Bruce Badger

CURRICULUM VITAE

Last updated: October 2003

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SUMMARY

Career summary

My primary role for the past several years has been one of technical project leadership. This has included problem space definition, solution specification and implementation team leadership. I have found great value in taking a technical hands-on approach in all project phases, from experimentation, through prototyping to final implementation.

I have over 12 years of experience applying Object Oriented techniques and technologies in a wide range of business environments. My "vertical market" experience includes investment banking, retail banking, insurance, utilities, networking/telecoms and government.

My technical experience is also quite broad. I have worked with many programming languages, recently mostly Smalltalk and Java. My database experience includes many RDBMS plus the rather more interesting OODBMSs, in particular GemStone. I've built a number of distributed systems which range from trivial use of HTML to sophisticated global distributed processing applications, using a mix of CORBA, HTTP and proprietary tools and protocols.

I have given many presentations, lectures and training courses. These have ranged from the spontaneous presentation of the philosophy behind some decision or other, through sales call presentations to formal training courses spanning many days. I usually get involved with mentoring too.

Outside of my professional day-to-day work I have produced a number of open-source software libraries in both Java and Smalltalk. These include: A PDF file writer which supports the programmatic creation of PDF files on-the-fly A driver layer for the PostgreSQL RDBMS plus some mapping libraries which support a generic SQL interface layer (EXDI) and an SCM system (StORE). Both these libraries are quite widely used, the the PDF library being used at the International Atomic Energy Commission, the the PostgreSQL library being used by many companies with StORE, and in particular, Cincom, the vendors of StORE which forms a part of the VisualWorks Smalltalk environment.

Technical Experience Breakdown

Operating Systems	UNIX	Solaris 1 & 2
		ICL SVR4
		Linux (Red Hat, SuSE, Debian)
	Microsoft	MS DOS
		Windows 95/98/ME
		Windows NT & 2000
	Other	MCP (Burroughs/Unisys mainframes)
		VME (ICL/Fujitsu mainframes)

Languages	Smalltalk	VisualWorks
		VisualAge Smalltalk
		Squeak
		GNU Smalltalk
	Java	Plain old JDK
		ObjectShare Parts for Java
		IBM VisualAge for Java
	C, C++	
	COBOL	
	Application Master (4GL)	
	Prolog	

Methodologies	UML	
	Rumbaugh (OMT)	
	Booch	
	Yourdon	
	OOA	
	SSADM	

Databases etc.	UNIX	*RDB* INGRES, Informix, Oracle, PostgreSQL
		OODB Ontos, Objectivity, Object Store, Versant, GemStone
	Windows	*OODB* GemStone (NT)
		RDB Microsoft Access, Paradox for Windows, WindowBase, INGRES, SQL Server, Oracle
		XBase dBase IV
	VME	*Codasyl* IDMS(X)
		Dictionary DDS
		RDB INGRES
	MCP	*Codasyl* DMSII

Comms	TP Monitors	MCS &DCH, TPMS, some Tuxedo
	Protocols	Linux: IP, TCP, DHCP, DNS, HTTP
		Windows: DHCP, WINS
	Other	CORBA (OrbixWeb, Distributed Smalltalk)

EDUCATION

Secondary

Alderman Catlieugh Sec. Mod. (Kings Lynn, UK)	1972-1974
Sir Leo Schultz Comprehensive (Hull, UK)	1974-1977

Further Education

The Percival Whitley College (Halifax, UK)	1977-1978
Hull College of Higher Education (UK)	1979-1980
Leeds Polytechnic (UK)	1981-1982

Qualifications

'O' Levels	Maths, Physics, Chemistry (Physics and Chemistry were the SCYSP papers.)
CSE	English, Electronics, Economics
ONC (equiv.)	(NCC Data Processing Threshold Scheme) Computer programming.
HNC	Computer Studies (Certified as a BS equivalent in the US)

Note: Commenced 'A' Level studies (Maths, Physics and Chemistry) but left to join NCC one year course.

Training Received

XML, DTD, XSL - designing and using
GemStone Tuning
SPL LEVER*Edge* methodology foundation
GemStone OODB design/optimisation
Ingres Database administration / design/ optimisation
Smalltalk programming
C++ programming
Prolog programming
C programming
Yourdon analysis and design
DDS use & administration
IDMS Database administration / design / optimisation
Jackson Structured Design
COBOL programming

Membership of professional bodies

British Computer Society
Australian Computer Society
Association for Computing Machinery

OpenSkills.

Sydney, Australia
October 2001 to date

Site Hardware/Software

Software

MS Windows 2000
Linux & utilities
VisualWorks ENVY & StORE
VisualAge Smalltalk
PostgreSQL
GemStone

Hardware

PC' s
Linux workstations & server
Eracom cryptographic cards

Job Title

Founder, President and Consultant

Tasks/activities

I. Reviewed and reported upon the status of a suite of forestry applications implemented using GemStone as the primary repository. I also helped with some immediate troubleshooting. This assignment contributed to the medium term strategic systems planning for the client.

II. Gave a week-long introductory course to VisualWorks Smalltalk, plus supporting consultancy, to a software house upgrading a Smalltalk SCADA (Supervisory Control and Data Acquisition) system which monitors the status of power stations.

III. Developed a Smalltalk library to communicate with a hardware cryptographic device for use in a web banking application.

IV. Enhanced the open source Smalltalk PDF library that I wrote to help an insurance company produce on-the-fly documents for delivery to web browsers.

V. Gave a training courses for an investment bank upgrading to the latest version of VisualWorks Smalltalk. The focus of the training was the migration from ENVY to StORE.

VI. Development of internal OpenSkills systems using VisualWorks and GemStone. The web based applications are wholly deployed in GemStone and uses the Swazoo open source HTTP server.

Visual Networks Inc.

Trinity
New York, NY
January 2000 to August 2001

Site Hardware/Software

Software

MS Windows 95/88/MT/NT/2000
VisualWorks DST & ENVY
IBM VisualAge Java
OrbixWeb CORBA
Oracle

Hardware

Solaris boxes
PC' s
Linux workstations & server

Job Title

Lead Developer

The Trinity system

Trinity is a network management tool build around a network DBMS. In use, a Trinity system "discovers" the network environment in which it is installed, and is then able to intelligently monitor the state of that network, reporting only "root cause" to network operations staff.

The heart of Trinity is the network DBMS, the model. This is the repository of all knowledge obtained about the subject network, and the engine which deduces the impact of reported problems. Initial versions of the Trinity model stored data in-memory with back-ups to flat files. The version of the model currently under development uses an OODBMS (GemStone) both as the processing engine and repository of record.

Tasks/activities

VII. Responsible for all engineering aspects of the Trinity model from both a development and maintenance (support) perspective. Responsible for task allocation, progress tracking, mentoring and morale for a team of up to 7 people. Lead for the architecture and design work in planning the migration from the in-memory database to using GemStone.

VIII. Worked on several future initiatives: use of external schema management tools, introduction of a formal CORBA interface version control policy use of 3D rendering and visualization and, of course, HTTP based human interfaces.

IX. Introduced several testing and development process improvements, including the use of the VMWare system emulation tool, development tools such as the VisualAge for Java IDE, the professional debug package for VisualWorks and the Refactoring Browser including the Smalllint tool. VMWare was used to keep pre-built versions of the product ready for testing or demonstration.

X. Provision of wide-ranging technical consulting to other parts of Visual Networks, and am involved in all levels of product decision making.

SPL WorldGroup Consulting

SCIF (State Compensation Insurance Fund)
San Francisco
June 1998 to December 1999

Site Hardware/Software

Software

MS Windows NT
IBM VisualAge Java
ObjectShare Parts for Java
OrbixWeb CORBA
Jrun servlet engine
DB2
Oracle
Plexus (Image storage repository)

Hardware

Various NT Workstaions and servers.

Job Title

Technical Lead

Tasks/activities

I. Lead the design and construction of the EPF system. The first phase of the EPF project consisted of a number of source wrapper services, and a single consumer service. Each of the source services present a CORBA interface through which the data in the wrapped data source could be obtained. The single consumer service collated the information from the many data sources and rendered this to the user via servlets and HTML. The source services included legacy mainframe systems, Unix image management systems and security/directory services.

II. Extended the PDF library (developed at WCF Utah) to include the ability to embed TIFF images. This was used to present scanned images web browsers over the SCIF intranet.

SPL WorldGroup Consulting

Workers Compensation Fund of Utah
February 1998 to June 1998

Site Hardware/Software

Software	*Hardware*
MS Windows NT	Various NT Workstaions and servers
ObjectShare Parts for Java	Deployment across multiple platforms.

Job Title

Technical Lead - PDF Library

Tasks/activities

I. Designed and built a class library in Java which enables PDF files to be written directly from within Java. The library was built as part of an Internet application which enabled customers of WCF Utah to view insurance certificates, claims and other policy related documents and data through a web browser.

II. The library was ported to Smalltalk for use in a customer information system built for the utilities industry.

III. The PDF library was released as open source in both it' s Java and Smalltalk incarnations. As at November 1999, over 20 copies of the Smalltalk version have been distributed [as of 2003 many hundreds have been distributed].

SPL WorldGroup Consulting

GIC (Government Investment Corp.)
Singapore.
January 1997 to February 1998

Site Hardware/Software

Software	*Hardware*
MS Windows NT IBM VisualAge Smalltalk OTI ENVY/Developer, Replicator, QA GemStone	Various NT Workstaions and servers

Job Title

Chief Architect

Tasks/activities

I. Lead the design an implementation of this equities portfolio management and trading system. This is a world-wide, real-time, 24x7 system, available at a number of GIC offices around the world, including offices in Singapore, New York, London and Tokyo.

II. Worked with client staff to during the design and implementation of this system. This was a "knowledge transfer" arrangement.

SPL WorldGroup Consulting

San Francisco, U.S.A.
September 1995 to December 1999

Site Hardware/Software

Software

MS Windows NT
MS Windows for Workgroups
Linux
ParcPlace VisualWorks (v2.0 & v2.5)
ParcPlace VisualWave
IBM VisualAge Smalltalk
Java
OTI ENVY/Developer, Replicator, QA
GemStone
Various relational databases

Hardware

Various PCs
Sun Worstations & Servers
Various IBM MVS platforms

Job Title

Systems Analyst / Systems Architect / Lead Technician / Chief Architect

Tasks/activities

I. While at SPL, I had a number of parallel and "extra project" work. Large projects are described individually, this is a summary of all the "other stuff".

II. Ran the evaluation of the GemStone object database. SPL now have a world wide partnership with GemStone covering sales, support and consultancy.

III. Became responsible for the SPL WorldGroup FrameWorks project which established the foundation of a world wide source of Smalltalk libraries, techniques and tools.

IV. Provision of day-to-day design and development support on a number of Smalltalk projects throughout SPL WorldGroup.

V. Helped Sun Microsystems perform benchmark tests upon newly developed servers. Also helped to present these results to a major client of Sun.

VI. Involvement (typically leading) in every stage of project life cycles. Several projects in which I have been involved "end-to-end". Projects including Web based applications and world-wide real-time trading systems.

Macquarie Bank

Sydney, Australia
August 1994 to July 1995

Site Hardware/Software

Software

MS Windows for Workgroups
Solaris
ParcPlace VisualWorks
OTI ENVY/Developer
VisualWorks report writer
Sybase

Hardware

Various PCs
Sun Worstations & Servers
various IBM MVS platforms

Job Titles

System Architect
OO, Smalltalk, ENVY & OODB consultant
also, system designer and implementer.

Tasks/activities

I. I was instrumental in bringing Envy/Developer into the Macquarie development environment. Previously, rudimentary change set management had been used together with some in-house developed tools.

II. Provided consultancy and training with respect to the effective use of VisualWorks and Envy.

III. Took a lead technical role in the development of a base metals trading system.

IV. Worked on the introduction of an OODBMS to Macquarie.

Nomura Research Institute (Europe)

London, U.K.
May 1993 to July 1994

Site Hardware/Software

Software

MS Windows
Solaris 1& 2
ParcPlace VisualWorks (v1.0)
OTI ENVY/Developer
Reportoire (VisualWorks report writer)
Gemstone OODB
Sybase

Hardware

Various PCs
Sun Workstations & Servers

Job Titles

OO, database & Smalltalk Consultant
& system designer and implementer.

Tasks/activities

I. Took technical leadership in the construction of a demonstrator to show the applicability of Smalltalk in a mid to back office financial system supporting securities trading.

II. Gave consultancy and training on the theory and application of object technology to project staff, and other members of staff.

III. Lead technical role in the development of a front office system prototype for NBI (Nomura Bank International). This system provided support for a number of products (FRAs, Futures, Loans/Depos + FX) with real time position keeping. The system also provided sophisticated analysis tools including mark-to-market "what-if" using direct manipulation of yield curve graphs.

IV. Developed full blown FX and money markets dealing system, plus back office support.

A.I.G.

Reading, U.K.
February 1993 to April 1993

Site Hardware/Software

Software

DOS v6.00
Windows v3.1
Smalltalk/V v2.0
WindowBuilder v2.06
Subpanes/V v1.05
VOSS v1.1
Microsoft Access v1.0

Hardware

Dell and Tandon PCs

Job Titles

System designer and implementer.

Tasks/activities

I. Carried out data and behavioural analysis of existing manual marketing system using OOA.

II. Designed marketing system MMI for target Windows environment.

III. Constructed marketing system prototypes using Smalltalk (using Window Builder, Subpanes/V and VOSS) and MS Access.

IV. Constructed first cut versions of working marketing system for operational trial.

ICL Telecomms

Bracknell, U.K.
May 1992 to December 1992

Site Hardware/Software

Software

UNIX
C
Informix
Tuxedo
Westmount CASE tool (Yourdon)

Hardware

DRS 6000
PCs
SUN workstations.

Job Titles

Database Administrator
Design Consultant

Tasks/activities

I. Brought the schemas of two major mediation systems together into a single integrated model. The new data model provided for easy extension to accommodate new types of communications equipment and protocols.

II. Provided day to day database consultancy to the development group.

III. Advised on architectural issues regarding the implementation of distributed database services.

IV. Gave advice on applicability of object oriented technology to various projects.

INCOM Programme

Basingstoke/Bracknell/Reading, U.K.
April 1989 to May 1992

Site Hardware/Software.

Software

VME
IDMSX
INGRES
Teamwork (CASE tool supporting the Yourdon methodology).
UNIX
C, C++
Smalltalk 80
Smalltalk/V
Prolog
Objectivity DB, ONTOS, Versant, Object Store, Gemstone

Hardware

ICL 3950 mainframes.
DRS 300.
DRS 3000
DRS 6000
PCs
SUN workstations.
Clan UNIX mini.

Job Titles

Designer
Design Authority

Tasks/activities

I. Promoted and formalised a standard file format for conveying configuration data around a community of computer systems.

II. Lead a design team constructing a network configuration management system and a new general purpose Smalltalk based Object Oriented infrastructure to support it. The infrastructure was initially built on an INGRES back end.

III. Co-ordinated collaborative work with Manchester University on an Object Oriented database and programming language based on Smalltalk.

IV. Contributed as a designer on the development of a functional database management system.

V. Evaluated several commercial Object Oriented Database Management Systems (OODBMSs) for use in a configuration management system.

VI. Evaluated C++ and Smalltalk for use in the construction of an open dictionary. This involved developing code that demonstrated the applicability of the languages.

UKAIR Project

Basingstoke, U.K.
March 1988 to March 1989

Site Hardware/Software

Software	*Hardware*
VME	ICL 3950 mainframe.
IDMSX	DRS 20.
TPMS	DRS 300.
DDS, ISDA	DRS PWS.
Teamwork (CASE tool supporting the Yourdon methodology).	SUN workstations.
Officepower	Clan UNIX mini.

Job Title

Data Analyst.

Tasks/activities

I. Devised and published the standards and guidelines for the use of the project data dictionary.

II. Provided IDMS and general database design consultancy to the project.

III. Worked on the Data Analysis and database design team.

IV. Gave help and advice on system life cycle, methodology and configuration management issues.

ICL - LAFIS Implementation Team

Reading, U.K.
March 1987 to March 1988

Site Hardware/Software

Software	*Hardware*
VME	Many ICL mainframes.
IDMSX, AIDA	DRS 20.
(LAFIS database navigation tool)	DRS 300.
TPMS	DRS PWS.
DDS, ISDA	
Application master & Report master	
COBOL, ITS	
Fortran	

Job Title

Technical Consultant.

Tasks/activities

I. Revised the implementation teams filestore structure introducing the concept of SWEL (SoftWare Extras for LAFIS) to replace the existing ad-hock development and issue of team developed ' goodies' .

II. Provided over the phone technical support for LAFIS customers.

III. Gave training courses in the use of AIDA & IDMS both at Beaumont and customer sites.

IV. Visited many customer sites to provide technical consultancy on many topics, from COBOL development techniques to database security strategy to the installation of LAFIS.

New Zealand Post Office Savings Bank

Bankmaster Acceptance project
Auckland, New Zealand
July 1986 to February 1987

Site Hardware/Software

Software

VME
IDMSX
TPMS
DDS, ISDA
COBOL, ITS
NETSIM

Hardware

Several ICL 2966 & 3980 mainframes.
DRS 20' s

Job Title

Environment Support Consultant.

Tasks/activities

I. Gave technical support and advice to the Bankmaster project staff and management.

II. Devised and implemented a nearly fully automatic regression testing mechanism.

III. Developed a number of SCL procedures to give the testers a more ' user friendly' interface to VME.

IV. Maintained and supervised the use of the various Database and TP services in the acceptance testing environment.

V. Gave staff training in the use of ICL software for testing purposes, and also presentations to staff and management on the architecture of the proposed banking system.

Inland Revenue

Telford, U.K.
May 1985 to June 1986

Site Hardware/Software

Software	*Hardware*
VME/VME 2900	Many ICL mainframes including -
IDMSX	2988s
TPMS	Super Dual 2988s
DDS, ISDA	3930s
Application master & Report master	3980s
COBOL, ITS	Terminal hardware included DRS & Philips Maestro Kit.

Job Title

Team leader of the PIMS team (PIMS - Problem & Inventory management system).

Tasks/activities

I. Revised the PIMS development and live filestore to allow testing of multiple versions of PIMS and its components.

II. Redesigned the PIMS database schema to accommodate the addition of inventory management and network configuration applications.

III. Designed and implemented a consumable stores / network inventory system using Quickbuild. This system ran on the redesigned PIMS database schema.

IV. Designed and implemented a network modelling system that included a configuration parameter generation system. The system was developed using both Quickbuild and COBOL. This system also used the redesigned PIMS database.

DHSS

National Unemployment Benefit System
Reading, U.K.
June 1984 to May 1985

Site Hardware/Software

Software	*Hardware*
VME 2900	11 Dual ICL 2966 mainframes connected
CME* Running under VME	to Honeywell terminal clusters.
DME running under CME*	DRS 20 terminal clusters.
IDMSX, Gresham' s Altadata, Datamate	IBM PCs.
TPMS, DTS	
DDS, ISDA	
COBOL, ITS	
PC-DOS	

Job Title

DDS/IDMS Consultant.

Tasks/activities

I. Designed and implemented a DDS based COBOL data division generator. This generated the first three divisions of a COBOL module that had been described on a DDS dictionary. This system enforced standards across the project and saved programmers from hand coding the Identification, Environment and Data divisions of COBOL programs.

II. Controlled and maintained the TRES (Terminal Replacement and Enquiry System) database schema and service descriptions held on DDS.

III. Gave several presentations on the use of the ICL data Dictionary System and the Data Division Generator.

IV. Provided much SCL/COBOL/IDMS/TPMS support in the form of help and advice to the application teams.

Burtons - Leeds Management Services (LMS)

Leeds, U.K.
March 1984 to May 1984

Site Hardware/Software

Software

VME 2900
IDMSX, Gresham' s Altadata
TPMS
DDS, ISDA, Application Master
COBOL, ITS

Hardware

Dual ICL 2966.
DRS 20' s

Job Title

Application designer.

Tasks/activities

I. Designed, specified and implemented the application program testing strategy.

II. Worked on the design of the CREDIT system application modules.

III. Contributed to the definition of the TPMS implementation strategy.

Northern Rock Building Society

Newcastle upon Tyne, U.K.
June 1983 to February 1984

Site Hardware/Software

Software

CME running DME and VME 2900
IDMS
TPMS, DMR
DDS
COBOL, ITS

Hardware

ICL 2966 Plus large comms network.

Job Title

Senior Programmer, June 1983 to September 1983.
Conversion Team Leader October 1983 to February 1984.

Tasks/activities

I. Designed and wrote a procedural and suite SCL generation software. These were used to produce the testing and live SCL for all applications.

II. Redesigned a part of the investments system database schema.

III. Specified the TPMS implementation strategy for the investments system.

IV. Converted 50+ programs from ICL 1900 COBOL to ICL 2900 C2 COBOL.

V. Instrumental in deploying the conversion of the investments system conversion from DME to VME (two ICL mainframe operating systems) on time.

Automobile Association Insurance Services

Newcastle upon Tyne, U.K.
January 1983 to May 1983

Site Hardware/Software

Software

VME 2900
IDMSX
Gresham' s Altadata
TPMS
DDS

Hardware

ICL Dual 2966

Job Title

Contract Programmer/Analyst

Highlights

I. Wrote many TP/IDMSX programs from formal specifications.

II. Wrote batch programs to correct live database inconsistencies, also used Altadata and Pfix (binary file editors) for this.

III. Amended existing programs in line with user requests.

IV. Designed and wrote the suite SCL (the ICL equivalent of JCL) that was later adopted as the installation standard.

NEGAS (North Eastern Gas)

Leeds, U.K.
October 1980 to December 1982

Site Hardware/Software

Software

VME/B
IDMSX
TPMS
DDS
COBOL
S+PC Reportwriter & Validate

Hardware

ICL dual 2976
Burroughs terminals and concentrators

Job Titles

Programmer October 1980 to August 1982.
Senior Programmer September 1982 to December 1982.

Highlights

I. Writing, compiling and testing application programs from formal specifications using Jackson Structured Design methods.

II. Set up and maintained user training databases.

PRIESTMAN Bros

Hull, U.K.
August 1978 to September 1980

Site Hardware/Software

Software

MCP Operating system.
DMSII Database management system.
MCS & DCH Communications software.
COBOL.

Hardware

B1700 and 1900 mainframes.

Job Titles

Trainee Programmer
Junior Programmer.

Highlights

I. Wrote COBOL programs from written specifications, these programs used with the company' s manufacturing control and replacement parts systems. The programs ranged from simple report producers to sophisticated product explosion and TP functions.

II. Provided day-to-day support of the TP (MCS/DCH) service that was connected to between 20 and 30 terminals.