

CURRICULUM VITAE: DAVID MICHAEL EYERS

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Phone: +44 1223 763667
Date of birth: 3rd July 1976
Nationality: Dual Australian/British citizenship
Qualifications: Ph.D. (Cantab),
BE/BSc (Hons I), University of New South Wales, Australia

CURRENT EMPLOYMENT

- Senior Research Associate on the EPSRC SmartFlow project, University of Cambridge Computer Laboratory, 2009–2012
- Associate of the Senior Combination Room, King's College, Cambridge, 2009–
- Post-Doctoral Teaching Associate, King's College, Cambridge, 2005–2009
- Academic Associate, Pembroke College, Cambridge, 2005–
- Special Supervisor, Newnham College, Cambridge, 2008–
- King's College IT consultant and web team member, 2004–

PREVIOUS EMPLOYMENT

- Research Associate on the EPSRC CareGrid project, University of Cambridge Computer Laboratory, 2007–2009
- Research Associate on the EPSRC Contract Driven Applications project, University of Cambridge Computer Laboratory, 2004–2007
- Webmaster, King's College, Cambridge, 2004–2007

ACADEMIC ACHIEVEMENTS

PhD student (University of Cambridge), 2002–2005

- Graduated 13th May 2006
- Orde Poynton Cambridge Australia Trust Scholarship
- Overseas Research Student Award

PhD student (University of New South Wales), 2000–2001

- Australian Postgraduate Award
- University of New South Wales Teaching Scholarship
- Additional University of New South Wales Teaching Scholarship for exceeding teaching/administration requirements

BE/BSc(Comp. Eng.)(Hons 1) (University of New South Wales), 1995–2000

- Thesis mark of 95
- High Distinction coursework average

PROFESSIONAL SOCIETIES

- Institute of Electrical and Electronics Engineers, 2000–
- Association for Computing Machinery, 2007–

SERVICE

- IEEE Policy programme committee (PC) member, 2009–
- IEEE/ACM Middleware Conference, PC, 2009
- Symposium on Access Control Models and Technologies (SACMAT), PC, 2008–
- European Conference on Web Services (ECoWS), PC, 2005–
- Workshop on Middleware Security (MidSec), PC, 2008–
- Distributed Event-Based Systems (DEBS) doctoral symposium reviewer, 2009
- Distributed Event-Based Systems (DEBS) local arrangements co-chair, 2010
- IFIP WG11.3 conference local arrangements team, 2002

TEACHING

University of Cambridge lecturing 2007–

- Prolog lecturer (2008–2010)
- LECTURED TOPICS IN DISTRIBUTED SYSTEMS COURSE (2008–2009)
- Co-lectured Digital Communications II (2007–2008)

University of Cambridge supervising 2001–

- Introductory Java programming
 - Comparative architectures
 - Natural language processing
 - Human-computer interaction
 - Computer graphics
 - Prolog
 - Digital communications
 - Profession practice and ethics
 - Computer design
 - Database systems
 - Compiler construction
 - Concurrent and Distributed Systems
 - Artificial Intelligence
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- Invited interviewer for Cambridge undergraduate Computer Science applicants: Pembroke College (2004–), King's College (2005)
 - Awarded Pembroke Teaching prize (2004)

- Supervised fifteen Part II and Diploma student projects since 2003. Dissertations ranged from operating system topics, through graphics and HCI to database systems
- Sutton Trust summer school teacher, 2007–2009. The trust aims to improve the educational opportunities for young people from non-privileged backgrounds
- Computer Laboratory coordinator for Sutton Trust summer school in 2010
- Course adviser on the ACS MPhil course, 2009

University of New South Wales 1997–2001

- Introductory Java programming
- Introductory ‘C’ programming
- Introductory functional programming
- Object-oriented programming
- Computer graphics
- Lectured the database systems course (2000)

INVITED TALKS (EXTERNAL)

- “Incorporating Security into Distributed Publish / Subscribe Systems”, Large-Scale Distributed Systems Group seminar series, DSE, Department of Computing, Imperial College, London, February 2010
- “Using Open Source Software for network management”, Oxford/Cambridge College Information Technology Management Group (CITMG) conference, Bletchley Park, December 2008.
- “Using wikis for website content management”. University of Cambridge Web Liaison Group, November 2006
- “Distributed, Event-driven Electronic Business Interactions”. OPIM Talk series, Wharton School, UPenn, USA, April 2005
- “OASIS Role-Based Access Control in Healthcare”, IBHIS RBAC Workshop, UMIST, Manchester, January 2004

PEER-REVIEWED RESEARCH PUBLICATIONS

Distributed messaging, information flow control and access control

- (1) Migliavacca, M., Papagiannis, I., **Eyers, D.**, Shand, B., Bacon, J., Pietzuch, P. **High-Performance Event Processing with Information Security**, accepted to USENIX Annual Technical Conference (USENIX ATC), to appear, Boston, MA, USA, 2010.
- (2) **Eyers, D.**, Roberts, B., Bacon J., Migliavacca, M., Papagiannis, I., Pietzuch, P., Shand, B. **Event-Processing Middleware with Information Flow Control (Poster)**, In *10th International ACM/IFIP/USENIX Middleware Conference (Middleware'09)*, Urbana Champaign, Illinois, USA, November, 2009.
- (3) **Eyers, D.**, Routray, R., Zhang, R., Willcocks D., Pietzuch, P. **Towards a Middleware for Configuring Large-scale Storage Infrastructures**, In *7th International Workshop on Middleware for Grids, Clouds and e-Science (MGC'09)*, Urbana Champaign, Illinois, USA, November, 2009.

- (4) Papagiannis, I., Bacon, J., **Eyers, D.**, Migliavacca, M., Pietzuch, P., Shand, B. **PrivateFlow: Decentralised Information Flow Control in Event Based Middleware (Demo)**, In *3rd ACM International Conference on Distributed Event-Based Systems (DEBS)*, Nashville, TN, USA, July, 2009.
- (5) Bacon, J., **Eyers, D.**, Singh, J., Shand, B., Migliavacca, M., Pietzuch, P. **Security in Multi-domain Event-based Systems**. In *Information Technology*, ISSN 1611-2776, special issue on event-based systems, to appear.
- (6) Bacon, J., **Eyers, D.**, Singh, J. **Securing event-based systems**. In Annika Hinze and Alex Buchmann (eds.), *Handbook of Research on Advanced Distributed Event-Based Systems*, IGI Global, to appear.
- (7) Bacon, J., **Eyers, D.**, Singh, J., and Pietzuch, P. **Access control in publish/subscribe systems**. In *DEBS '08: Proceedings of the second international conference on Distributed event-based systems*, pages 23-34, New York, NY, USA, 2008. ACM.
- (8) Evans, D. and **Eyers, D.** **Deontic logic for modelling data flow and use compliance**. In *MPAC '08: Proceedings of the 6th international workshop on Middleware for pervasive and ad-hoc computing*, pages 19-24, New York, NY, USA, 2008. ACM.
- (9) **Eyers, D.**, Srinivasan, S., Moody, K., and Bacon, J. **Compile-time enforcement of dynamic security policies**. In *Policy 2008, IEEE 9th International Workshop on Policies for Distributed Systems and Networks*, pages 119-126, Palisades, NY, USA, June 2008. IEEE Computer Society.
- (10) Singh, J., **Eyers, D.**, and Bacon, J. **Controlling historical information dissemination in publish/subscribe**. In *MidSec '08: Proceedings of the 2008 workshop on Middleware security*, pages 34-39, New York, NY, USA, 2008. ACM.
- (11) Singh, J., **Eyers, D.**, and Bacon, J. **Credential management in event-driven healthcare systems**. In *Proceedings of the ACM/IFIP/USENIX Middleware '08 Conference Companion*, pages 48-53, New York, NY, USA, 2008. ACM.
- (12) Pesonen, L., **Eyers, D.**, Bacon, J. **Encryption-Enforced Access Control in Dynamic Multi-Domain Publish/Subscribe Networks**. In *Proceedings of the International Conference on Distributed Event-Based Systems (DEBS'07)*, pp 104-115. ACM Press, June 2007.
- (13) Pietzuch, P., **Eyers, D.**, Kounev, S., Shand, B. **Towards a Common API for Publish/Subscribe**. In *Proceedings of the International Conference on Distributed Event-Based Systems (DEBS'07)*, pp 152-157 (short). ACM Press, June 2007.
- (14) **Eyers, D.**, Bacon, J., Moody, K. OASIS Role-Based Access Control for electronic health records. *IEE Software*, 153 (1), pp 16-23, February 2006
- (15) Pesonen L., **Eyers, D.**, Bacon, J. **A Capabilities-Based Access Control Architecture for Multi-Domain Publish/Subscribe Systems**. In *Proceedings of the Symposium on Applications and the Internet (SAINT 2006)*, pp 222-228, Phoenix, AZ, January 2006. IEEE, IEEE
- (16) Bacon, J., **Eyers, D.**, et al. **Securing Publish/Subscribe for Multi-domain Systems**. In *Proceedings of the 6th International Middleware Conference*, pp 1-20, Grenoble, France, November 28 - December 2, 2005
- (17) Dimmock N., Belokosztolszki, A., **Eyers, D.**, et al. **Using trust and risk in role-based access control policies**. In *Proceedings of Symposium on Access Control Models and Technologies*, pp 156-162. ACM, ACM, June 2004
- (18) Belokosztolszki, A, **Eyers, D.** and Moody, K. **Policy contexts: Controlling information flow in parameterised RBAC**. In *IEEE 4th International Workshop on Policies for Distributed Systems and Networks*, pp 99-110, June 2003
- (19) Belokosztolszki, A., **Eyers, D.**, Wang, W., et al. **Policy storage for role-based access control systems**. In *Proceedings of the 12th IEEE International Workshops on Enabling Technologies: Infrastructure for Collaborative Enterprises (WETICE'03)*, pp 196-201, June 2003

- (20) Belokosztolszki, A. and **Eyers, D. Shielding RBAC infrastructures from cyberterrorism**. In *Research Directions in Data and Applications Security*, volume 256 of *IFIP Information Processing*, pp 3-14. Kluwer Academic Publishers, 2003
- (21) Belokosztolszki, A., **Eyers, D.**, Peitzuch, P. et al. **Role-based access control for publish/subscribe middleware architectures**. In *International Workshop on Distributed Event-Based Systems (DEBS03)*, 2003

Electronic Contract Management

- (22) Kimbrough, S., Abrahams, A., Jones, A., **Eyers, D.**, and Bacon, J. **Introducing the Fair and Logical Trade Project**. *International Journal of Business Process Integration and Management (IJBPIM)* special issue on Contract Architectures and Languages, to appear.
- (23) Abrahams, A., **Eyers, D.**, and Bacon, J. **Structured storage of legal precedents using a minimal deontic ontology, for computer assisted legal document querying**. *International Journal of Metadata, Semantics and Ontologies (IJMSO)*, to appear.
- (24) Evans, D. and **Eyers, D. State needed to infer data use compliance in distributed transport applications**. In the *workshop on Pervasive Technologies for Improved Mobility and Transportation (InMotion '09)*, May 11, 2009, Nara, Japan. To appear in Pervasive 2009 adjunct proceedings.
- (25) **Eyers, D.**, Jones, A., Kimbrough, S. **On Logic and Standards for Structuring Documents**. In C. Weinhardt, S. Luckner, and J. Stoßer (Eds.), *Proceedings of the seventh workshop on e-business (WeB 2008)*, LNBI 22, pp. 172–186, 2009. Springer-Verlag Berlin Heidelberg 2009
- (26) **Eyers, D.**, Kimbrough, S., Jones, A. **Reflecting on Events** (abstract), *Workshop on Formal Modelling in Electronic Commerce*, Stanford, Palo Alto, Jun 2007.
- (27) **Eyers, D.**, Abrahams, A. **Orthogonal Truths, Electronic Beholders and the Event Calculus** (abstract), *Workshop on Formal Modelling in Electronic Commerce*, Stanford, Palo Alto, Jun 2007.
- (28) Abrahams, A., **Eyers, D.**, Bacon, J. **Mapping legal cases to RDF named graphs using a minimal deontic ontology for computer-assisted legal inference**. In *Proceedings of the First International Workshop on Semantic Web technology for Law*, pp 11-20, Stanford, Palo Alto, CA, June 2007.
- (29) Abrahams, A., **Eyers, D. Using annotated policy documents as a user interface for process management**. In *Proceedings of the First International Workshop on Knowledge-based User Interfaces (KUI07)*, Athens, Greece, June 2007.
- (30) Kimbrough, S., Abrahams, A., Jones, A., **Eyers, D.**, and Bacon, J. **Introducing the Fair and Logical Trade Project**. In *Proceedings of the workshop on Contract Architectures and Languages (CoALa2005)*, Enschede, September 2005
- (31) Abrahams, A., **Eyers, D.** and Bacon, J. **Practical Contract Storage: Checking, and Enforcement or Business Process Automation**. In S.O. Kimbrough and D.J. Wu, editors, *Formal Modeling for Electronic Commerce: Representation, Inference, and Strategic Interaction*, International Handbooks on Information Systems, pp 33-77. Springer, 2005
- (32) **Eyers, D.**, Abrahams, A., Bacon, J., Kimbrough, S., and Moody, K. **Message Representation and Inferencing in the Fair and Logical Trade Project**. In *Workshop on Formal Modeling for Electronic Commerce (FMEC2005)*, Bologna, Italy, June 2005
- (33) Abrahams, A., **Eyers, D.** and Bacon, J. **An event-based paradigm for e-commerce application specification and execution**. In *Proceedings of the 7th International Conference on Electronic Commerce Research (ICECR7)*, pp 181-192, Dallas, Texas, June 2004
- (34) Abrahams, A., **Eyers, D.** and Bacon, J. **Towards a benchmark for e-contract checking and monitoring**. In *Proceedings of the 7th International Conference on Electronic Commerce Research (ICECR7)*, pp 246-252, Dallas, Texas, June 2004

- (35) Abrahams, A., **Eyers, D.** and Bacon, J. **Compliance checking for regulated communities.** In *Proceedings of the 5th CaberNet Plenary Workshop*, Porto Santo, Madeira Archipelago, Portugal, November 2003
- (36) Abrahams, A., **Eyers, D.** and Bacon, J. **An Asynchronous Rule-based Approach for Business Process Automation Using Obligations.** In *Proceedings of the 3rd ACM SIGPLAN Workshop on Rule-Based Programming (RULE'02)*, pp 93-103, October 2002
- (37) Abrahams, A., **Eyers, D.** and Bacon, J. **Mechanical Consistency Analysis for Business Contracts and Policies.** In *Proceedings of the 5th International Conference on Electronic Commerce Research (ICECR5)*, pp 1-18, Montreal, Canada, October 2002
- (38) Abrahams, A., **Eyers, D.** and Bacon, J. **A Coverage Determination Mechanism for Checking Business Contracts Against Organizational Policies.** In *Proceedings of the 3rd VLDB Workshop on Technologies for E-Services (TES'02)*. Hong Kong, China, August 2002

Other Subjects (abridged for space)

- (39) 2004: A tutorial task and tertiary courseware model for collaborative learning communities.
- (40) 2003: Credential negotiation with limited disclosure via iterative range refinement in an unordered space.
- (41) 2003: Collaborative, dynamic control of MIDI sequencers.
- (42) 2002: Merging Prolog and XML databases.
- (43) 2001: Investigating the stability of colour-histogram feature-extraction under a non-domain specific distance metric.

A selection of Research Publications in Preparation or Under Review

- (44) “Using Information Flow Labels to Enforce Access Control Policy in Distributed, Event-based Systems”, under review.
- (45) “A Model for Information Flow Control in Distributed, Event-based Systems”, book chapter under review.
- (46) “Relational database support for event-based middleware functionality”, under review.
- (47) “Enforcing User Privacy in Web Applications using Erlang”, under review.
- (48) “Linking policies to the spatial environment”, under review.
- (49) “Efficient policy checking across administrative domains”, under review.
- (50) “Policy Generation Framework for Large-Scale Storage Infrastructures”, under review.
- (51) “Orthogonal Truths, Electronic Beholders and the Event Calculus”, awaiting co-author involvement. Intended for the Journal of Data & Knowledge Engineering
- (52) “Reflecting on Events”, for the Journal of Data and Knowledge Engineering
- (53) “An RDF ontology for the event calculus”, awaiting submission
- (54) “Indexing large event calculus models”, awaiting submission

TECHNICAL PROFICIENCIES

- Open Source Developer. My projects include:
 - **WebNAG.** A network authentication gateway. Used at many locations including King’s (augmented to do complete student registration), Darwin and Selwyn Colleges, the Graduate Union, and the Varsity Newspaper
 - **BOB:** An simple on-line ballot box. Used for University-wide, on-line student elections within Cambridge—it is the core of the CUSU voting service.
 - **WikiWeb:** A web content management framework built using innovative meta-programming extensions to MediaWiki

- Completed University Computing Service courses in Microsoft Windows system administration and Active Directory management
- Experienced Linux/(Open)Solaris/MacOS system administrator
- Programming proficiency: C++, Python, Ruby, Perl, PHP, Prolog, Shell, Java, JavaScript, XML technologies and many others
- Chief Technical Officer for WAPscan in 2000; a WAP portal site aimed at youth in Sydney: selected to proceed to the final round of the Nokia WAP Hothouse competition
- Software development and out-of-hours network and systems support for the King's College Computing office 2002–
- Domain-specific tools: in particular Adobe Photoshop; Adobe Illustrator; QuarkXPress; and Adobe InDesign; numerous MIDI sequencer packages; multi-track audio editing; video editing; DVD production; 3D ray-traced animation; MS/Open Office applications

SELECTED CULTURAL AND SPORTING ACHIEVEMENTS

LEADERSHIP

- Cambridge Graduate Union Executive Member (2003–2004)
- design and lay-out of 2003 Graduate Handbook
- helped coordinate the organisation's computing strategy
- President, King's College Graduate Society (2002–2003)
- Vice-President, University of New South Wales Union (1998)
- School Captain, Sydney Boys' High School (1994)

MUSICAL AND THEATRICAL

- King's Voices mixed choir (second choir for King's College, Cambridge) (2001–)
- King's Voices close harmony quintet (2003–)
- Roles in 17 University of New South Wales revues: producer / director / cast / vocal director / technical director / robotic and theatre lighting / video editing / sound (1996–2001)
- Cambridge: lighting setup and operation, Footlights Revue "Have you seen Sarah Brown?" (2003)
- Instruments: piano, guitar, and tuba, and conducted school concert band and university vocal ensembles.
- Performances: live synthesizer performances, co-founder of the short-lived electronic music group "Ambiguous" (2001)

SPORTING

- XPress Men's VIII (2007,2009–)
- Won “Blades” in the King's Men's 2nd VIII (2007)
- King's Men's 1st VIII (2001–2003)
- Substitute for the division-winning Head of the Cam and Head to Head King's Men's 1st VIII crews (2004)
- University of New South Wales Mens' Eight, Intervarsity (1996)
- Selected to row for the NSW Academy of Sport, junior lightweight, Australian Nationals (1995)
- Sydney Boys' High School 1st VIII (1993–1994); rowing blue

DEBATING

- Member of University of New South Wales #2 team, Australasian Intervarsity Debating Competition (1996)
- Coach, first grade Sydney Boys' High School debating team (1996)
- Member of Sydney Boys' High School first grade debating team (1993–1994)

CLUBS AND SOCIETIES

- Committee member and webmaster, Cambridge Australia and New Zealand Society, and the Cambridge Commonwealth Society (2003–2007)
 - Layout and design for the Cambridge ‘GOWN’ magazine (issue 4).
 - External Officer and Webmaster, King's College Graduate Society (2003–2004)
- Committee Member of the following University of New South Wales Clubs and Societies: CompSoc; CyberSoc; Debating Society, Wyrld Siblings, SOUP, Law Revue Society, and Medical Revue Society.

GENERAL

- Graduate student representative, University of Cambridge Information Technology Syndicate (2005)
- Volunteer editor, IEEE Distributed Systems Online (2002–2004)
- University of New South Wales Union, Heinz Harant Award for contributions to campus life and Union events (2001)
- University of New South Wales Graduand Award for contributions to university life (2000)
- Sydney 2000 Olympic Games website editor (voluntary) (2000)
- Orientation Week Organising Team, University of New South Wales—Publicity Portfolio (1999)
- Caltex Medal, Sydney Boys' High School: “Best All-rounder” (1994)