

# Résumé

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## Open Source Development

I have invested considerable time and effort in developing Open Source software, primarily in implementing the W3C Recommendation XSL (Formatting Objects) with [Apache FOP](#), [Folio](#) and [HyFo](#), but also in a Linux [printer driver](#) and a core task contribution to Apache Ant.

## Work History

2007/11 to present [NEHTA](#), Brisbane. Software developer. Permanent

Work on implementation of Web Services standards for e-Health and ancillary support functions.

- WSDL-based Web Services implementations using **Glassfish** and **Metro**.
- Generation of **Word 2003** documents from **Enterprise Architect** using **Saxon XSLT 2.0**.
- **Ant** build and **Subversion** source control support.

2007/07 **Sun Microsystems**. [OpenJDK](#) contributor.

Implemented [RFE 6410729](#) Add BitSet.previousClearBit, previousSetBit. These additional methods in the class java.util.Bitset will be available in Java 7.

2006/02 to 2007/02 **H-P Labs**, Bristol. Software developer. Contract

Work on the text layout and **PDF** generation components of the experimental **Document Description Framework**.

<<http://www.hpl.hp.com/techreports/2005/HPL-2005-223.html>>. DDF is written primarily in XSLT 2.0, with integrated Java components. Redesign of paragraph layout based on my Folio design notes.

<<http://defoe.sourceforge.net/folio/knuth-plass.html>>

- Rework existing code.
- Design of paragraph layout component based on Knuth model.
- Implement text layout component around Java 2D facilities.
- Integrate existing open source Java libraries.
- Creation of special-purpose fonts with **FontForge**.

- Integrate Java components with **XSLT 2.0**.
- Integrate font processing between **Java 2D** and PDF using **iText** and **PDFBox**.
- Evaluate iText, PDFBox and **FOP** Transcoder for PDF output.

2006/02 to 2007/01 **Folio Project, HyFo sub-project**. Software design and development.

- Design, development and release of HyFo hyphenation module for Folio <<http://defoe.sourceforge.net/hyfo/hyfo.html>>.
- Develop an implement re-spelling hyphenation model.
- Introduce full XML hyphenation pattern and modifier definitions, extended from TeX hyphenation patterns.
- Introduce **Darcs** as the primary Source Code Management system for Folio.

2006/01 to 2006/02 **Folio Project, Knuth line-breaking**. Software design.

Design of Java2D-compatible general paragraph line-breaking algorithm. <<http://defoe.sourceforge.net/folio/knuth-plass.html>> The design builds on the Knuth-Plass line-breaking algorithms of TeX. This design was later implemented as part of the Data Description Framework. (See above.)

2005/11 to 2005/12 **Gandlake Ltd**, Newbury, UK. Document developer. Contract

Business process consultancy & **PDF** production from **XML**. Redesigning the workflow to incorporate **iText** PDF manipulation and reduce design time for complex form layouts.

- Write **XSL-FO** stylesheets.
- Evaluate iText.
- Business process re-design introducing iText for PDF merging.

2005/10 to 2005/11 **Folio Project, Persistent configuration**. Software design and implementation.

Re-design the configuration of Folio to use the Preferences API. This provides for persistent configuration profiles.

2005/07 to 2005/09 **Folio Project, Random access to serialized objects**. Software design and implementation.

- Design and develop tools to provide random access to serialized objects. Primarily for use with a single session, this provides for the recovery and reprocessing of object streams which have exceeded in-memory buffer capacity.

2005/06 **Standard & Poor's**, Melbourne (Brisbane based). Document developer. Contract.

PDF production from XML.

- Design **XML** input format.
- Write **XSL-FO** stylesheet.

- Generate PDF.
- Evaluate Apache **FOP**, Antenna House **XSL Formatter** & RenderX **XEP**.
- Conducted by tele-commuting.

2005/02 to 2005/05 **Redesign of XSL-FO property processing in Folio**. Software design and implementation.

Redesign properties handling around typesafe enums.

- Rename **Defoe to Folio**. Make necessary changes to repository and HTML support documentation.
- Introduce **BitKeeper** as Source Code Management software.

2004/10 to 2004/12 **Defoe Project, Fork from Apache FOP**. Software design and implementation.

Fork Project Defoe from Apache FOP Alt-Design branch. Convert from Java 1.4.2 to Java 5.0.

- Set up **SourceForge** repository.
- Convert from Java 1.4.2 to **Java 5.0**.
- Revise code wherever possible to make use of **Generics**, Typesafe **Enums**, and other Java 5 language features.

2003/07 to 2003/09 **Typéfi Systems**. Sunshine Coast, Qld. System designer. Permanent.

Page layout system design and Linux administration.

- Set up and maintain Linux server.
- Set up **Bugzilla** bug tracking.
- Set up **CVS** repository.
- Set up **XPlanner** project management environment.
- Investigate **Scarab** issue tracking.
- Set up **MySQL** environment for Bugzilla, XPlanner and Scarab.
- Set up **Samba** for Linux XP network integration.
- Investigate Microsoft **Word** 2003 XML facilities.
- Investigate **Xml Schemas** and **Relax NG**.
- Develop Relax NG schemas for layout system data transfers.

2001/02 to 2003/06 **Apache FOP, Properties re-design**. Software design and implementation.

- Re-design the property processing front-end of FOP.
- Condense representations of many property elements.
- Design and implement pull-parsing for front-end XML parsing. This implementation pre-dates the general introduction of **StAX** parsing by more than 4 years.

- Demonstrate 50% decrease in property processing time over main branch.

2001/08 **Apache Ant**, **fixcrif core task re-write**. Software design and implementation.

- Fix problem with tabs embedded in Java string constants.

2000/07 to 2000/11 **IONA Technologies**, Dublin. Build engineer. Contract.

Porting **Orbix 2000 for Java** to **Tru64** platform.

- Trouble-shooting migration of **C++** and **Java** components of Orbix 2000.
- Use of **Clearcase** development environment.
- Adjusting **imake** build environment.
- Shell (**bash**) and **perl** scripting.

1999/11 to 2000/04 **Linux distributions**, **Lexmark 5000 printer driver**. Printer driver design and implementation.

Design and implement a **Ghostscript** driver to enable Lexmark 5000 use with **Linux**.

- Reverse-engineer Lexmark 5000 **protocol**.
- Develop, release and support driver with associated configuration scripts.

1998/08 to 1999/04 **CITEC**, Brisbane. Systems Administrator. Contract.

Unix tool development and Systems Administration.

- Tools development in **ksh**, **perl** and **expect**.
- Documentation systems development in **SGML** using **sgmltools** package.
- Retro-fit of Solaris **Enterprise Volume Manager** 2.5 to production system.
- **Solaris 2.6** installation, administration and tuning.
- Frequent hardware upgrades.

1995/12 only **Department of Family Services**, Aboriginal & Islander Affairs, Brisbane. Contract.

Development of Domain Name Service tools

- Design of tools in **perl** on Solaris 2.3 to assist in the transition of the FSAIA network to **DNS**.

1995/06 to 1995/07 **A-Z Tech Pty Ltd**, Brisbane. Software developer. Contract.

Software development

- Design and development of Microsoft **Access Basic 2.0** modules for the synchronisation of initially identical Access databases independently maintained at unconnected sites.
- Manipulate existing databases to transparently create, maintain and delete synchronisation databases, using the Data Access Object facilities of MS Access.

- Create full help system using **ForeHelp 1.0** .

1994/02 to 1994/10 **DEVETIR**, Information Technology Branch, Brisbane. Systems management. Contract.

(Department of Employment, Vocational Education, Training and Industrial Relations)

Systems Management Consultant

- Set up initial Oracle configuration item database for **UltraComp Red Box** configuration management, change control, help desk and problem management software.
- Migrate Red Box software.
- Plan migration of **help desk** facilities to Red Box.
- Develop and install comprehensive procedures for UltraComp alert management software.
- Liaise on software **version control**.
- Evaluate **Athene** capacity planning software for use in both long-term capacity planning and short term capacity troubleshooting on Unix servers.

1993/04 to 1993/12 **CITEC**, Brisbane. Systems Administrator. Contract.

Unix tool development and Systems Administration

- Writing and maintaining administration scripts in **sh** and **perl**.
- Development of a cross-platform general-purpose performance **graphing package**.
- Development of embedded documentation systems for source code.
- Development of **revision control** mechanisms, compatible with quality standards, for various forms of text files, based on **rcs**.
- Developed and delivered **training programs** on Unix basics and Unix utilities for other new and existing members of the Unix support group.
- Cross-platform **Unix systems support**.

1990/08 to 1993/04 **DEVETIR**, Information Technology Branch. Systems Administrator. Contract.

Unix systems administration & network consultancy

- Division of Workplace Health and Safety
- Unix systems support for a state-wide **Oracle** application and development environment, supporting up to 100 concurrent users.
- Support of developers using Xterms.
- Definition of framework for source code **version control** of large application development environments.

Finance Branch

- Support for implementation of a new client/server on-line revenue system.

## Information Technology Branch

- Provided consultancy to the Branch on strategies for enhancing existing **IEEE 802.3** (Ethernet) 10base5 backbone and various 10base2 sub-networks.
- Suggested fibre-optic backbone with the just-defined 10baseT for floor systems.
- Developed a model for saturation 10baseT wiring based on small zones with wiring redundancy.
- Drew up detailed plans, and supervised the **installation** of *10baseT* wiring.
- The planning method I developed was adopted for subsequent refurbishments in the Department.

1990 **Telecom Australia**, Brisbane. Analyst/Programmer. Contract.

- Low-level **C** code for in-house **SCADA** (System Control And Data Acquisition) systems on PCs.

1989 to 1990 **Alcatel-STC**, Brisbane. Senior Analyst/Programmer. Permanent.

- Development in **C** on Golden Casket Gold Lotto project for the primary contractor.

1989 **Bell Page Pty Ltd**, Brisbane. Analyst/Programmer. Contract.

- Multi-thread **communications protocols** for message paging system.

1988 to 1989 **Elpro Technologies Pty Ltd**, Brisbane. Project Leader, Analyst/Programmer. Contract.

- Defined, and lead the team developing, the first Unix implementation of Elpro's remote **telemetry** systems using **C**.
- Defined graphical interface and high-level hardware control and monitoring logical expressions language.

1987 to 1988 **RSM Research Pty Ltd**, Brisbane. Analyst/Programmer. Permanent.

- Designed a **report generator** and designed and coded custom extensions in **C** to the control system for intelligent cash registers.

1984 to 1987 **Incitec Limited**, Brisbane. Technical Programmer. Permanent.

- Implemented ICL CO3 bi-sync **communications protocol** on NEC APC II microcomputers, primarily in **C** and **assembler**. This product supported multiple terminal screens.
- Wrote VDI **device drivers** for H-P plotters.

**1974 to 1984**

**Ampol Refineries**, Brisbane. Analyst/Programmer. Contract.

**QP Business Machines**, Brisbane. Software manager. Permanent.

**University of Queensland**, Department of Animal Production, Brisbane.  
Analyst/Programmer. Permanent.

**Adler**, Brisbane. Programmer. Permanent.

**Nixdorf Computer**, Brisbane. Trainee Programmer. Permanent.