

Curriculum Vitae of Ian Wakeman, MA, MS, PhD

Full Name: Ian John Wakeman.
Year of Birth: 1965.
Nationality: British.
Marital Status: Married with 2 children
Current Position: Professor in Software Systems.
Current Employer: Dept of Informatics, University of Sussex
Date of Appointment: October 1995

1 Education

- 1992-1995, University College London Computer Science, Part-time PhD on “Congestion Control for Packetised Video in the Internet”, supervised by Prof Jon Crowcroft.
- 1987-1988, Stanford Ca., Masters degree in Electrical Engineering
- 1984-1987, St Catharines College, Cambridge, Bachelor of Arts with First Class Honours in the Electrical and Information Sciences Tripos.
- 1976-1983, Haberdashers’ Aske’s Boys School, Elstree, A- and S-Levels in Maths (A1), Physics (A1), Chemistry (A) 11 O-levels, 9 of which at grade A.

2 Employment

- 1995-: Professor in Software Systems, Informatics Dept., University of Sussex
- 2015-2017: Managing Director, HiveCore Ltd
- 2013-2015: Managing Director, TribeHive Ltd
- 1991-1995: Research Fellow at Computer Science Dept., University College, London
- 1988-1991: Research Engineer at GEC Hirst Research Centre, Wembley.

3 Funded Projects

- 2013-2014: Royal Academy of Engineering Enterprise Fellow on “Digital Stadium Commercialisation”, value £83K.
- 2012-2013: Principal Investigator on “Digital Stadium”, EPSRC, value £77K.
- 2009-2012: Co-Investigator on “Supporting Shy Users in Pervasive Computing”, EPSRC, value £1M.
- 2006-2010: Principal Investigator on “Utiforo: Pervasive Computing Support for Markets”, EPSRC, value £1M.
- 2004-2007: Principal Investigator of the EPSRC network on “Next Generation Networks” £60K.
- 2004-2007: Co-investigator on “Resource control and access for third party computation”, EPSRC, value £280K
- 2003-2007: Co-investigator on “Natural language configuration of pervasive computing environments”, EPSRC, value £250K
- 2001-2003: Principal Investigator on “Language Techniques for Implementing Policies in Pervasive Computing”, EPSRC, value £180K.
- 1999-2002: Partner in BT ALPINE programme on Active Networks value £100K.
- 1998: Equipment Donation from HP Philanthropic Initiative to support our work on Active Networks value £20K.
- 1998-2000 : Principal Investigator on “Exploring Mental Models for Application in Networked and Telecommunication Environments (EMMANATE)”, joint with UCL, supported by BT. EPSRC project, value £250K.
- 1997: Equipment Donation from HP Philanthropic Initiative to support our work on Adaptive Applications value £20K.
- 1996-2000 : Principal Investigator on “Low Bandwidth Access to Networked Information Resources”, supported by BT, EPSRC project value £190K
- 1997-1998 : Joint Grant Holder with Hilary Buxton on “Video clubs in schools to help Women into Computing”, supported by BT value £20K
- At UCL I co-wrote two two funded proposals to the EPSRC for congestion control of packetised video, and on quality of service for mobile communications.

4 Research Students

- 1997-2001: Rory Graves worked on the development of distributed algorithms using Active Network technology, on an EPSRC studentship. He successfully defended his thesis in Summer 2002.
- 1997-2001: Nick Sharples investigated the provision of Internet quality measurements to distributed ALife applications, on a COGS studentship. He received his doctorate in 2002.
- 1997-2001: Ann Light worked on the problems of interactivity for the new digital media (co-supervision with Yvonne Rogers). She successfully defended her thesis in February 2001.
- 1998-2004 : Jon Rimmer worked on mental models for networks (pt). He passed his viva in 2004
- 1999-2004: Adnan Albar produced a framework for adaptive applications, and received his PhD in 2004.
- 1999-2003: Steve Cogden, CASE student with Open-I, looked at novel multicast architectures, and received his PhD in 2003.
- 2002-2005: Jon Robinson successfully defended his PhD on Service Composition for pervasive computing.
- 2002-2006 : David Ellis, Overlay networks for Denial of Service protection
- 2004-2010 : Anirban Basu was awarded his PhD on a generalised reputation system for clients and servers in the Internet.
- 2004-2010 : Roya Faizy was awarded her PhD on the automated validation of identity in online social networks (pt).
- 2004-2011 : Stephen Naicken was awarded his PhD on the use of trust in publish subscribe networks (pt)
- 2008-2011 : Simon Fleming was awarded his PhD on deniable communication within ad hoc networks.
- 2007-2011 : Aeshah Alsiyami was awarded her PhD on provenance management in pervasive computing
- 2007-2014 : Renan Krishna has submitted his thesis on the use of bi-graphs in service composition in pervasive computing
- 2009-2014 : Danny Matthews was awarded his PhD for work on the use of a distributed media space.
- 2011-2015 : Morteza Keirkhah is looking at the use of multi-path routing in data centres awarded in 2015.

- 2015-2017 : Phil Tee was awarded his PhD for his work on graph entropy for network management in 2017.

Each year I supervise 3 to 5 MSc theses, all of which have successfully passed to date.

I was the external PhD examiner for Dr Panos Gavros (UCL), Dr Antonio Liotta (UCL), Dr Evangelos Kotsovinos (Cambridge), Dr Ioannis Liabotis (UCL), Dr Dimitrios Miras (UCL), Dr Terence Song (Bristol), Dr AlFarez Rahman (UCL), Dr Anil Madhavapeddy (Cambridge), Dr David Hudson (Sydney), Dr Evangelia Kalyvianaki (Cambridge), Dr Daniele Quercia (UCL), Dr Francisco Duron (Lancaster) and Dr Ajab Khan (Leicester), and a number of internal candidates.

5 Teaching

As a lecturer I have had responsibility for teaching and developing a range of undergraduate courses, such as Further Programming (150 first year students), Operating Systems (80 second and third year students), Computer Systems Architecture (60 second year students), Multimedia Systems (60 third year students), Web Computing (30 second year students) and Distributed Systems (60 third year students), along with MSc courses on Computer Supported Cooperative Work, Object Oriented Programming and Distributed Systems.

I have introduced three new courses (Distributed Systems, Multimedia Systems and Web Computing) into the curriculum.

I have introduced an MSc in Multimedia Applications and Virtual Environments, which accepted its first entry in October 2001, produced an MRes in Distributed Programming Languages in partnership with Des Watson and Alan Jeffrey, and worked with Dan Chalmers in designing an MSc in Advanced Computer Science.

I have designed an undergraduate degree with Rose Luckin entitled “Internet Computing”. This degree accepted its first cohort in October 2002.

At UCL I taught half a postgraduate course in Computer Communications Architecture, and gave an undergraduate course in Computer Communications at Kings College, London.

6 Administration

During my time at Sussex, I have taken on the majority of the administrative roles. I was Head of Department from January 2016 to December 2017, Deputy Head of School from January 2018, and I have also resumed my role as Head of Department from September 2018. I am currently Head of the School of Engineering and Informatics.

I have been the Director of Research and Knowledge Exchange for the School of Engineering and Informatics and thus part of the School Management team from 2012 to 2013. I have been chair of the Informatics BSc exam board, and

hence a member of the School of Science and Technology exam board, a member of the curriculum development and course convenor for Internet Computing, the admissions selector for Informatics, academic director of CASA, and course director for the MAVE MSc. CASA was the semi-autonomous business arm of COGS, which organises conferences and helped in coordination with industry, and had four employees.

From 2001 to 2003, I ran a project in which we developed and sold short courses for industry derived from our MSc modules. The project was a prototype of a self-funding technique of reaching out to local industry and raising awareness of COGS and the University of Sussex.

7 External Activities

- I was founder and managing director of HiveCore Ltd. This company attempted to find non-sporting markets and products for our crowd connectivity technology. This company folded in 2017.
- In October 2013, I founded and became managing director of TribeHive Ltd, the company commercialising our work in the Digital Stadium project. This became InCrowd Sports in December 2015, and continues as a highly successful sports marketing company.
- I was the external member of the Essex periodic review of Computer Science and Electronic Engineering in March 2017.
- I ran the *Next Generation Networking* network, which organises the Cosener's Multi-Service Networks workshop, workshops for the EPSRC Programmable Network workshops and various tutorials aimed at PhD students on PlanetLab and network simulation from 2001 to 2014.
- I was an invited member of the UK delegation to India to discuss research collaborations on networking for ubiquitous computing, funded through the Royal Society.
- I was awarded a short term research fellowship from BT in 2001, during which I spent time working at Adastral Park, Ipswich.
- I am an external examiner for Loughborough University from January 2012 to October 2015.
- I am an external examiner for Imperial College from October 2009 to October 2012.
- I was an external examiner for UCL from October 2007 to September 2011.
- I was an external examiner for Lancaster University from October 2005 to July 2009.

- I was an external examiner for Oxford-Brookes University from October 1999 to July 2004.
- I am a member of the EPSRC College and review grant proposals for the EPSRC.
- I was a member of the group that developed the WINEs proposal calls for the EPSRC.
- I organised and wrote a consultative document for the ongoing EPSRC programme on “Programmable Networks”. I sat on the panel assessing proposals for this programme.
- I organised and chaired the First UK Workshop on Programmable Networks and Telecommunications, HP Labs, Bristol, on 28-29 September.
- I am the program chair for the Fifth IFIP Conference on Trust Management in 2011.
- I was on the program committees for the ACM MPAC Workshop 2005-2011, IEEE Policy Workshop 2004, the ACM Conference on Computer Communications (SIGCOMM) 2003, the IEEE Open Architectures for Signaling 1999, 2000 and 2001 conferences, the 1999 IEEE Workshop on Quality of Service in Networks and the AISB Symposium on Software mobility and adaptive behaviour, 2001.
- I have consulted for a number of organisations, such as Shell, Reuters, Canon, Orchestream and others.
- I review for publications such as ACM/IEEE Transactions on Networking.

8 Invited Talks and Tutorials

- Invited seminar to BT Research Laboratories on “Design of an Active Network Language”, December 1998.
- Invited talk to EPSRC Multimedia and Networked Applications Workshop, Leed, November 1998 on “Programmable Networks”
- Invited talk to Panel on Active Networks, INET 98 Conference, Geneva, July 1998 on “Design of an Active Network Language”.
- Keynote Address to Hipparch Workshop, London 1998, on “Safe Active Networks”
- Invited Seminar to HP Research Labs, Bristol, on “A Design Framework for Adaptive Applications”, May 1998
- Tutorial on Internet Security to Mednet Conference, Brighton 1997

- Tutorial on Internet Multimedia to IEEE Globecom, London. November 1996
- Tutorial on Internet Multimedia to Mednet Conference, Brighton 1996
- Invited seminars to Cambridge, Edinburgh, Southampton, Lancaster, Surrey, Kent, UCL and others.

9 Books and Refereed Publications

- [1] Jon Crowcroft and Ian Wakeman. Traffic analysis of some uk-us academic network data. In *INET '91*, June 1991.
- [2] Ian Wakeman. Emerging high speed transfer protocols. In *Third IEE Conference on Telecommunications*, Edinburgh, UK, March 1991.
- [3] Dejan Sirovica, Zheng Wang, Jon Crowcroft, and Ian Wakeman. Is layering harmful? *IEEE Network*, 6(1):20–24, January 1992.
- [4] Ian Wakeman, Dave Lewis, and Jon Crowcroft. Traffic analysis of transatlantic traffic. In *Proceedings of INET92*, Kobe, Japan, June 1992.
- [5] Jon Crowcroft, Steve Hailes, Mark Handley, Ajit Jena, David Lewis, and Ian Wakeman. Multimedia traffic characterisation. In *IEE International Conference on Telecommunications 93*, Manchester, England, April 1993.
- [6] Ian Wakeman. Packetised video: Options for interaction between the user, the network and the codec. *The Computer Journal*, 36,1, 1993.
- [7] Ian Wakeman, Dave Lewis, and Jon Crowcroft. Traffic analysis of transatlantic traffic. *Computer Communications*, pages 376,388, June 1993.
- [8] Ian Wakeman, Frank Wilson, and Walter Smith. Quality of service parameters for commercial application of video telephony. In *Human Factors in Telecommunication Symposium*, Darmstadt, Germany, March 1993.
- [9] Jon Crowcroft, Mark Handley, and Ian Wakeman. Turning the internet into skynet - multicasting multimedia. In *Proc of UKUUG IP Event*, October 1994.
- [10] Ian Wakeman, Jean Bolot, and Thierry Turletti. Multicast congestion control in the distribution of variable bit rate video in the internet. In *Proceedings ACM SIGCOMM 94*. ACM, August 1994.

- [11] Ian Wakeman and Jon Crowcroft. A combined admission and congestion control scheme for variable bit rate video. *Journal of Distributed Systems Engineering*, July 1994.
- [12] Ian Wakeman. *Congestion Control for Packetised Video in the Internet*. PhD thesis, UCL, 1995.
- [13] Ian Wakeman, Atanu Ghosh, Jon Crowcroft, Van Jacobson, and Sally Floyd. Implementing real time packet forwarding policies using streams. In *Proceedings of Winter Usenix 95*. Usenix, January 1995.
- [14] Ian Wakeman, Mark Handley, and Jon Crowcroft. CCCP: Conference control channel protocol - a scalable base for building conference control applications. In *Proc. ACM SIGCOMM95*, pages 275–287, Boston Ma., August 1995. ACM.
- [15] Ian Wakeman, Andy Ormsby, and Malcolm McIlhagga. An architecture for adaptive retrieval of networked information resources. In *IEE Colloquium on Personal Communication Systems*, May 1997.
- [16] Malcolm McIlhagga, Ann Light, and Ian Wakeman. Giving the user the choice between a picture and a thousand words. In *Proceedings from the First Workshop on HCI and Mobile Devices*, Glasgow, May 1998.
- [17] Malcolm McIlhagga, Ann Light, and Ian Wakeman. Towards a design methodology for adaptive applications. In *Fourth ACM/IEEE International Conference on Mobile Computing and Networking (MobiCom'98)*, pages 133–144, October 1998.
- [18] Ian Wakeman, Andy Ormsby, and Malcolm McIlhagga. Signalling in a component based world. In *First IEEE Conference on Open Architectures for Signalling*, pages 33–45, San Francisco, Ca, April 1998.
- [19] Jon Rimmer and Ian Wakeman. Who helps the helpers - technological change in the helpdesk. In *Workshop on Ethnographic Studies in Real and Virtual Environments: Inhabited Information Spaces and Connected Communities*, Edinburgh, January 1999. Esprit.
- [20] Jon Rimmer, Ian Wakeman, Louise Clark, and Angela Sasse. Examining users' repertoire of internet applications. In M.A. Sasse and C. Johnson, editors, *Human-Computer Interaction INTERACT '99*, pages 654–660, Edinburgh, UK, August 1999. British Computer Society, IOS Press.
- [21] Ian Wakeman and Rory Graves. Accounting for qos in programmable networks. In *IEE Symposium on Accounting for Next Generation Networks*, London UK, October 1999. IEE.
- [22] Rory Graves and Ian Wakeman. Atom: Active totally ordered multicast. In *Proceedings of the International Workshop on Active Networks*, Tokyo, Japan, October 2000.

- [23] Ann Light and Ian Wakeman. "my name's chris...": The effect of producer visibility on the use of interactive websites. In *OzCHI*, Sydney, Australia, December 2000.
- [24] Jon Rimmer, Ian Wakeman, Louise Clark, and Angela Sasse. Messages from a tangled web. In *OzCHI*, Sydney, Australia, December 2000.
- [25] Nicholas Sharples and Ian Wakeman. Protocol construction using genetic search techniques. In *Real-World Applications of Evolutionary Computing*, volume 1803, Edinburgh, UK, 2000. Springer.
- [26] Louise Sheeran, Angela Sasse, Jon Rimmer, and Ian Wakeman. Back to basics: Is a better understanding of the internet a precursor for effective use of the web? In *NORDICHI*, 2000.
- [27] Louise Sheeran, Angela Sasse, Jon Rimmer, and Ian Wakeman. How web browsers shape users' understandings of networks. In *Second Annual Conference on World Wide Web Applications*, Johannesburg, South Africa, September 2000.
- [28] Ian Wakeman, Alan Jeffrey, and Tim Owen. A language-based approach to programmable networks. In *IEEE Conference on Open Architectures and network Programming*, pages 128–138, Tel-Aviv, Israel, March 2000.
- [29] Adnan Al-Bar and Ian Wakeman. A survey of adaptive applications in mobile computing. In *International Workshop on Smart Appliances and Wearable Computing*, Phoenix, Az, April 2001. IEEE.
- [30] Ann Light and Ian Wakeman. Beyond the interface: Perceptions of interaction and audience on websites. *Interacting with Computers*, 13,3:325–353, February 2001.
- [31] Ian Wakeman, Alan Jeffrey, Tim Owen, and Damyan Pepper. Safetynet: A language-based approach to programmable networks. *Computer Networks and ISDN Systems*, 36,1:101–114, June 2001.
- [32] Tim Owen, Julian Rathke, Ian Wakeman, and Des Watson. A model for controlling program behaviour in pervasive networks. In *Fifth IEEE Workshop on Networked Appliance*, pages 65–69, Liverpool, UK, October 2002.
- [33] Sam Type, Ian Wakeman, and Steven Watt. Smarter service location. In *Fifth IEEE Workshop on Networked Appliance*, pages 115–121, Liverpool, UK, October 2002.
- [34] Ashish Umre and Ian Wakeman. Cost/benefit: Information dissemination in distributed systems. In *2nd International Workshop on the Mathematics and Algorithms of Social Insects*, pages 168–173, Atlanta, Ga, December 2003.

- [35] Ian Wakeman, David Ellis, Tim Owen, Julian Rathke, and Des Watson. Risky business: Motivations for markets in programmable networks. In *Proceedings of the fifth International Workshop on Active Networks*, volume 2982 of *Lecture Notes in Computer Science*, pages 266–279, Kyoto, Japan, December 2003. Springer.
- [36] Jon Robinson, Ian Wakeman, and Tim Owen. Scooby: Middleware for service composition in pervasive computing. In *2nd International Workshop on Middleware for Pervasive and Ad-Hoc Computing*, pages 161–166, Toronto, Canada, October 2004.
- [37] Julie Weeds, Bill Keller, David Weir, Ian Wakeman, Jon Rimmer, and Tim Owen. Natural language expression of user policies in pervasive computing environments. In *Proceedings of OntoLex 2004 (LREC Workshop on Ontologies and Lexical Resources in Distributed Environments)*, Lisbon, Portugal, May 2004.
- [38] Bill Keller, Tim Owen, Ian Wakeman, Julie Weeds, and David Weir. Middleware for user controlled environments. In *PerCom Workshops 2005*, pages 183–188, Hawaii, USA, 2005.
- [39] Tim Owen, Ian Wakeman, Bill Keller, Julie Weeds, and David Weir. Managing the policies of non-technical users in a dynamic world. In *IEEE 6th International Workshop on Policies for Distributed Systems and Networks*, pages 251–254, Stockholm, Sweden, June 2005.
- [40] Jon Rimmer, Tim Owen, Ian Wakeman, Bill Keller, Julie Weeds, and David Weir. User policies in pervasive computing environments. In *User Experience Design for Pervasive Computing, Pervasive 2005*, Munich, Germany, May 2005.
- [41] David Ellis and Ian Wakeman. Lessons for autonomic services from the design of an anonymous dos protection overlay. In *Autonomic Networking*, pages 86–96, Paris, 2006.
- [42] S. Naicken, A. Basu, B. Livingston, S. Rodhetbhai, and I. Wakeman. Towards yet another peer-to-peer simulator. In *Proceedings of The Fourth International Working Conference on Performance Modelling and Evaluation of Heterogeneous Networks (HET-NETs)*, Ilkley, UK, August 2006.
- [43] A. Basu, I. Wakeman, and D. Chalmers. A behavioural model for consumer reputation. In *IWSOS 2007*, September 2007.
- [44] Michael Fry, Glen McLarty, and Ian Wakeman. Using overlays to support context awareness. In *Third Workshop on Context Awareness for Proactive Systems*, Surrey, June 2007.
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- [48] Anirban Basu, Dan Chalmers, Ian Wakeman, and Jon Robinson. The north laine shopping guide: A case study in modelling trust in applications. In *IFIPTM*, pages 183–197. Springer Boston, May 2008.
- [49] Anirban Basu, Ian Wakeman, and Dan Chalmers. A behavioural model for client reputation. In *Proceedings of Trust in Mobile Environments (workshop in IFIPTM 2008)*, Trondheim, Norway, 2008. Springer-Verlag.
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- [51] Roya Feizy, Ian Wakeman, and Dan Chalmers. Are your friends who they say they are?: data mining online identities. *Crossroads*, 16(2):19–23, 2009.
- [52] Roya Feizy, Ian Wakeman, and Dan Chalmers. Distinguishing fact and fiction: Data mining online identities. In *Proceedings of 5th International Workshop on Security and Trust Management (STM 2009)*, September 2009.
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- [54] Renan Krishna, Ian Wakeman, and Dan Chalmers. Investigating bigraphs to model dynamic service substitution in pervasive computing scenarios. In *Proceedings of Workshop on Formal Approaches to Ubiquitous Systems (FAUSt 2009)*, London, UK, 2009.
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- [57] Ann Light, Ian Wakeman, Jon Robinson, Dan Chalmers, and Anirban Basu. Chutney and relish: Designing to augment the experience of shopping at a farmers' market. In *OzCHI*, Brisbane, Australia, November 2010.
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- [61] Ian Wakeman, Ann Light, Jon Robinson, Anirban Basu, and Dan Chalmers. Bringing the virtual to the farmers' market: Designing for trust in pervasive computing systems. In *Fourth IFIP Conference on Trust Management*, Morioka, Japan, June 2010. Springer-Verlag.
- [62] Dan Chalmers, Simon Fleming, Ian Wakeman, and Des Watson. Rhythms in twitter. In *Proceedings of 1st International Workshop on Social Object Networks (SocialObjects 2011)*. IEEE, 2011.
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