

## Dr. Timothy Paul James Kindberg

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### Profile and personal statement

Over two decades of experience in computer systems, applications & human-computer interaction. Expert in mobile, distributed & pervasive computing: textbook author and practitioner. Excellent skills in developing new types of mobile interaction. Leader in Mobile Codes (2D barcodes) standards development. Published widely in conferences and journals. Proven communicator in technology, business and media sectors. Team leader, architect & developer for mobile (J2ME, Symbian C++, WinCE, iPhone, Android), client (C, Java, Javascript), server (J2EE, LAMP, Perl) & kernel (C, assembler).

Career objective is to apply this expertise to maximum impact by deploying compelling new types of mobile technology for widespread use. As the career highlights below demonstrate, I have consulted to, networked and collaborated extensively with many stakeholders, including publishers, media companies, operators, handset companies and technology providers. I have a long experience of providing leadership and evangelising technologies to enhance the human experience.

### Highlights

**Mobile codes.** Brought Publicis, Nokia and others together to kick-start the development of marketing-driven standards for barcodes read by camera phones: a key step for widespread adoption and thus a global commercial ecosystem. Co-chair & co-founder, Mobile Codes Consortium ([www.mobilecodes.org](http://www.mobilecodes.org)). Member & editor, Mobile Codes group, Open Mobile Alliance. Delivered value proposition for HP through development of a mobile client and services, plus public trials with the BBC and News International ([www.activeprint.org](http://www.activeprint.org)).

**Cityware.** Led Security, Privacy & Trust work package in this £1m UK government-funded project between HP, U. Bath & others. Advanced state of the art in urban computing research methodologies, measuring mass mobile usage phenomena; led development of protection against urban phishing attacks.

**Cooltown.** Wrote highly cited publications on this seminal pervasive computing project, including own work on context-dependent information services, to gain premier research status for HP. Architect & developer for pioneering context-aware electronic guidebooks, at San Francisco's Exploratorium.

**Mushroom.** Won EPSRC grants & led research into groupware for professionals with stringent data integrity & security requirements. Architect, developer, ethnographer. (Queen Mary, London)

**Equus.** Architect & chief developer for this OS kernel & adaptation run-time for shared multiprocessors, which won VC funding. Precursor to cloud computing concept. (U. Westminster, Zebra Parallel)

### Career Summary

2009-present **Founder, Matter 2 Media Ltd**

Consultancy and technology for the mobile and digital media industries.

1999-2009 **Senior Researcher, Hewlett-Packard Labs, Palo Alto 1999-2003 & Bristol 2003-present**

Researcher and thought-leader in mobile and pervasive computing systems, security and human factors. Developed innovative prototypes, designed and ran experiments, and investigated user behaviour in relation to technology, all working in teams. Internal expert and industry leader and collaborator in mobile (bar)code ecosystem development (see Mobile Codes, above). Visiting professor at the University of Bath.

1990-1999 **Senior Lecturer, Department of Computer Science, Queen Mary, University of London**

Principal Investigator, architect & development team leader on three government-funded research projects, in total £400k. Led research and development on object-oriented middleware, secure support for remotely collaborating clinicians' shared data, and distributed multimedia middleware.

Dr. Tim Kindberg

- 1988-1989 **Principal Software Engineer, Zebra Parallel Ltd**  
Software architect and team leader. This venture capital-funded start-up was formed to productise and market Equus, the parallel processing environment from my PhD work.
- 1984-1988 **Research Fellow, Polytechnic of Central London (now U. Westminster)**  
Distributed operating systems research. Kernel development project manager & architect.
- 1981-1984 **Teacher, Collingwood School, London; Instructor, Notting Dale Information Technology Centre**

### Academic Qualifications

- 2006-2009 Visiting Professor, Computer Science Department, University of Bath
- 1985-1990 PhD Reconfiguring Distributed Computations, University of Westminster
- 1977-1980 BA (Hons.) Mathematics (2.1). University of Cambridge, St. John's College

### Industrial Consortia & Standards

- 2008-2009 **Member & editor, Mobile Codes group, Open Mobile Alliance**  
Developing standards for barcodes read by camera phones.
- 2007-2009 **Co-chair & co-founder, Mobile Codes Consortium ([www.mobilecodes.org](http://www.mobilecodes.org))**  
Initiated standards development for barcodes read by camera phones, with Publicis & Nokia.

### Publications (see list on page 3)

Key impact: "People, Places and Things: Web Presence for the Real World" (about 80 citations); *Distributed Systems—Concepts and Design* (textbook soon to be in its 5th edition).

Six papers in Ubicomp, the premier conference on Ubiquitous Computing.

Three papers in *IEEE Pervasive Computing*, one of the top publications in the field.

Two papers in the International WWW Conference, the premier venue for papers on the web.

### Patents

Four patents granted, 16 others filed

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|----------------|---|
| U.S. 7,644,276 | Method for verifying a secure association between devices             |
| U.S. 7,370,200 | Validation for Secure Device Association                              |
| U.S. 7,243,233 | System and Method for Secure Communication Between Electronic Devices |
| U.S. 6,550,685 | Method and Apparatus Utilizing Visually Distinctive Barcodes          |

### Awards, Press

Two 2005 Royal Television Society Technology Awards (Technology in Content Delivery) for Coast Mobile Interactive, a joint project with the BBC in support of major TV series *Coast*.

Quoted about camera phones and 2D Barcodes in *Financial Times* (Feb 26, 2007), *New York Times* (April 1, 2007), *Toronto Globe and Mail* (Sep 7, 2007), and *Welt am Sonntag* (Sep 16, 2007).

### Research Community

Associate editor in chief of *IEEE Pervasive Computing*; co-editor of many special issues; keynote presenter; panellist; conference and workshop chair; member of many programme committees.

### Personal Interests

I sing in a community choir, Junction 3 Chorus, and write songs for voice and guitar. Director and editor of Magma poetry magazine ([www.magmapoetry.com](http://www.magmapoetry.com)). Creative writing.

### References

Available on request.

## Publications 2002-Present

1. Tim Kindberg, James Mitchell, Jim Grimmett, Chris Bevan, Eamonn O'Neill (2009). "Authenticating public wireless networks with physical evidence". In *proc. SecPriWiMob 2009* (IEEE).
2. Tim Kindberg, Eamonn O'Neill, Chris Bevan, James Mitchell, Jim Grimmett, Dawn Woodgate (2009). "Authenticating Ubiquitous Services: a Study of Wireless Hotspot Access". In *proc. Ubicomp 2009*.
3. "White Paper on Mobile Codes" (2008), "Mobile Codes Requirements" (2009). Open Mobile Alliance. I was a key contributor to both documents.
4. Tim Kindberg, Eamonn O'Neill, Chris Bevan, Vassilis Kostakos, Danaë Stanton Fraser, Tim Jay (2008). "Measuring Trust in Wi-Fi Hotspots". *Proc. CHI 2008*.
5. John Collomosse and Tim Kindberg (2008). "Screen codes: Visual Hyperlinks for Displays". *Proc. HotMobile 2008*.
6. John Collomosse and Tim Kindberg (2007). "Screen codes: efficient data transfer from video displays to mobile devices". One-page abstract in *proc. 4th European Conference on Visual Media Production (CVMP 2007)*.
7. Kenton O'Hara and Tim Kindberg (2007). Understanding user engagement with barcoded signs in the 'Coast' location-based experience. *Journal of Location Based Services*, Vol. 1, No. 4, pp. 256-273.
8. Tim Kindberg and Tim Jones (2007). "Merolyn the Phone: a study of Bluetooth naming practices". *Proc. Ubicomp 2007*.
9. Kenton O'Hara, Tim Kindberg, Maxine Glancy, Lucian Baptista, Byju Sukumaran, Gil Kahana, Julie Rowbotham. (2007). "Collecting and sharing location-based content on mobile phones in a zoo visitor experience". Special edition of Computer Supported Cooperative Work journal on leisure technologies, *CSCW Journal*, 16 (1-2).
10. Eamonn O'Neill, Vassilis Kostakos, Tim Kindberg, Ava Fatah gen. Schiek, Alan Penn, Danaë Stanton Fraser and Tim Jones (2006). "Instrumenting the city: developing methods for observing and understanding the digital cityscape". *Proc. Ubicomp 2006*. Note: I led and designed much of the experimentation described here.
11. George Coulouris, Jean Dollimore and Tim Kindberg (2005). *Distributed Systems: Concepts and Design* (4<sup>th</sup> edition). Post-/graduate textbook soon to be in fifth edition, translated into seven languages. Wrote a third of its 950 pages.
12. Tim Kindberg and Sandro Hawke (2005). "RFC 4151 - The tag URI Scheme". Note: this is widely used for globally unique identifiers, e.g. for Google Atom news feed items.
13. Tim Kindberg, Mirjana Spasojevic, Rowanne Fleck, and Abigail Sellen (2005). "The Ubiquitous Camera: an In-depth Study of Camera Phone Use". *IEEE Pervasive Computing*, Apr-Jun 2005 4(2), pp. 42-50.
14. Tim Kindberg, Mirjana Spasojevic, Rowanne Fleck and Abigail Sellen (2005). "I Saw This and Thought of You: Some Social Uses of Camera Phones". Short paper in *proc. CHI 2005*.
15. Tim Kindberg, Abi Sellen and Erik Geelhoed (2004). "Security and Trust in Mobile Interactions: A Study of Users' Perceptions and Reasoning". *Proc. Ubicomp 2004*, Nottingham, Oct.
16. Tim Kindberg & Kan Zhang (2003). "Secure Spontaneous Device Association". *Proc. Ubicomp 2003*.
17. Tim Kindberg & Kan Zhang (2003). "Validating and Securing Spontaneous Associations between Wireless Devices". *Proc. 6th Information Security Conference (ISC'03)*, Bristol, Oct.
18. John Barton, Tim Kindberg, Hui Dai, Nissanka B. Priyantha and Fahd Al-bin-ali (2003). "Sensor-enhanced Mobile Web Clients: an XForms Approach". *Proc. Twelfth International World Wide Web Conference*, Budapest, May.
19. Tim Kindberg, John Barton, Jeff Morgan, Gene Becker, Ilja Bedner, Debbie Caswell, Phillipe Debaty, Gita Gopal, Marcos Frid, Venky Krishnan, Howard Morris, Celine Pering, John Schettino, Bill Serra, and M. Spasojevic (2002). "People, Places, Things: Web Presence for the Real World". *MONET* vol. 7, no. 5, Oct. Also in *Proc. WMCSA 2000*.
20. Margaret Fleck, Marcos Frid, Tim Kindberg, Eamonn O'Brian-Strain, Rakhi Rajani, Mirjana Spasojevic (2002). "Rememberer: A Tool for Capturing Museum Visits". *Proc. Ubicomp 2002*, Sep.
21. Kan Zhang and Tim Kindberg (2002). "An Authorization Infrastructure for Nomadic Computing". *Proc. SACMAT*, Jun.
22. Tim Kindberg, Kan Zhang and Narendar Shankar (2002). "Context authentication using constrained channels". *Proc. WMCSA*, June 2002.
23. Tim Kindberg (2002). "Implementing Physical Hyperlinks using Ubiquitous Identifier Resolution". *Proc. 11th International World Wide Web Conference*, May.
24. Margaret Fleck, Marcos Frid, Tim Kindberg, Mirjana Spasojevic, Eamonn O'Brian-Strain, Rakhi Rajani (2002). "From Informing to Remembering: Deploying a Ubiquitous System in an Interactive Science Museum". *IEEE Pervasive Computing*, Apr-Jun.
25. Tim Kindberg and Armando Fox (2002). "System Software for Ubiquitous Computing". *IEEE Pervasive Computing*, vol. 1, no. 1, Jan-Mar, pp. 70-81.