for AI (DFKI) (2000-2012)

IV. UNIVERSITY LEADERSHIP

At Imperial, I am responsible for developing and delivering the College's research and enterprise strategy and for enhancing the quality, impact, management and delivery of research. The College has 1500 academic staff, 2500 research staff and 3500 PhD students. The total research budget is £475 million and this includes engagement with 500+ corporate partners. Our overarching aim is to achieve enduring excellence for the benefit of society. Key areas of focus include: nurturing research talent; sustaining world-class core academic disciplines; fostering multidisciplinary research; ensuring our research informs, influences and impacts; and establishing effective partnerships. To enable this, we need to have world-class research facilities and infrastructure, a vibrant and healthy research environment and adequate research funding.

Imperial College

2016- Vice Provost for Research and Enterprise
 2016- President's Board
 2016- Provost's Board

University of Southampton

2015-16 Head of the Electronics and Computer Science Department (110 academics, 1500 students)
 2011-15 Founding Head of the Agents, Interaction and Complexity Research Group (14 academics, 50 RFs and PhD students)
 2008-10 Associate Dean (Research and Enterprise) for Faculty of Engineering, Science and Mathematics
 2008-10 University's Research and Enterprise Leadership Group
 2008-10 Chair Faculty Research and Enterprise Committee
 2008-10 Faculty Strategy and Policy Committee
 2008-10 Member of Senate
 2007 Responsible for Computer Science RAE return (outcome: rated joint second in terms of GPA)
 2007-10 University's Knowledge Creation and Transfer Management Board
 2004-07 Advisory Panel for University's Research Support Office
 2003-08 Deputy Head of School (Research)
 2001-08 Chair School's Research Committee
 2001-11 Head Intelligence, Agents, Multimedia Research Group (18 academics, 100 RFs and PhD students)
 2001 Responsible for Computer Science RAE return (outcome: move from 5 to 5*)

Queen Mary University of London

1995-99 Head of the Intelligent Systems Research Group (4 academics, 12 RFs and PhD students)

V. EDUCATION

Courses taught (responsible for course design and delivery): *Programming Fundamentals* introduced principles behind production of quality software and the Pascal programming language (year 1); *Programming Languages* detailed the key structures present in modern high-level programming languages (year 2); *Data Structures* explored the use and development of data structures in programming systems (year 2); *Information Systems Design* covered a broad range of topics related to the design and implementation of distributed information systems (years 3 and 4); *Artificial Intelligence* covered the theories and principles behind the design of intelligent systems (years 3 and 4); *Network Programming* introduced basic concepts of programming for the Internet (year 2); *Intelligent Agents* advanced topics in multiagent systems (years 3 and 4); *E-Business Techniques* advanced information processing techniques for E-Business applications and electronic marketplaces (years 3 and 4). Also taught on the *Software Engineering* and *Human Computer Interaction*

modules of the British Telecom MSc (coordinated by the University of London and attended by BT employees). Supervised numerous final year and MSc projects

Examination duties: External examiner for University of Edinburgh MSc in Artificial Intelligence (1999-02). External examiner for Computer Science Undergraduate Degrees at Universities of York (03-05), Sabah (Malaysia) (04-06), Bath (06-08) and Etisalat (UAE) (05-07). PhD examiner at Universities of: Aberdeen, Hebrew University (Israel), Edinburgh, Essex, EPFL (Switzerland), Imperial College, Loughborough, Mannheim (Germany), Maastricht (Netherlands), Queensland Univ. of Technology (Australia), Queen Mary, Southampton, Strathclyde, Surrey, Swinburne Univ. of Technology (Australia), Sydney (Australia), Technical Univ. of Eindhoven (Netherlands), University College Dublin, UCL, Universitat Autònoma de Barcelona (Spain), Universitat Politècnica de Catalunya (Spain), Warwick, Westminster

VI. PUBLICATIONS

BOOKS

1. H. Gimpel, **N. R. Jennings**, G. E. Kersten, A. Okenfels and C. Weinhardt (eds.) (2008) *"Negotiation, auctions and market engineering"* Springer.
2. S. Bussmann, **N. R. Jennings** and M. Wooldridge (2004) *"Multiagent systems for manufacturing control: A design methodology"* Series on Agent Technology, Springer.
3. **N. R. Jennings** and Y. Lesperance (eds.) (2000) *"Intelligent agents VI"* Springer.
4. **N. R. Jennings** and M. Wooldridge (eds.) (1998) *"Agent technology: foundations, applications and markets"* Springer.
5. J. P. Müller, M. Wooldridge and **N. R. Jennings** (eds.) (1997) *"Intelligent agents III"* Springer.
6. G. M. P. O'Hare and **N. R. Jennings** (eds.) (1996) *"Foundations of distributed artificial intelligence"* John Wiley & Sons.
7. M. J. Wooldridge and **N. R. Jennings** (eds.) (1995) *"Intelligent agents"* Springer.
8. **N. R. Jennings** (1994) *"Cooperation in industrial multi-agent systems"* World Scientific Publishing.

JOURNALS

1. V. Robu, M. Vinyals, A. Rogers and **N. R. Jennings** (2018) "Efficient buyer groups with prediction-of-use electricity tariffs" *IEEE Trans on Smart Grids*.
2. Z. Beck, W. T. L Teacy, A. Rogers and **N. R. Jennings** (2018) "Collaborative online planning for automated victim search in disaster response applications" *Robotics and Autonomous Systems*.
3. R. T. Pruna, M. Polukarov and **N. R. Jennings** (2018) "Avoiding regret in an agent-based asset pricing model" *Finance Research Letters*.
4. R. Meir, M. Polukarov, J. S. Rosenschein and **N. R. Jennings** (2017) "Acyclic games and iterative voting" *Artificial Intelligence* **252** 100-122.
5. S. Stein, E. H. Gerding, A. Nedeia, A. Rosenfeld and **N. R. Jennings** (2017) "Market interfaces for electric vehicle charging" *Journal of AI Research* **59** 175-227.
6. A. A Panagopoulos, S. Maleki, M. Venanzi, A. Rogers and **N. R. Jennings** (2017) "Advanced economic control of electricity-based space heating systems in domestic coalitions with shared intermittent energy resources" *ACM Trans. on Intelligent Systems and Technology* **8** (4) 59.1-59.27.
7. S. D. Ramchurn, T. D. Huynh, Y. Ikuno, J. Flann, L. Moreau, **N. R. Jennings**, J. E. Fischer, W. Jiang, T. Rodden, E. Simpson, S. Reece, S. J. Roberts and F. Wu (2016) "HAC-ER: A disaster response system based on human-agent collectives" *Journal of AI Research* **57** 661-708.
8. V. Robu, G. Chalkiadakis, R. Kota, A. Rogers and **N. R. Jennings** (2016) "Rewarding cooperative virtual power plant formation using scoring rules" *Energy* **117** (1) 19-28.
9. A. Alan, E. Costanza, S. D. Ramchurn, J. Fischer, T. Rodden and **N. R. Jennings** (2016) "Tariff Agent: Interacting with a future smart energy system at home" *ACM Trans. on Computer-Human Interaction* **23** (4) 25.1-25.28.

10. M. Venanzi, J. Guiver, P. Kohli and **N. R. Jennings**, (2016) "Time-sensitive Bayesian aggregation for crowdsourcing" *Journal of AI Research* **56** 517-545.
11. B. Shi, E. H. Gerding and **N. R. Jennings** (2016) "An equilibrium analysis of trading across multiple double auction marketplaces using fictitious play" *Electronic Commerce Research and Applications* **17** (3) 134-149.
12. S. D. Ramchurn, F. Wu, J. Fischer, S. Reece, W. Jiang, S. J. Roberts, T. Rodden and **N. R. Jennings** (2016) "Human-agent collaboration for disaster response" *Journal of Autonomous Agents and Multi-Agent Systems* **30** (1) 82-111.
13. M de Weerd, E. H. Gerding, S. Stein, V. Robu and **N. R. Jennings** (2015) "Intention-aware routing of electric vehicles" *IEEE Trans. on Intelligent Transportation Systems* **17** (5) 1472-1482.
14. T. Rahwan, T. Michalak, E. Elkind, M. Wooldridge and **N. R. Jennings** (2015) "A hybrid exact algorithm for complete set partitioning" *Artificial Intelligence* **230** 14-50.
15. T. Rahwan, T. P. Michalak, M. Wooldridge and **N. R. Jennings** (2015) "Coalition structure generation" *Artificial Intelligence* **229** 139-174.
16. S. Ghosh, S. Reece, A. Rogers, S. J. Roberts, A. Malibari and **N. R. Jennings** (2015) "Modelling the thermal dynamics of buildings: a latent force model approach" *ACM Trans. on Intelligent Systems and Technology* **6** (1) 7.1-7.27.
17. T. Michalak, P. Szczepanski, T. Rahwan, A. Chrobak, S. Brânzei, M. Wooldridge and **N. R. Jennings** (2014) "Implementation and computation of a value for generalized characteristic function games" *ACM Trans on Economics and Computation* **2** (4) 16.1-16.35.
18. **N. R. Jennings**, L. Moreau, D. Nicholson, S. Ramchurn, S. Roberts, T. Rodden and A. Rogers (2014) "On human-agent collectives" *Communications of ACM* **57** (12) 80-88.
19. V. Naroditskiy, **N. R. Jennings**, P. van Hentenryck and M. Cebrian (2014) "Crowdsourcing contest dilemma" *Royal Society Interface* **11** (99) 20140532.
20. S. Reece, S. J. Roberts, S. Ghosh, A. Rogers and **N. R. Jennings** (2014) "Efficient state-space inference of periodic latent force models" *Journal of Machine Learning Research* **15** 2337-2397.
21. F. Biermann, V. Naroditskiy, T. D. Nguyen, M. Polukarov, A. Rogers and **N. R. Jennings** (2014) "Task assignment with controlled and autonomous agents" *Mathematical Social Sciences* **71** 116-121.
22. G. de Clippel, V. Naroditskiy, M. Polukarov, A. Greenwald and **N. R. Jennings** (2014) "Destroy to save" *Games and Economic Behaviour* **86** 392-404.
23. L. Tran-Thanh, S. Stein, A. Rogers and **N. R. Jennings** (2014) "Efficient crowdsourcing of unknown experts using multi-armed bandits" *Artificial Intelligence* **214** 89-111.
24. A. C. Chapman, D. S. Leslie, A. Rogers and **N. R. Jennings** (2014) "Learning in unknown reward games: application to sensor networks" *The Computer Journal* **57** (6) 875-892.
25. M. Vinyals, K. S. Macarthur, A. Farinelli, S. D. Ramchurn and **N. R. Jennings** (2014) "A message-passing approach to decentralised parallel machine scheduling" *The Computer Journal* **57** (6) 856-874.
26. A. Farinelli, A. Rogers and **N. R. Jennings** (2014) "Agent-based decentralised coordination for sensor networks using the max-sum algorithm" *Journal of Autonomous Agents and Multi-Agent Systems* **28** (3) 337-380.
27. J. McInerney, S. Stein, A. Rogers and **N. R. Jennings** (2013) "Breaking the habit: Measuring and predicting departures from routine in individual human mobility" *Pervasive and Mobile Computing* **9** (6) 808-822.
28. V. Robu, E. H. Gerding, S. Stein, D. C. Parkes, A. Rogers and **N. R. Jennings** (2013) "An online mechanism for multi-unit demand and its application to plug-in hybrid electric vehicle charging" *Journal of AI Research* **48** 175-230.
29. A. Rutherford, M. Cebrian, I. Rahwan, S. DSouza, J. McInerney, V. Naroditskiy, M. Venanzi, **N. R. Jennings**, J. R. de Lara, E. Wahlstedt and S. U. Miller (2013) "Targeted social mobilization in a global manhunt" *PLoS ONE* **8** (9) e74628.
30. M. Vasirani, R. Kota, R. L. G. Cavalcante, S. Ossowski and **N. R. Jennings** (2013) "An agent-based approach to virtual power plants of wind generators and electric vehicles" *IEEE Trans on Smart Grids* **4** (3) 1314-1322.
31. A. C. Chapman, D. S. Leslie, A. Rogers and **N. R. Jennings** (2013) "Convergent learning algorithms for unknown reward games" *SIAM J. of Control and Optimisation* **51** (4) 3154-3180
32. T. Baarslag, K. Fujita, E. H. Gerding, K. Hindriks, T. Ito, **N. R. Jennings**, C. Jonker, S. Kraus, R. Lin, V. Robu and C. R. Williams (2013) "Evaluating practical negotiating agents: Results and analysis of the 2011 international competition" *Artificial Intelligence* **198** 73-103.
33. T. P. Michalak K. V. Aadithya, P. L. Szczepanski, B. Ravindran and **N. R. Jennings** (2013) "Efficient computation of the Shapley value for game-theoretic network centrality" *Journal of AI Research* **46** 607-650.

34. I. Rahwan, S. DSouza, A. Rutherford, V. Naroditskiy, J. McInerney, M. Venanzi, **N. R. Jennings** and M. Cebrian (2013) "Global manhunt pushes the limits of social mobilisation" *IEEE Computer* **46** (4) 68-75.
35. R. Stranders, E. Munoz de Cote, A. Rogers and **N. R. Jennings** (2013) "Near-optimal continuous patrolling with teams of mobile information gathering agents" *Artificial Intelligence* **195** 63-105.
36. Z. Rabinovich, V. Naroditskiy, E. H. Gerding and **N. R. Jennings** (2013) "Computing pure Bayesian Nash equilibria in games with finite actions and continuous types" *Artificial Intelligence* **195** 106-139.
37. B. Shi, E. H. Gerding, P. Vytelingum and **N. R. Jennings** (2013) "An equilibrium analysis of market selection strategies and fee strategies in competing double auction marketplaces" *Journal of Autonomous Agents and Multi-Agent Systems* **26** (2) 245-287.
38. V. Naroditskiy, M. Polukarov and **N. R. Jennings** (2013) "Optimal payments in dominant strategy mechanisms for single-parameter domains" *ACM Trans on Economics and Computation* **1** (1) 4.1-4.21.
39. M. A. Osborne, S. J. Roberts, A. Rogers and **N. R. Jennings** (2012) "Real-time information processing of environmental sensor network data using Bayesian Gaussian processes" *ACM Trans on Sensor Networks* **9** (1) 1.1-1.32.
40. S. S. Fatima, M. Wooldridge and **N. R. Jennings** (2012) "A heuristic approximation method for the Banzhaf index for voting games" *Int. Journal of Multi-Agent and Grid Systems* **8** (3) 257-274.
41. V. Naroditskiy, I. Rahwan, M. Cebrian and **N. R. Jennings** (2012) "Verification in referral-based crowdsourcing" *PLoS ONE* **7** (10) e45924. [doi:10.1371/journal.pone.0045924]
42. T. Voice, M. Polukarov and **N. R. Jennings** (2012) "Graph coalition structure generation" *Journal of AI Research* **45** 165-196.
43. W. T. L. Teacy, **N. R. Jennings**, A. Rogers and M. Luck (2012) "A hierarchical Bayesian trust model based on reputation and group behaviour" *Artificial Intelligence* **193** 149-185.
44. R. Kota, N. Gibbins and **N. R. Jennings** (2012) "Decentralised approaches for self-organising agent systems" *ACM Trans on Autonomous and Adaptive Systems* **7** (1) 1.1-1.28.
45. T. Rahwan, T. Michalak, M. Wooldridge and **N. R. Jennings** (2012) "Anytime coalition structure generation in multi-agent systems with positive or negative externalities" *Artificial Intelligence* **186** 95-122.
46. L. Tran-Thanh, A. Rogers and **N. R. Jennings** (2012) "Long-term information collection with energy harvesting wireless sensors: A multi-armed bandit based approach" *Journal of Autonomous Agents and Multi-Agent Systems* **25** (2) 352-394.
47. S. D. Ramchurn, P. Vytelingum, A. Rogers and **N. R. Jennings** (2012) "Putting the 'smarts' into the smart grid: A grand challenge for artificial intelligence" *Comms of the ACM* **55** (4) 86-97.
48. X. Luo, C. Miao, **N. R. Jennings**, M. He and Z. Shen (2012) "KEMNAD: A knowledge engineering methodology for negotiating agent development" *Computational Intelligence* **28** (1) 51-105.
49. P. Vytelingum, T. D. Voice, S. D. Ramchurn, A. Rogers and **N. R. Jennings** (2011) "Theoretical and practical foundations of large-scale agent-based micro-storage in the smart grid" *Journal of AI Research* **42** 765-813. [Honourable mention for the 2016 IJCAI-JAIR best paper prize]
50. A. C. Chapman, A. C. Rogers, D. S. Leslie and **N. R. Jennings** (2011) "A unifying framework for iterative approximate best response algorithms for distributed constraint optimisation problems" *The Knowledge Engineering Review* **26** (4) 411-444.
51. S. Stein, E. Gerding, A. Rogers, K. Larson and **N. R. Jennings** (2011) "Algorithms and mechanisms for procuring services with uncertain durations using redundancy" *Artificial Intelligence* **175** 2021-2060.
52. R. Cavalcante, A. Rogers, I. Yamada and **N. R. Jennings** (2011) "Distributed asymptotic minimization of sequences of convex functions by a broadcast adaptive subgradient method" *IEEE J. of Selected Topics in Signal Processing* **5** (4) 739-753.
53. S. D. Ramchurn, P. Vytelingum, A. Rogers and **N. R. Jennings** (2011) "Agent-based homeostatic control for green energy in the smart grid" *ACM Trans. on Intelligent Systems and Technology* **2** (4) 35.1-35.28
54. S. Stein, T. R. Payne and **N. R. Jennings** (2011) "Robust execution of service workflows using redundancy and advance reservations" *IEEE Trans. on Services Computing* **4** (2) 125-139.
55. A. C. Chapman, A. Rogers and **N. R. Jennings** (2011) "Benchmarking hybrid algorithms for distributed constraint optimisation games" *Journal of Autonomous Agents and Multi-Agent Systems* **22** (3) 385-414.
56. A. Rogers, A. Farinelli, R. Stranders and **N. R. Jennings** (2011) "Bounded approximate decentralised coordination via the max-sum algorithm" *Artificial Intelligence* **175** (2) 730-759
57. A. Papakonstantinou, A. Rogers, E. H. Gerding and **N. R. Jennings** (2011) "Mechanism design for the truthful elicitation of costly probabilistic estimates in distributed information systems" *Artificial Intelligence* **175** (2) 648-672.
58. S. S. Fatima, M. Wooldridge and **N. R. Jennings** (2010) "Sequential auctions for common value objects with budget constrained bidders" *Int. J of Multiagent and Grid Systems* **6** (5) 403-414.

59. A. C. Chapman, R. A. Micillo, R. Kota and **N. R. Jennings** (2010) "Decentralised dynamic task allocation using overlapping potential games" *The Computer Journal* **53** (9) 1462-1477.
60. S. D. Ramchurn, A. Farinelli, K. S. Macarthur, M. Polukarov and **N. R. Jennings** (2010) "Decentralised coordination in RoboCup rescue" *The Computer Journal* **53** (9) 1447-1461.
61. J. Kho, L. Tran-Thanh, A. Rogers and **N. R. Jennings** (2010) "An agent-based distributed coordination mechanism for wireless visual sensor nodes using dynamic programming" *The Computer Journal* **53** (8) 1277-1290.
62. G. Chalkiadakis, E. Elkind, E. Markakis, M. Polukarov and **N. R. Jennings** (2010) "Cooperative games with overlapping coalitions" *Journal of AI Research* **39** 179-216.
63. Z. Rabinovich and **N. R. Jennings** (2010) "A hybrid controller based on the egocentric perceptual principle" *Robotics and Autonomous Systems* **58** (9) 1039-1048.
64. I. A. Vetsikas and **N. R. Jennings** (2010) "Bidding strategies for realistic multi-unit sealed bid auctions" *Journal of Autonomous Agents and Multi-Agent Systems* **21** (2) 265-291.
65. P. Padhy, R. K. Dash, K. Martinez and **N. R. Jennings** (2010) "A utility-based adaptive sensing and multi-hop communication protocol for wireless sensor networks" *ACM Trans. on Sensor Networks* **6** (3), 27.1-27.39.
66. T. Rahwan, S. D. Ramchurn, A. Giovannucci and **N. R. Jennings** (2009) "An anytime algorithm for optimal coalition structure generation" *Journal of AI Research* **34** 521-567.
67. N. C. Karunatillake, **N. R. Jennings**, I. Rahwan and P. McBurney (2009) "Dialogue games that agents play within a society" *Artificial Intelligence* **173** (9-10) 935-981.
68. S. D. Ramchurn, R. K. Dash, A. Giovannucci, J. Rodriguez-Aguilar, C. Mezzetti and **N. R. Jennings** (2009) "Trust-based mechanisms for robust and efficient task allocation in the presence of execution uncertainty" *Journal of AI Research* **35** 119-159.
69. S. Stein, T. R. Payne and **N. R. Jennings** (2009) "Flexible provisioning of web service workflows" *ACM Trans on Internet Technology* **9** (1) 2.1-2.45.
70. A. Rogers, D. D. Corkill and **N. R. Jennings** (2009) "Agent technologies for sensor networks" *IEEE Intelligent Systems* **24** (2) 13-17.
71. S. Stein, T. R. Payne and **N. R. Jennings** (2009) "Flexible selection of heterogeneous and unreliable services in large-scale grids" *Philosophical Trans. of the Royal Society A* **367** (1897) 2483-2494.
72. J. Kho, A. Rogers and **N. R. Jennings** (2009) "Decentralised control of adaptive sampling in wireless sensor networks" *ACM Trans on Sensor Networks* **5** (3) 19.1-19.35.
73. I. Rezek, D. S. Leslie, S. Reece, S. J. Roberts, A. Rogers, R. K. Dash and **N. R. Jennings** (2008) "On similarities between inference in game theory and machine learning" *Journal of AI Research* **33** 259-283.
74. Y. K. Penya and **N. R. Jennings** (2008) "Optimal combinatorial electricity markets" *Int. J. of Web Intelligence and Agent Systems* **6** (2) 123-135.
75. S. S. Fatima, W. Wooldridge and **N. R. Jennings** (2008) "A linear approximation method for the Shapley value" *Artificial Intelligence* **172** (14) 1673-1699.
76. P. Vytelingum, D. Cliff and **N. R. Jennings** (2008) "Strategic bidding in continuous double auctions" *Artificial Intelligence* **172** (14) 1700-1729.
77. E. H. Gerding, R. K. Dash, A. Byde and **N. R. Jennings** (2008) "Optimal strategies for bidding agents participating in simultaneous Vickrey auctions with perfect substitutes" *Journal of AI Research* **32** 939-982.
78. Y. Z. Wei, **N. R. Jennings**, L. Moreau and W. Hall (2008) "User evaluation of a market-based recommender system" *Journal of Autonomous Agents and Multi-Agent Systems* **17** (2) 251-269.
79. R. K. Dash, P. Vytelingum, A. Rogers, E. David and **N. R. Jennings** (2007) "Market-based task allocation mechanisms for limited capacity suppliers" *IEEE Trans. on Systems Man and Cybernetics (Part A)* **37** (3) 391-405.
80. A. Rogers, R. K. Dash, S. D. Ramchurn, P. Vytelingum and **N. R. Jennings** (2007) "Coordinating team players within a noisy iterated Prisoner's Dilemma tournament" *Theoretical Computer Science* **377** (1-3) 243-259.
81. E. David, A. Rogers, **N. R. Jennings**, J. Schiff, S. Kraus and M. H. Rothkopf (2007) "Optimal design of English auctions with discrete bid levels" *ACM Trans on Internet Technology* **7** (2), 12.1-12.34.
82. R. Ghanea-Hercock, E. Gelenbe, **N. R. Jennings**, O. Smith, D. N. Allsopp, A. Healing, H. Duman, S. Sparks, N. C. Karunatillake and P. Vytelingum (2007) "Hyperion – Next generation battle space information services" *The Computer Journal* **50** (6) 632-645.
83. X. Luo and **N. R. Jennings** (2007) "A spectrum of compromise aggregation operators for multi-attribute decision making" *Artificial Intelligence* **171** (2-3) 161-184.
84. T. Rahwan and **N. R. Jennings** (2007) "An algorithm for distributing coalitional value calculations among cooperating agents" *Artificial Intelligence* **171** (8-9) 535-567.
85. I. Rahwan, L. Sonenberg, **N. R. Jennings** and P. McBurney (2007) "STRATUM: A methodology for designing heuristic agent negotiation strategies" *Int. J. of Applied Artificial Intelligence* **21** (6) 489-527.

86. A. Rogers, E. David, J. Schiff and **N. R. Jennings** (2007) "The effects of proxy bidding and minimum bid increments within eBay auctions" *ACM Trans on the Web* **1** (2) 9.1-9.28.
87. S. D. Ramchurn, C. Sierra, L. Godo and **N. R. Jennings** (2007) "Negotiating using rewards" *Artificial Intelligence* **171** (10-15) 805-837.
88. D. Nguyen, S. G. Thompson, J. Patel, W. T. L. Teacy, **N. R. Jennings**, M. Luck, V. Dang, S. Chalmers, N. Oren, T. J. Norman, A. Preece, P. M. D. Gray, G. Shercliff, P. J. Stockreisser, J. Shao, W. A. Gray and N. J. Fiddian (2006) "Delivering services by building and running virtual organisations" *British Telecom Technology Journal* **24** (1) 141-152.
89. X. Luo, **N. R. Jennings** and N. Shadbolt (2006) "Acquiring user strategies and preferences for negotiating agents: a default then adjust method" *Int. J. of Human Computer Studies* **64** (4) 304-321.
90. W. T. L. Teacy, J. Patel, **N. R. Jennings** and M. Luck (2006) "TRAVOS: Trust and reputation in the context of inaccurate information sources" *Journal of Autonomous Agents and Multi-Agent Systems* **12** (2) 183-198.
91. T. D. Huynh, **N. R. Jennings** and N. R. Shadbolt (2006) "An integrated trust and reputation model for open multi-agent systems" *Journal of Autonomous Agents and Multi-Agent Systems* **13** (2) 119-154.
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42. M. Venanzi, A. Rogers and **N. R. Jennings** (2013) "Trust-based heteroscedastic Gaussian processes for crowdsourcing spatial functions" *Proc. 1st Int. Conf. on Human Computation and Crowdsourcing*, Palm Springs, USA 182-189.
43. V. Capraro, M. Venanzi, M. Polukarov and **N. R. Jennings** (2013) "Cooperative equilibria in iterated social dilemmas" *Proc. 6th Int. Sym. on Algorithmic Game Theory*, Aachen, Germany 146-158.
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45. T. Michalak, T. Rahwan, P. Szczepanski, R. Narayanam, **N. R. Jennings** and M. Wooldridge (2013) "Computational analysis of connectivity games with application to investigation of terrorist networks" *Proc. 23rd Int. Joint Conf. on AI (IJCAI)*, Beijing, China 293-301.
46. F. Wu, S. Zilberstein and **N. R. Jennings** (2013) "Monte-Carlo expectation maximization for decentralized POMDPs" *Proc. 23rd Int. Joint Conf. on AI (IJCAI)*, Beijing, China 317-403.
47. S. Stein, E. H. Gerding, V. Robu, M de Weerd and **N. R. Jennings** (2013) "Intention-aware routing to minimise delays at electric vehicle charging stations" *Proc. 23rd Int. Joint Conf. on AI (IJCAI)*, Beijing, China, 83-89.
48. T. Rahwan, T. Nguyen, T. Michalak, M. Polukarov, M. Croitoru and **N. R. Jennings** (2013) "Coalitional games via network flows" *Proc. 23rd Int. Joint Conf. on AI (IJCAI)*, Beijing, China, 324-331.
49. L. Tran-Thanh, T. Nguyen, T. Rahwan, A. Rogers and **N. R. Jennings** (2013) "An efficient vector-based representation for coalitional games" *Proc. 23rd Int. Joint Conf. on AI (IJCAI)*, Beijing, China, 383-389.
50. V. Robu, D. Parkes, T. Ito and **N. R. Jennings** (2013) "Efficient interdependent value combinatorial auctions with single-minded bidders" *Proc. 23rd Int. Joint Conf. on AI (IJCAI)*, Beijing, China, 339-345.
51. J. Mclnerney, A. Rogers and **N. R. Jennings** (2013) "Learning periodic human behaviour models from sparse data for crowdsourcing aid delivery in developing countries" *Proc. 29th Int. Conf. on Uncertainty in AI (UAI)*, Washington, USA 401-410.

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53. S. Brânzei, T. Michalak, T. Rahwan, K. Larson, and **N. R. Jennings** (2013) "Matching with externalities and attitudes" *Proc. 12th Int. Conf. on Autonomous Agents and Multi-Agent Systems*, Minnesota, USA 295-302.
54. V. Naroditskiy, S. Ceppi, V. Robu and **N. R. Jennings** (2013) "Redistribution in online mechanisms" *Proc. 12th Int. Conf. on Autonomous Agents and Multi-Agent Systems*, Minnesota, USA 651-658.
55. M. Venanzi, A. Rogers and **N. R. Jennings** (2013) "Trust-based fusion of untrustworthy information in crowdsourcing applications" *Proc. 12th Int. Conf. on Autonomous Agents and Multi-Agent Systems*, Minnesota, USA, 829-836.
56. Y. Zick, M. Polukarov and **N. R. Jennings** (2013) "Taxation and stability in cooperative games" *Proc. 12th Int. Conf. on Autonomous Agents and Multi-Agent Systems*, Minnesota, USA, 523-530.
57. E. H. Gerding, S. Stein, V. Robu, D. Zhao, and **N. R. Jennings** (2013) "Two-sided online markets for electric vehicle charging" *Proc. 12th Int. Conf. on Autonomous Agents and Multi-Agent Systems*, Minnesota, USA, 989-996.
58. J. E. Fischer, S. D. Ramchurn, M. Osborne, O. Parson, T. D. Huynh, M. Alam, N. Pantidi, S. Moran, K Bachour, S. Reece, E. Costanza, T. Rodden and **N. R. Jennings** (2013) "Recommending energy tariffs and load shifting based on smart household usage profiling" *Proc. Int. Conf. on Intelligent User Interfaces*, Santa Monica, USA 383-394.
59. V. Naroditskiy, M. Guo, L. Dufton, M. Polukarov and **N. R. Jennings** (2012) "Redistribution of VCG payments in public project problems" *Proc. 8th Int. Workshop on Internet and Network Economics* Liverpool, UK 323-336.
60. E. Costanza, S. D. Ramchurn and **N. R. Jennings** (2012) "Understanding domestic energy consumption through interactive visualisation: a field study" *Proc. 14th ACM Int. Conf. on Ubiquitous Computing*, Pittsburgh, USA 216-225.
61. R. Kota, V. Robu, G. Chalkiadakis, A. Rogers and **N. R. Jennings** (2012) "Cooperatives for demand side management" *Proc. 20th European Conf. on AI (ECAI)*, Montpellier, France 969-974.
62. F. Wu, **N. R. Jennings** and X. Chen (2012) "Sample-based policy iteration for constrained DEC-POMDPs" *Proc. 20th European Conf. on AI (ECAI)*, Montpellier, France 858-863.
63. G. Hines, T. Rahwan and **N. R. Jennings** (2012) "An anytime algorithm for finding an epsilon-core in non-transferable utility coalitional games" *Proc. 20th European Conf. on AI (ECAI)*, Montpellier, France 414-419.
64. C. R. Williams, V. Robu, E. H. Gerding and **N. R. Jennings** (2012) "Negotiating concurrently with unknown opponents in complex, real-time domains" *Proc. 20th European Conf. on AI (ECAI)*, Montpellier, France 834-839.
65. L. Tran-Thanh, S. Stein, A. Rogers and **N. R. Jennings** (2012) "Efficient crowdsourcing of unknown experts using multi-armed bandits" *Proc. 20th European Conf. on AI (ECAI)*, Montpellier, France 768-773. **[Honourable mention for best paper award]**
66. I. Vetsikas, S. Stein and **N. R. Jennings** (2012) "Multi-unit auctions with a stochastic number of asymmetric bidders" *Proc. 20th European Conf. on AI (ECAI)*, Montpellier, France 816-821.
67. J. McInerney, S. Stein, A. Rogers and **N. R. Jennings** (2012) "Exploring periods of low predictability in daily life mobility" *Proc. Pervasive Workshop on the Nokia Mobile Data Challenge*, Newcastle, UK.
68. L. Tran-Thanh, M. Polukarov, A. Chapman, A. Rogers and **N. R. Jennings** (2012) "Knapsack-based optimal policies for budget-limited multi-armed bandits" *Proc. 26th AAAI Conf.* Toronto, Canada, 1134-1140. **[Honourable mention for best paper award, 2 out of 1129 submissions]**
69. T. Rahwan, T. Michalak and **N. R. Jennings** (2012) "A hybrid algorithm for coalition structure generation" *Proc. 26th AAAI Conf.* Toronto, Canada 1443-1354.
70. L. Dufton, V. Naroditskiy, M. Polukarov and **N. R. Jennings** (2012) "Optimizing payments in dominant-strategy mechanisms for multi-parameter domains" *Proc. 26th AAAI Conf.* Toronto, Canada 1347-1354.
71. V. Robu, R. Kota, G. Chalkiadakis, A. Rogers and **N. R. Jennings** (2012) "Cooperative virtual power plant formation using scoring rules" *Proc. 26th AAAI Conf.* Toronto, Canada, 370-376.
72. A. Rogers, S. D. Ramchurn and **N. R. Jennings** (2012) "Delivering the smart grid: challenges for autonomous agents and multi-agent systems research" *Proc. 26th AAAI Conf.* Toronto, Canada, 2166-2172.
73. F. M. Delle Fave, A. Farinelli, A. Rogers and **N. R. Jennings** (2012) "A methodology for deploying the max-sum algorithm and a case study in unmanned aerial vehicles" *Proc. 24th Conf. on Innovative Applications of AI*, Toronto, Canada, 2275-2280.
74. F. Ishowo-Oloko, I. Rahwan, P. Vytelingum and **N. R. Jennings** (2012) "A storage pricing mechanism for learning agents in the Masdar City smart electricity grid" *Proc. 3rd Int. Workshop on Agent Technology for Energy Systems*, Valencia, Spain 81-88.

75. O. Pryymak, A. Rogers and **N. R. Jennings** (2012) "Efficient sharing of conflicting information in large decentralised teams" *Proc. 11th Int. Conference on Autonomous Agents and Multi-Agent Systems*, Valencia, Spain 543-550.
76. G. Chalkiadakis, V. Markakis and **N. R. Jennings** (2012) "Coalitional stability in structured environments" *Proc. 11th Int. Conference on Autonomous Agents and Multi-Agent Systems*, Valencia, Spain 779-786.
77. T. Voice, S. D. Ramchurn and **N. R. Jennings** (2012) "On coalition formation with sparse synergies" *Proc. 11th Int. Conference on Autonomous Agents and Multi-Agent Systems*, Valencia, Spain 223-230
78. R. Stranders, L. Tran-Thanh, F. M. Delle Fave, A. Rogers and **N. R. Jennings** (2012) "DCOPS and bandits: Exploration and exploitation in decentralised coordination" *Proc. 11th Int. Conference on Autonomous Agents and Multi-Agent Systems*, Valencia, Spain 289-297.
79. S. Stein, S. Williamson and **N. R. Jennings** (2012) "Decentralised channel allocation and information sharing for teams of cooperative agents" *Proc. 11th Int. Conference on Autonomous Agents and Multi-Agent Systems*, Valencia, Spain 231-238.
80. W. L. Teacy, G. Chalkiadakis, A. Farinelli, A. Rogers, **N. R. Jennings**, S. McClean and G. Parr (2012) "Decentralized Bayesian reinforcement learning for online agent collaboration" *Proc. 11th Int. Conference on Autonomous Agents and Multi-Agent Systems*, Valencia, Spain 417-424.
81. S. Stein, E. H. Gerding, V. Robu and **N. R. Jennings** (2012) "A model-based online mechanism with pre-commitment and its application to electric vehicle charging" *Proc. 11th Int. Conference on Autonomous Agents and Multi-Agent Systems*, Valencia, Spain 669-676.
82. F. M. Delle Fave, A. Rogers, Z. Xu, S. Sukkarieh and **N. R. Jennings** (2012) "Deploying the max-sum algorithm for coordination and task allocation of unmanned aerial vehicles for live imagery collection" *Proc. IEEE Int. Conf. on Robotics and Automation (ICRA)*, St Pauls, USA, 469-476.
83. M. Guo, V. Naroditskiy, V. Conitzer, A. Greenwald and **N. R. Jennings** (2011) "Budget-balanced and nearly efficient randomized mechanisms: Public goods and beyond" *Proc. 7th Int. Workshop on Internet and Network Economics*, Singapore 158-169.
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85. V. Robu, S. Stein, E. H. Gerding, D. C. Parkes, A. Rogers and **N. R. Jennings** (2011) "An online mechanism for multi-speed electric vehicle charging" *Proc. 2nd Conf. on Auctions, Market Mechanisms and their Applications*, New York, USA.
86. S. S. Fatima, M. Wooldridge and **N. R. Jennings** (2011) "Automated analysis of weighted voting games" *Proc. 13th Int. Conf. on Electronic Commerce*, Liverpool UK.
87. T. Rahwan, T. Michalak, E. Elkind, P. Faliszewski, M. Wooldridge and **N. R. Jennings** (2011) "Constrained coalition formation" *Proc. 25th Conf. on AI (AAAI)*, San Francisco, USA 719-725.
88. K. Macarthur, R. Stranders, S. D. Ramchurn and **N. R. Jennings** (2011) "A distributed anytime algorithm for dynamic task allocation in multi-agent systems" *Proc. 25th Conf. on AI (AAAI)*, San Francisco, USA 701-706.
89. T. Voice, S. D. Ramchurn, P. Vytelingum, A. Rogers and **N. R. Jennings** "Decentralised control of micro-storage in the smart grid" *Proc. 25th Conf. on AI (AAAI)*, San Francisco, USA 1421-1427.
90. A. C. Chapman, S. A. Williamson and **N. R. Jennings** (2011) "Filtered fictitious play for perturbed-observation potential games and decentralised POMDPs" *Proc. 27th Conf. on Uncertainty in AI*, Barcelona, Spain, 77-85.
91. H. S. Packer, N. Gibbins and **N. R. Jennings** (2011) "An on-line algorithm for semantic forgetting" *Proc. 22nd Int. J. Conf. on AI (IJCAI)*, Barcelona, Spain 2704-2709.
92. T. Rahwan, T. Michalak and **N. R. Jennings** (2011) "Minimum search to establish worst-case guarantees in coalition structure generation" *Proc. 22nd Int. J. Conf. on AI (IJCAI)*, Barcelona, Spain, 338-343
93. C. Williams, V. Robu, E. H. Gerding and **N. R. Jennings** (2011) "Using Gaussian processes to optimise concession in complex negotiations against unknown opponents" *Proc. 22nd Int. J. Conf. on AI (IJCAI)*, Barcelona, Spain 432-438.
94. R. Cavalcante, A. Rogers and **N. R. Jennings** (2011) "Consensus acceleration in multi-agent systems with the Chebyshev semi-iterative method" *Proc. 10th Int. Conf. on Autonomous Agents and Multi-Agent Systems*, Taipei, Taiwan 165-172.
95. E. H. Gerding, V. Robu, S. Stein, D. Parkes A. Rogers and **N. R. Jennings** (2011) "Online mechanism design for electric vehicle charging" *Proc. 10th Int. Conf. on Autonomous Agents and Multi-Agent Systems*, Taipei, Taiwan 811-818.
96. S. D. Ramchurn, P. Vytelingum, A. Rogers and **N. R. Jennings** (2011) "Agent-based control for decentralised demand side management in the smart grid" *Proc. 10th Int. Conf. on Autonomous Agents and Multi-Agent Systems*, Taipei, Taiwan, 5-12. [Honourable mention for best application paper award]

97. F. M. Delle Fave, R. Stranders, A. Rogers and **N. R. Jennings** (2011) "Bounded decentralised coordination over multiple objectives" *Proc. 10th Int. Conf. on Autonomous Agents and Multi-Agent Systems*, Taipei, Taiwan 371-378.
98. G. Chalkiadakis, V. Robu, R. Kota, A. Rogers and **N. R. Jennings** (2011) "Cooperatives of distributed energy resources for efficient virtual power plants" *Proc. 10th Int. Conf. on Autonomous Agents and Multi-Agent Systems*, Taipei, Taiwan 787-794.
99. N. Stefanovitch, A. Farinelli, A. Rogers and **N. R. Jennings** (2011) "Resource-aware junction trees for efficient multi-agent coordination" *Proc. 10th Int. Conf. on Autonomous Agents and Multi-Agent Systems*, Taipei, Taiwan 363-370.
100. K. A. Macarthur, S. D. Ramchurn and **N. R. Jennings** (2011) "Decentralised parallel machine scheduling for multi-agent task allocation" *Proc. 4th Int. Workshop on Optimisation in Multi-Agent Systems*, Taipei, Taiwan.
101. Y. Bachrach, M. Polukarov and **N. R. Jennings** (2010) "The good, the bad and the cautious: safety level cooperative games" *Proc. 6th Int. Workshop on Internet and Network Economics*, Stanford, USA, 432-443.
102. K. V. Aadithya, B. Ravindran, T. P. Michalak and **N. R. Jennings** (2010) "Efficient computation of the Shapley value for centrality in networks" *Proc. 6th Int. Workshop on Internet and Network Economics*, Stanford, USA, 1-13.
103. A. M. Sykulski, N. M. Adams and **N. R. Jennings** (2010) "On-line adaptation of exploration in the one-armed bandit with covariates problem" *Proc. 9th Int. Conf. on Machine Learning and Applications*, Washington, USA, 459-464.
104. H. S. Packer, N. M. Gibbins and **N. R. Jennings** (2010) "Forgetting fragments from evolving ontologies" *Proc. 9th Int. Semantic Web Conf. (ISWC)*, Shanghai, China, 577-592. [Winner best student paper award]
105. A. Rogers, A. Farinelli and **N. R. Jennings** (2010) "Self-organising sensors for wide area surveillance using the max-sum algorithm" *Proc. 1st Int. Workshop on Self-Organizing Architectures*, Cambridge, UK, 84-100.
106. H. S. Packer, N. M. Gibbins and **N. R. Jennings** (2010) "Collaborative learning of ontology fragments by cooperating agents" *Proc. IEEE/WIC/ACM Int. Conf. on Intelligent Agent Technology*, Toronto, Canada.
107. A. Sykulski, A. Chapman, E. Munoz de Cote and **N. R. Jennings** (2010) "EA²: The winning strategy for the inaugural lemonade stand game tournament" *Proc. 19th European Conf. on AI*, Lisbon, Portugal, 209-214.
108. T. Voice, R. Stranders, A. Rogers and **N. R. Jennings** (2010) "Hybrid continuous max-sum algorithms for decentralised coordination" *Proc. 19th European Conf. on AI*, Lisbon, Portugal, 61-66. [Honourable mention for best paper award]
109. S. Stein, E. H. Gerding and **N. R. Jennings** (2010) "Optimal task migration in service-oriented systems: algorithms and mechanisms" *Proc. 19th European Conf. on AI*, Lisbon, Portugal, 73-78.
110. T. Michalak, T. Rahwan and **N. R. Jennings** (2010) "Computational aspects of extending the Shapley value to coalitional games with externalities" *Proc. 19th European Conf. on AI*, Lisbon, Portugal, 197-202.
111. B. Shi, E. H. Gerding, P. Vytelingum and **N. R. Jennings** (2010) "An equilibrium analysis of competing double auction marketplaces using a fictitious play algorithm" *Proc. 19th European Conf. on AI*, Lisbon, Portugal, 575-580.
112. V. Robu, I. Vetsikas, E. H. Gerding and **N. R. Jennings** (2010) "Addressing the exposure problem of bidding agents using flexibly priced options" *Proc. 19th European Conf. on AI*, Lisbon, Portugal, 581-586.
113. I. Vetsikas and **N. R. Jennings** (2010) "Multi-unit auctions with asymmetric bidders" *Proc. ECAI Workshop on Intelligent Agents and Technologies for e-business*, Lisbon, Portugal, 1-6.
114. R. Stranders, F. M. D. Fave, A. Rogers and **N. R. Jennings** (2010) "A decentralised coordination algorithm for mobile sensors" *Proc. 24th Conf. on AI (AAAI)* Atlanta, USA, 874-880.
115. L. Tran-Thanh, A. Chapman, E. Munoz de Cote, A. Rogers and **N. R. Jennings** (2010) "Epsilon-first policies for budget-limited multi-armed bandits" *Proc. 24th Conf. on AI (AAAI)* Atlanta, USA, 1211-1216.
116. R. Meir, M. Polukarov, J. S. Rosenschein and **N. R. Jennings** (2010) "Convergence to equilibria in plurality voting" *Proc. 24th Conf. on AI (AAAI)* Atlanta, USA, 823-828.
117. A. C. Chapman, A. Farinelli, E. Munoz de Cote, A. Rogers and **N. R. Jennings** (2010) "A distributed algorithm for optimising over pure strategy Nash equilibria" *Proc. 24th Conf. on AI (AAAI)* Atlanta, USA, 749-755.
118. E. Munoz de Cote, A. Chapman, A. Sykulski and **N. R. Jennings** (2010) "Automated planning in repeated adversarial games" *Proc. 26th Conf. On Uncertainty in AI*, Catalina Island, USA.
119. R. Cavalcante, A. Rogers, I. Yamada and **N. R. Jennings** (2010) "Distributed multiagent learning with a broadcast adaptive sub-gradient method" *Proc. 9th Int. Conf. on Autonomous Agents and Multi-Agent Systems*, Toronto, Canada 1039-1046.
120. E. Munoz de Cote and **N. R. Jennings** (2010) "Planning against fictitious players in repeated normal form games" *Proc. 9th Int. Conf. on Autonomous Agents and Multi-Agent Systems*, Toronto, Canada 1073-1080.

121. Z. Rabinovich, L. Dufton, K. Larson and **N. R. Jennings** (2010) "Cultivating desired behaviour: Policy teaching via environment-dynamics tweaks" *Proc. 9th Int. Conf. on Autonomous Agents and Multi-Agent Systems*, Toronto, Canada 1097-1104.
122. B. Shi, E. H. Gerding, P. Vytelingum and **N. R. Jennings** (2010) "A game-theoretic analysis of market selection strategies for competing double auction markets" *Proc. 9th Int. Conf. on Autonomous Agents and Multi-Agent Systems*, Toronto, Canada 857-864.
123. R. Stranders, A. Rogers and **N. R. Jennings** (2010) "A decentralised coordination algorithm for maximising sensor coverage in large sensor networks" *Proc. 9th Int. Conf. on Autonomous Agents and Multi-Agent Systems*, Toronto, Canada 1165-1172.
124. T. Michalak, D. Marciniak, M. Szamotulski, T. Rahwan, M. Wooldridge, P. McBurney and **N. R. Jennings** (2010) "A logic-based representation for coalitional games with externalities" *Proc. 9th Int. Conf. on Autonomous Agents and Multi-Agent Systems*, Toronto, Canada, 125-132.
125. T. Michalak, J. Sroka, T. Rahwan, M. Wooldridge, P. McBurney and **N. R. Jennings** (2010) "A distributed algorithm for anytime coalition structure generation" *Proc. 9th Int. Conf. on Autonomous Agents and Multi-Agent Systems*, Toronto, Canada 1007-1014.
126. S. D. Ramchurn, M. Polukarov, A. Farinelli, C. Truong and **N. R. Jennings** (2010) "Coalition formation with spatial and temporal constraints" *Proc. 9th Int. Conf. on Autonomous Agents and Multi-Agent Systems*, Toronto, Canada 1181-1188.
127. E. H. Gerding, S. Stein, K. Larson, A. Rogers and **N. R. Jennings** (2010) "Scalable mechanism design for the procurement of services with uncertain durations" *Proc. 9th Int. Conf. on Autonomous Agents and Multi-Agent Systems*, Toronto, Canada 649-656.
128. P. Vytelingum, T. Voice, S. D. Ramchurn, A. Rogers and **N. R. Jennings** (2010) "Agent-based micro-storage management for the smart grid" *Proc. 9th Int. Conf. on Autonomous Agents and Multi-Agent Systems*, Toronto, Canada 39-46. [Winner best paper award, 685 submissions]
129. P. Vytelingum, S. D. Ramchurn, T. Voice, A. Rogers and **N. R. Jennings** (2010) "Trading agents for the smart electricity grid" *Proc. 9th Int. Conf. on Autonomous Agents and Multi-Agent Systems*, Toronto, Canada 897-904.
130. K. S. Macarthur, A. Farinelli, S. D. Ramchurn and **N. R. Jennings** (2010) "Efficient superstabilizing decentralised optimisation for dynamic task allocation environments" *Proc. 3rd Int. Workshop on Optimisation in Multi-Agent Systems*, Toronto, Canada, 25-32.
131. F. Delle Fave, Z. Xu, A. Rogers and **N. R. Jennings** (2010) "Decentralised coordination of unmanned aerial vehicles for target search using the max sum algorithm" *Proc. Int. Workshop on Agents in Real-time and Dynamic Environments*, Toronto, Canada, 35-44.
132. S. S. Fatima, M. Wooldridge and **N. R. Jennings** (2010) "Optimal agendas for multi-issue negotiation" *Proc. 12th Int. Workshop on Agent-Mediated Electronic Commerce*, Toronto, Canada, 155-168.
133. B. Shi, E. H. Gerding, P. Vytelingum and **N. R. Jennings** (2010) "Setting fees in competing double auction marketplaces: an equilibrium analysis" *Proc. 12th Int. Workshop on Agent-Mediated Electronic Commerce*, Toronto, Canada, 85-98.
134. V. Robu, I. Vetsikas, E. Gerding and **N. R. Jennings** (2010) "Flexibly priced options: A new mechanism for sequential auctions with complementary goods" *Proc. 12th Int. Workshop on Agent-Mediated Electronic Commerce*, Toronto, Canada, 29-42.
135. P. Vytelingum, A. Rogers, D. K. Macbeth, P. Dutta, A. Stranjak and **N. R. Jennings** (2009) "A market-based approach to multiple-factory scheduling" *Proc. 1st Int. Conf. on Auctions, Market Mechanisms and their Applications*, Boston, USA.
136. G. Chalkiadakis, E. Elkind, M. Polukarov and **N. R. Jennings** (2009) "The price of democracy in coalition formation" *Proc. 8th Int. Conf. on Autonomous Agents and Multi-Agent Systems*, Budapest, Hungary, 401-408.
137. S. Stein, E. Gerding, A. Rogers, K. Larson and **N. R. Jennings** (2009) "Flexible procurement of services with uncertain durations" *Proc. 2nd Int. Workshop on Optimisation in Multi-Agent Systems*, Budapest, Hungary, 16-22.
138. I. A. Vetsikas, A. Rogers and **N. R. Jennings** (2009) "Pick a bundle: A novel bundling strategy for selling multiple items within online auctions" *Proc. 2nd Int. Workshop on Optimisation in Multi-Agent Systems*, Budapest, Hungary, 31-38.
139. A. Papakonstantinou, A. Rogers, E. H. Gerding and **N. R. Jennings** (2009) "Mechanism design for eliciting probabilistic estimates from multiple suppliers with unknown costs and limited precision" *Proc. 11th Int. Workshop on Agent Mediated Electronic Commerce*, Budapest, Hungary, 111-124.

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141. T. Rahwan, T. Michalak, **N. R. Jennings**, M. Wooldridge and P. McBurney (2009) "Coalition structure generation in multi-agent systems with positive and negative externalities" *Proc. 21st Int. Joint Conf. on AI (IJCAI)*, Pasadena, USA, 257-263.
142. S. Stein, E. Gerding, A. Rogers, K. Larson and **N. R. Jennings** (2009) "Flexible procurement of services with uncertain durations using redundancy" *Proc. 21st Int. Joint Conf. on AI (IJCAI)*, Pasadena, USA, 292-298.
143. G. van Valkenhoef, S. D. Ramchurn, P. Vytelingum, **N. R. Jennings** and R. Verbrugge (2009) "Continuous double auctions with execution uncertainty" *Proc. IJCAI Workshop on Trading Agent Design and Analysis*, Pasadena, USA, 113-122.
144. H. S. Packer, N. M. Gibbins and **N. R. Jennings** (2009) "Ontology evolution through agent collaboration" *Proc. AISB Workshop on Matching and Meaning*, Edinburgh, Scotland.
145. R. Stranders, A. Farinelli, A. Rogers and **N. R. Jennings** (2009) "Decentralised coordination of continuously valued control parameters using the max-sum algorithm" *Proc. 8th Int. Conf. on Autonomous Agents and Multi-Agent Systems*, Budapest, Hungary 601-608.
146. A. C. Chapman, R. A. Micillo, R. Kota and **N. R. Jennings** (2009) "Decentralized task allocation: a practical game theoretic approach" *Proc. 8th Int. Conf. on Autonomous Agents and Multi-Agent Systems*, Budapest, Hungary, 915-922. [Honourable mention for best student paper award]
147. R. Kota, N. M. Gibbins and **N. R. Jennings** (2009) "Self-organising agent organisations" *Proc. 8th Int. Conf. on Autonomous Agents and Multi-Agent Systems*, Budapest, Hungary, 797-804.
148. S. Fatima, M. Wooldridge and **N. R. Jennings** (2009) "An analysis of feasible solutions for multi-issue negotiation involving non-linear utility functions" *Proc. 8th Int. Conf. on Autonomous Agents and Multi-Agent Systems*, Budapest, Hungary, 1041-1048.
149. S. A. Williamson, E. H. Gerding and **N. R. Jennings** (2009) "Reward shaping for valuing communications during multi-agent coordination" *Proc. 8th Int. Conf. on Autonomous Agents and Multi-Agent Systems*, Budapest, Hungary, 641-648.
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