

Lindsay Bradford

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PUBLICATIONS

- Seidel, S., Rosemann, M., Ter Hofstede, A. H. M. and Bradford, L.: Developing a business process reference model for the screen business – a design science research case study. The 17th Australasian Conference on Information Systems, Adelaide (2006).
- Bradford, L., Milliner, S., Dumas, M.: [Experience using a Coordination-based Architecture for Adaptive Web Content Provision](#), Proceedings of the 7th International Conference on Coordination Models and Languages, Springer-Verlag Heidelberg (2005). Acceptance ratio: 21.6%.
- Bradford, L., Milliner, S., Dumas, M.: [Scaling Dynamic Web Content Provision Using Elapsed-Time-Based Content Degradation](#), Proceedings of the 5th International Conference on Web Information Systems Engineering, Springer-Verlag Heidelberg (2004). Acceptance ratio: 22.7%.
- Bradford, L., Milliner, S., Dumas, M.: [Varying Resource Consumption to Achieve Scalable Web Services](#), Proceedings of the 4th VLDB Workshop on Technologies and E-Services, Springer-Verlag Heidelberg (2003).

EDUCATION

2002–2006	Doctor of Philosophy QUEENSLAND UNIVERSITY OF TECHNOLOGY
1994	Bachelor of Information Technology, Honours (2A) THE UNIVERSITY OF QUEENSLAND
1991–1993	Bachelor of Information Technology THE UNIVERSITY OF QUEENSLAND

PATENTS

- Primary author of the EU patent [Adaptive software components](#), granted 17/10/2007.

PROFESSIONAL SKILLS

Technical Skills	
Software Analysis and Design	UML 2.0, Entity-Relationship Modelling, Object Role Modelling, Event-Process Chains
Requirements Analysis and Management	

Languages	
Programming	Java, C++, C, Perl, VB-Script
Markup	HTML, CSS, L ^A T _E X XML, DTD, XSLT, XPath, XMLSchema
RDBMS / 4GLs	PostgreSQL 8, Progress V6–V8, Microsoft Access

Development Environments	
Requirements and Design Tools	DOORS, Enterprise Architect, StarUML
Development Tools	Eclipse, Subversion, Synergy, XPlanner, Ant, JUnit
Software Frameworks	Swing, JGraph, Xerces, Servlet, ROME, iCal4j
Operating Systems	Ubuntu, Fedora, DEC Alpha and SUN Unix Systems Windows 7, XP, 2000 and earlier

CAREER DETAIL

Invensys Rail Group

Mar 2008 – Jun 2010

R&D Systems Engineer

Mar 2008 – Jun 2010

- Software architecture & design for [ERTMS Level 2](#) demonstrator and Singapore DTL [CTC Software](#).
- Requirements analysis and management for ERTMS Level 2 demonstrator software and Singapore DTL CTC software.
- Training preparation & delivery for their [failover/communications framework](#).
- Mentoring and tutoring of new team members in the rail domain.

Queensland University of Technology

Nov 2002 – Mar 2008

Senior Research Associate

Mar 2006 – Mar 2008

- Part-time researcher for the [ARC](#) Centre of Excellence for Creative Industries and Innovation ([CCi](#)).
- Collaborated with researchers and industry partners to create accurate business process models of film and television production. Event-Process Chains (EPCs) were used for the modeling effort.
- Enhanced the [YAWLEditor](#) to better support users that must adapt business process models to executable workflow models.

Guest Lecturer and Tutor

Oct 2003 – June 2007

- Tutored an introductory XML Technologies subject for undergraduate students, covering XML, XPath, DTDs, XMLSchema and XBRL.
- Tutored and marked assignments for the subjects *Information Modeling for Databases* (SQL and Z Schema) and *Information System Modeling (Z Schema)*.
- Guest lectured undergraduate university students in *unanticipated software evolution* using a distributed object middleware, *software architecture* and scalability limitations of *Java Servlets*.

- My research topic was the investigation of approaches for dynamically adapting web service offerings to unexpected environmental change. I showed how it was possible to achieve scalability at a single-server by reprogramming the behaviour of a web server at run-time to match web client expectations by introducing new programming to the server as it ran, even in times of server overload.
- Primary author of several [refereed and published papers](#), the last of which was the basis of an [EU Patent](#).
- Acted as a reviewer for papers submitted to the [2004 ACM Symposium on Applied Computing](#), the [2004 International Conference on Cooperative Information Systems](#) and the [2006 International Conference on Business Process Management](#).

- Acted as research assistant on the [YAWL](#) project.
- Was the primary author of an open-source workflow editor (the [YAWLEditor](#)), making extensive use of the [JGraph](#) open-source Java graphing framework.

- Engaged in a five-week contract with the QUT Creative Industries Precinct to analyse their business requirements for an asset management system to support the unique challenges faced by the precinct. The requirements specification produced was well received by stakeholders.

- Worked part-time for a start-up company called Information Designers.
- Constructed suitable software deployment framework and commercially compelling prototypes using this framework, drawing on techniques from my PhD.
- Key prototype showed how a number of components specialised in different areas, such as new feeds or calendaring, could interact to deliver filtered RSS feeds to a calendar, or calendar information to RSS feeds.
- Used the [ROME framework](#) for RSS feed manipulation and [iCal4j framework](#) for iCalendar manipulation.

*Systems Architecture Team Leader**Jan 2001 – 20 May 02*

- Managed & mentored the team of architects, each specialised in a particular product.
- Role involved ensuring that GBST's software products were adequately balancing strategic future direction enhancements against existing work commitments.
- Estimated and subsequently won the business for a Hong Kong adaptation of Shares, sized at 80 person-weeks and valued at approximately \$2 million.
- Introduced a UML 1.3-based object-oriented analysis and design technique. Trained architects and 20+ designers in its usage.

*Systems Architect**Apr 1999 – Jan 2001*

- [Shares](#) was my product of expertise. Circa 2002, Shares had approx. 2.3 million lines of code in 16,000 programs, covering 470 database tables. Shares ran as the back-office cash and stock settlement system for just under half of the Australian stockbroking industry.
- Introduced technical special interest groups to 80+ programmers and 20+ designers including email groups, FAQs and how-to guides.
- Analysed requirements for, designed and tested STP module of Shares: A risk management tool vetting and automatically placing thousands of orders per day against client-defined rules for online trading.

*Trading Thematic Team Leader**Mar 1997 – Apr 1999*

- Ran a team of nine programmers, ensuring all trading-related support activities, enhancements and projects were adequately resourced and managed for Shares. Entailed software design and quality assurance of team member designs.
- Designs for trading aspects of product-wide multi-market, multi-currency functionality, fixed interest, and house trading.

*Designer (Billing System)**Dec 1996 – Mar 1997*

- Tasked with designing the GBST Billing System which tracked the Internet trading history of stockbroker's clients using the GBST Online Internet trading portal.

- Ran a team of six to ten application support programmers, dedicated to ensuring the Shares product was running efficiently and bug-free for our stockbrokers. Included ensuring real-time price, trade and security feeds were being delivered and correctly applied to $24 \times 7 \times 365$ databases, fixing software bugs, and data corruption.
- Implemented a Support Blitz, taking 600 support requests to 200 in a fortnight.

- Redesigned the existing Shares End of Day (EOD) batch process and re-engineer it into a phased solution, allowing the Shares database to remain online $24 \times 7 \times 365$. This allow users to interact with the database safely as it completed its daily housekeeping activities.
- Module reported only two bugs within first six months of live operation.
- Acted as designer, programmer and tester on project, directing two other developers.

- I was a member of a team of four application support programmers, supporting real-time operations for our stockbroking clients using the Shares product.
- Acknowledged as the resident portfolio (stock holdings) expert of company.
- Built several support tools to alleviate manual portfolio support tasks.

- Evaluated a distributed parallel algorithm package for ANSI C using university servers.
- Proved effectiveness of package for solving NP-Complete problems via brute force evaluation across a distributed server network environment
- Supplied evaluation of algorithms using the PVM package; compared them against equivalent single-threaded algorithms

- Tutored subjects on *Structured Programming with Modula-2* and *Fundamentals of Operating Systems*.