

# Dr Simon Dobson BSc MA DPhil CEng CITP FBCS

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## Background

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### Primary and professional qualifications

DPhil Computer Science, University of York UK	1993
BSc (hons) 1st class Computing Science, University of Newcastle upon Tyne UK	1989
Chartered IT Professional	2004
Chartered Engineer	1996
Fellow, British Computer Society	1996

### Career

University College Dublin IE (College lecturer)	2004 – date
Aurium IE (Founder and CEO of a research-led start-up company)	2001 – 2003
Trinity College Dublin IE (Research fellow; Lecturer)	1997 – 2001, 2003 – 2004
STFC Rutherford Appleton Laboratory UK (Research fellow; Scientific officer)	1992 – 1997

## Research

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### Current main research interests

Design, analysis and programming of highly adaptive computing and communications systems, especially sensor networks, autonomic and pervasive systems. Novel programming languages, models and middleware.

### Active grant portfolio

Name	Area	Role	Institutional/total value
Lero	Software engineering of autonomic systems	Co-investigator	€1M/€11M
Clarity	Sensor networks	Co-investigator	€6M/€16M
NEMBES	Networked embedded systems	Institutional lead	€450K/€11M
PUDECAS	Pervasive systems evaluation	Institutional lead	€80K/€350K
ODCSSS	Undergraduate research internships	Co-investigator	€600K/€1.2M
SenseTiles	Easily-deployed sensor platform	Co-investigator	€650K

### Career totals

*Principal investigator* on grants worth over €3M. *Collaborator/co-investigator* on grants totalling a further €40M. *Commercial funding* to found and lead a start-up company, raising €650K in venture funding and growing it to a value in excess of €1.8M.

## Selected recent professional activities

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*Programme and policy development.* European Research Consortium for Informatics and Mathematics, national director 2006 – date; vice-president, 2008 – date; chair of structure task group 2007 – date. Autonomic Communications Forum, board of directors 2004 – date. EU Framework programmes, invited expert for Situated and Autonomic Communications initiative 2003 – 2005; proposal reviewer, 2004 – date. IBEC/ICT Ireland industry group on academic/industrial R&D, member 2003 – date.

*Editorial activities.* Editorial board, Journal of Network and Systems Management, 2007 – date; International Journal of Autonomous and Adaptive Communications Systems, 2007 – date; International Journal of Ambient Computing and Intelligence, 2008 – date; Springer Verlag Birkhäuser series on Autonomic Computing, 2008 – date. Guest editor, Computer Networks, 2008; Cluster Computing Journal, 2009.

*Keynotes and panels.* Keynote, 5th IEEE International Conference on Autonomic Computing, 2008; European Telecommunications Standards Institute 1st “Infinity Initiative” workshop, 2007; IFIP Autonomic Networking, 2006. Invited panelist, 2nd International Workshop on Self-Organising Systems, 2007; Dagstuhl seminar on resilient and survivable networks, infrastructures and services, 2007.

*Conference and workshop organisation.* IEEE International Conference on Autonomic Computing, Local chair 2006; workshops chair 2007; programme co-chair 2008; general co-chair 2009; member of steering committee 2007 – date. IFIP Autonomic Networking, Programme co-chair 2006. IEEE Pervasive, Publicity co-chair and local committee 2006.

## Selected recent publications

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Emerson Loureiro, Paddy Nixon, and Simon Dobson. Decentralized utility-based self-optimization for resource allocation. Submitted to the 6th IEEE International Conference on Autonomic Computing and Communication (ICAC’09)

Brendan Sheehan, Aaron Quigley, Benoit Gaudin, and Simon Dobson. A relation based measure of semantic similarity for gene ontology annotations. *BMC Bioinformatics Journal*, 9(468), November 2008

Simon Dobson. An adaptive systems perspective on network calculus, with applications to autonomic control. *International Journal of Autonomous and Adaptive Communications Systems*, 1(3):332–341, 2008

Simon Dobson, Spyros Denazis, Antonio Fernández, Dominique Gaïti, Erol Gelenbe, Fabio Massacci, Paddy Nixon, Fabrice Saffre, Nikita Schmidt, and Franco Zambonelli. A survey of autonomic communications. *ACM Transactions on Autonomous and Adaptive Systems*, 1(2):223–259, December 2006

Emerson Loureiro, Paddy Nixon, and Simon Dobson. A fine-grained model for adaptive on-demand provisioning of CPU shares in data centres. In *Self-organizing systems*, volume 5343 of *LNCS*, pages 97–108. Springer Verlag, December 2008

Hui Zhang, Paddy Nixon, and Simon Dobson. Multi-criteria adaptation mechanisms in homological sensor networks. In *Proceedings of the 11th IEEE International Conference on Communications Systems*. IEEE Press, 2008

M.A. Razzaque, Simon Dobson, and Paddy Nixon. Cross-layer self routing: a self-managed routing approach for MANETs. In *Proceedings of the 4th IEEE International Conference on Wireless and Mobile Computing, Networking and Communications*. IEEE Press, 2008

Juan Ye, Susan McKeever, Lorcan Coyle, Steve Neely, and Simon Dobson. Resolving uncertainty in context integration and abstraction. In Domenico Cotroneo and Julie McCann, editors, *Proceedings of the 5th International Conference on Pervasive Services*, pages 131–140. ACM Press, 2008

Juan Ye, Lorcan Coyle, Simon Dobson, and Paddy Nixon. A unified semantics space model. In *Location- and context-awareness*, volume 4718 of *LNCS*, pages 103–120, 2007

Simon Dobson, Eoin Bailey, Stephen Knox, Ross Shannon, and Aaron Quigley. A first approach to the closed-form specification and analysis of an autonomic control system. In *Proceedings of the 12th IEEE International Conference on Engineering Complex Computer Systems*, 2007

Michael Collins, Simon Dobson, and Paddy Nixon. Identifying and isolating aberrant nodes in wireless sensor networks. In *Proceedings of the 3rd International Conference for Internet Technologies and Secured Transactions*, June 2008. Winner of best paper award

Simon Dobson and Paddy Nixon. Stable autonomic adaptation: a grand challenge. In *Proceedings of the Third IEEE Workshop on Hot Topics for Autonomic Computing (HotAC’09)*, 2008

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