

CURRICULUM VITAE

of

LINDSAY BRADFORD

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PUBLICATIONS

- 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%. Covered by *EU patent application*: “Adaptive Software Components”.
- 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).

PROFESSIONAL SKILLS

Technical Skills

- Object-oriented and database analysis and design techniques
 - Ran a design special interest group for 20+ software designers
 - UML 1.4 (based on domain Modeling) including quality assurance activities
- Training, mentoring and requirements analysis skills

Programming Languages

- Java: J2SDK 1.4+, SWING, ANT 1.5+, JUnit3.8.1, Servlet 2.4
 - Have written and deployed a workflow editor using Java. I also supply a number of applets from my personal web page
- Other 3GLs: Perl, ANSI C, C++, HTML, VB-Script
 - Built and maintained five distinct intranet web sites using PERL CGI
- RDBMS / 4GLs: PostgreSQL 8, Progress V6-V8, Microsoft Access 2000
 - Ran a Progress special interest group for 80+ programmers, including training on database record locking, scoping and indexing

Operating Systems and Development Environments

- RedHat Fedora Core 5, DEC Alpha and SUN UNIX systems
 - Administer Fedora at home as operating system of choice
- Microsoft Windows XP, 2000, NT 4.0 and 98
- Eclipse 3, Subversion 1.2, XPlanner 0.6.1

EDUCATION

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

CAREER SUMMARY

Information Designers	Mar 2006 – Current
Researcher	Mar 2006 – Current
Queensland University of Technology	Aug 2002 – Current
Senior Research Associate	Mar 2006 – Current
PhD Student	Aug 2002 – June 2006
Research Assistant	Sept 2003 – Feb 2006
Requirements Analysis Consultant	May 2005 – Jun 2005
Guest Lecturer and Tutor	Oct 2003 – Current
GBST Holdings	Apr 1995 – May 2002
Systems Architecture Team Leader	Jan 2001 – May 2002
Systems Architect	Apr 1999 – Jan 2001
Trading Thematic Team Leader	Mar 1997 – Apr 1999
Designer — Billing System	Dec 1996 - Mar 1997
Application Support Team Leader	Oct 1996 – Dec 1996
Designer — 24 Hour Module	Dec 1995 - Oct 1996
Application Support Team Member	Apr 1995 – Dec 1995
Index Computer Solutions Pty Ltd	Feb 1995 – Apr 1995
Technical Support Staff	Feb 1995 – Apr 1995
University of Queensland	Nov 1994 – Feb 1995
Research Assistant	Nov 1994 – Feb 1995
Tutor	Mar 1994 – Oct 1994

CAREER DETAIL

INFORMATION DESIGNERS

Mar 2006 – Current

I have an ongoing two-day a week employment relationship with a startup company called [Information Designers](#). My role is to investigate and construct proof-of-concept applications using a similar underlying architecture to the one used in my PhD thesis.

Researcher

Mar 2006 – Current

My work includes, but is not limited to, the research on software evolution conducted in my thesis. Other things that I am investigating involve the construction of a suitable software deployment framework, along with commercially compelling prototypes using the same underlying architecture.

Achievements:

- Further skill has been developed in Java SWING GUI construction. I have recently begun using the [ROME framework](#) for RSS feed manipulation.

QUEENSLAND UNIVERSITY OF TECHNOLOGY

Nov 2002 – Current

I have an ongoing three-day a week employment relationship with the Queensland of Technology, which began as I was working on my PhD at the same institution. The PhD experience allowed me to gain skill in critiquing, conducting, and reporting Information Technology research in and around server scalability and software evolution. I have also further developed skills in lecturing, and tutoring, and have been engaged with the university on a professional level with requirements analysis, research, and research software development of the graphical editor for [YAWL \(Yet Another Workflow Language\)](#).

Senior Research Associate

Mar 2006 – Current

I am currently working within a research project that forms part of the [ARC](#) Centre of Excellence for Creative Industries and Innovation ([CCI](#)). This project investigates how business process management, and workflow technologies can successfully be applied to highly dynamic, and creative industries, such as film and television production. My role is to both research where workflow might be applied, and to enhance the aspects of the YAWL system to better facilitate its use within such an industry.

Achievements:

- Continuing to collaborate with researchers and industry partners to create accurate business process models of film and television production. Event-Process Chains (EPCs) are being used for the modeling effort.
- Continuing [release of enhancements](#) to the [YAWLEditor](#) to better support users that must adapt business process models to executable workflow models.

PhD Student**Aug 2002 – June 2006**

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.

Achievements:

- As the primary author, published and presented [several papers](#), the latest of which is the subject of a US patent application entitled “Adaptive Software Component Techniques”.
- 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](#).

Research Assistant**Sept 2003 – Feb 2006**

I occasionally supplement income with research assistant work. Of greatest significance is my work with [YAWL](#). I am the principal author of an open-source workflow editor called the [YAWLEditor](#) that allows users to draw and export YAWL specifications to the YAWL workflow engine for execution.

Achievements:

- Successfully built and deployed the [YAWLEditor](#). The editor makes extensive use of the [JGraph](#) open-source graphing framework.

Requirements Analysis Consultant**May 2005 – June 2005**

I 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 final report was well received by key stakeholders.

Achievements:

- Produced a [requirements analysis report](#) after interviewing stakeholders and drawing out their respective needs for effective equipment loans and management.

Guest Lecturer and Tutor**Oct 2003 – Current**

I have given a number of guest lectures for the subjects ITB432/613 (Advanced Programming Lab), ITN225 (Java for eCommerce) and ITN235 (Distributed Object Information Systems). These activities expand upon the volunteer guest lecturing I did whilst working at GBST. I have also acted as a tutor for subjects offered at the university.

Achievements:

- Lectured undergraduate university students in issues of [unanticipated software evolution](#) using a distributed object middleware, issues of [software architecture](#) and issues of [Java Servlets](#) and their limitations.
- Tutored the subjects Information Modeling for Databases (SQL and Z Schema) and Information System Modeling (Z Schema). Both experiences involved mentoring of students, along with assignment and examination marking.

GBST is a boutique software company specialising in large scale real-time financial transaction software. Their core product, **Shares**, ran as the back-office cash and stock settlement system for just under half of the Australian stockbroking industry. Shares was my product of expertise, and written in Progress version 8. Circa 2002, Shares had approximately 2.3 million lines of code in 16,000 programs, covering 470 database tables.

Systems Architecture Team Leader

Jan 2001 – 20May 02

This involved managing and mentoring of up to seven other architects. Each architect specialised in a particular product. With a predominately technical focus, I was responsible for ensuring that GBST's software products were adequately balancing strategic future direction enhancements against existing work commitments.

Achievements:

- 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.
- Provided architectural guidance for Shares archiving project (approximately \$2 million in revenue)

Systems Architect

Apr 1999 – Jan 2001

This role involved supplying architectural guidance on the Shares product. Duties included making key decisions on various projects to balance speed to market issues against functionality, quality-assurance of designs to ensure sound architectural fit, and participation in management decisions on future product direction.

Achievements:

- Quality-assured several 20–60+ person-week software designs
- Introduced Progress and Design special interest groups to 80+ programmers and 20+ designers
 - Established and administered email groups to promote cross-fertilisation of ideas
 - Built and maintained HTML pages for hyperlinks, FAQs and how-to guides for the groups
 - Pages were interactive, using Perl 5.6 CGI scripts to supply glossaries, page searching, etc.
- Designed STP module for Shares: A risk management tool vetting thousands of orders per day against client-defined rules for online trading
 - 20 person-weeks of effort
 - 200 Progress V8 programs, 10 extra database tables
 - Supplied requirements analysis, design and testing for a five-person team

Trading Thematic Team Leader

Mar 1997 – Apr 1999

Responsible for a team of nine programmers, I ensured all trading-related support activities, enhancements and projects were adequately resourced and managed for Shares. Much of this work entailed software design and the quality assurance of team member designs.

Achievements:

- New Zealand Fixed Interest, Equity and House Trading II design quality assurance
- Design input into trading aspects of product-wide multi-market, multi-currency functionality
- Introduction and maintenance of team intranet web site and knowledge base

Designer — Billing System**Dec 1996 – Mar 1997**

I was initially tasked with designing the GBST Billing System. This system tracked the Internet trading history of stockbroker's clients using the GBST Online Internet trading portal. I was then moved onto making a requirements analysis for an ASX SEATS Open Interface straight through processing solution.

Achievements:

- Billing System design using Progress V8 GUI. Approximately 15 person-week project. Acted as designer
- 20 page requirements definition document for STP (based on SEATS Open Interface) coupling ASX business rule adherence with automation of existing manual processes within Shares

Application Support Team Leader**Oct 1996 - Dec 1996**

I was responsible for running a team of six to ten application support programmers, dedicated to ensuring the Shares product was running efficiently and bug-free for our stockbrokers. This task 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 correcting data corrupted by these bugs.

Achievements:

- Implemented company-wide Support Blitz, taking 600 support requests to 200 over a fortnight
- Helped implement the 24 hour support offering of GBST

Designer — 24 Hour Module**Dec 1995 – Oct 1996**

I was given the responsibility to take 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 involved a team of three programmers altering the system to allow users to interact with the database safely as it completed its daily housekeeping activities.

Achievements:

- Module reported only two bugs within first six months of live operation
- Over 30 product critical programs altered to facilitate 24 hour operation
- 40 person-week project covering Progress V7 4GL and UNIX scripting
- Acted as designer, programmer and tester on project, directing two other developers

Application Support Team Member**Apr 1995 – Dec 1995**

I was a member of a team of four application support programmers, supporting real-time operations for our stock-broking clients using the Shares product.

Achievements:

- Acknowledged as the resident portfolio (stock holdings) expert of company
- Built several support tools in Progress versions 6 & 7 to alleviate manual portfolio support tasks

Index Computer Solutions was a three-person operation, supporting the installed user base of several local manufacturing firms using a manufacturing database system on the SCO UNIX platform. I initially received work experience here during my undergraduate course, writing a pizza delivery database.

Technical Support StaffFeb 1995 – Apr 1995

Typical tasks were predominately focused on supplying on-site SCO UNIX machine support.

Achievements:

- Administration of over five SCO UNIX boxes across Brisbane
- Development of pizza phone order system
 - built with FoxPro relational database tool
 - Approximately 10 tables and 20 screens
 - four person-weeks of effort
 - Acted as the only resource through the entire project life-cycle
- Assisted in tailoring a real estate client tracking system to new requirements

Throughout my Honours degree, I worked for the university as a tutor. After completing my Honours degree, I spent the summer holiday period employed by the University of Queensland's Computer Science department, working as a research assistant.

Research AssistantNov 1994 – Feb 1995

Evaluated a distributed parallel algorithm package for ANSI C using university servers.

Achievements:

- 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 package; compared them against equivalent single-threaded algorithms

TutorMar 1994 – Oct 1994

Engaged in employment as a tutor to both supplement income and gain experience in teaching others. Tasks included the mentoring of students, assignment and examination marking.

Achievements:

- Tutor for first year subject Structured Programming with Modula-2
- Tutor for third year subject Fundamentals of Operating Systems