

**Elizabeth Fraley**  
[efraley@caltonia.com](mailto:efraley@caltonia.com)

1427 Whitewood Court  
San Jose, CA 95131

408-887-3979 (c)  
408-451-9654 (h)

**SKILLS:**

**Languages and APIs, etc.**

Java (1.1, 1.2, 1.3, 1.4), Swing, JMS, RMI, JGL, Applets, Servlets, Servlet-Chaining, Applet-Servlet Communication, XML, XSLT (1.1, 1.2), XSL-FO, FOSI, Perl, CGI, Servlet-CGI chaining, HTML, JavaScript, JScript, C, C++ S1000D, DITA, Docbook, MIL-SPEC, IETP/IETM

**Software Packages**

Arbortext Epic, Arbortext E3 Server, Arbortext Print Composer, Arbortext Epic Architect, Oxygen, Antenna House XSL-FO Formatter, Interwoven TeamSite, Overdrive Readerworks, iSilo, Visual C++, Visual J++, Visual Cafe, CVS, MS Project, Oracle, Dreamweaver, HomeSite, Photoshop, Paint Shop Pro, FrameMaker, Interleaf, Vulcan,

**Graphics Hardware**

IBM RBG640 RAMDAC, RealImage 1000 and 2100 chips, Mitsubishi 3D-RAM chip, Evans & Sutherland "Rhythm 2" 2D/3D Graphics card

**PROFESSIONAL EMPLOYMENT:**

**Single-Sourcing/XML Architect/Programmer**

Single-Sourcing Solutions, Inc.  
November 2004-present

San Jose, CA

**Project:** Consulting Services

**Responsibilities:** Senior Consultant

**Summary:** One of a team of independent consultants

*Independent Consultant*

I specialize in practical development and deployment of mission critical custom XML applications and application-specific XML tool development. I develop tools, environments, and training to promote efficiency, productivity and tangible success for customers. I also present papers regularly at industry and vendor conferences.

**Project:** Authoring-Publishing Modernization Project

**Responsibilities:** Architect, Software Engineer, Technical Advisor

**Summary:** Acted as an expert resource who advised and architected the technical design and strategy of development effort to replace Interleaf authoring system with an XML authoring system at Northrop Grumman Electronic Systems Marine Systems (Sunnyvale, CA).

*Software Engineer*

Assisted in the development of consistent, documented legacy document conversion process. Wrote documentation. Trained team department members in conversion. I enhanced XSLT stylesheets to improve conversion from RTF to XML and developed perl scripts to assist in legacy data transformation.

*Project Architect (division), Technical Advisor (corporate)*

Completed XML technologies analysis and vendor analysis. Wrote documentation to support corporate-wide single-sourcing system design. Wrote proposal for external funding (under consideration) and all supporting documentation (system analysis document, system requirements, test plan, and system design documents) for new XML-based, single-sourcing system that will replace Interleaf authoring application and Interleaf RDM document repository. Wrote staffing responsibilities document to define the roles and responsibilities of IT and functional staff. Serve as technical publications representative to the single-sourcing IT team to represent technical publications requirements in technology evaluations. Proposal and supporting documents are being used in other NGC divisions.

**Member of Technical Staff (Software Engineer)**

Juniper Networks, Inc.

Sunnyvale, CA

November 2000-December 2005

**Project:** Single Sourcing**Responsibilities:** Software Architect, Project Lead, Senior Developer, Writer**Summary:** Sole engineer who independently designed, documented and implemented single sourcing at Juniper Networks.*Software Architect*

Did requirements analysis, investigated technology options, and made vendor selections. Worked with marketing to select a content management solution and to plan later integration. Designed the overall system architecture (physical and logical) and function of each component part. Wrote the initial project plan and did the risk analysis. Designed the branching strategy, process and workflow for the entire project. Planned, gathered requirements and wrote the definition and documentation for future system enhancements including such features as searching, link management, translation support, and automation. Designed the project to scale with the least amount of overhead.

*Project Lead*

I did all basic project management tasks on the project. Developed the feature development plan so each feature was self-contained and specific dependencies identified. Revised the plan as Juniper acquired companies over the period to include their documentation in the overall design, project development timeline, and existing processes. Designed the initial, workable schedule for both the prototype and the pilot. Developed the project plan and schedule for full-scale implementation. Created the business case and ROI analysis and documentation. Throughout the project, I actively mentored and was responsible for day-to-day management of two software interns, one Arbortext-specialist contractor, and one software engineering contractor.

*Senior Developer*

Sole engineer working on code development for both the prototype and the final full-scale implementation. Worked with the formatting specialist to planning the transition from FOSI to XSL-FO. Created several pre-processing tools including CleanXML, TextConverter and Pipe. CleanXML cleans problem code out of XML files that were created in Epic Editor. TextConverter creates formatted text from XML documents. Pipe is an XSL stylesheet-testing program that can chain transformations. Created and continue to maintain the Screen FOSI for Arbortext Epic. Developed HTMLBuilder, the processing engine that takes an XML document with any physical structure and creates the output for all required formats: web, CD, palm, ebook, self-contained zip, proof, and debug. It outputs HTML but also integrates ebook and palm binary conversion. HTMLBuilder is a local client application that I am currently extending to become a server-

side application. HTMLBuilder can process single documents or several documents as part of a batch production.

#### *Writer*

I wrote the initial XML user guide for the Single-Sourcing project. Published one paper and presented at two professional conferences about single sourcing and our success.

#### *Training/Support*

I was front-line training and support for writers as they came into the system. Assisted in the transition of one of our team members from traditional Technical Publications production specialist into a FOSI/XSL-FO formatting specialist.

#### **Project:** General Tools Development

**Responsibilities:** Tools Developer, Web-Posting Lead, Writer, and Trainer

**Summary:** Sole engineer who created and supported tools for the department

#### *Tools Developer*

Created a bug doc reporting form web that automatically submits customer bugs to the gnats bug-tracking database as part of the TL9000 compliance requirements. I have created, extended and maintained several tools needed by the TechPubs Department for production and documentation delivery. I created tools needed by the writers: a tools request form, a web-update request form and calendar. Created a slide conversion program that transforms PPT HTML to a much cleaner version and creates a frames version and no frames version. Maintained tpubs, a program that creates PDFs of all FrameMaker chapter documents, the frames/no-frames versions of WebWorks-generated HTML output, and the downloadable zip output format. I extended tpubs to support books with appendixes and books without indexes and fixed issues with CD output. Maintained cdfix, a tool that transforms absolute paths created in WebWorks-generated HTML to relative links for the documentation CD-ROM. Maintained the TechPubs Department internal web pages.

#### *Posting Lead for JUNOS releases*

Sole responsibility for creating and producing Documentation CD master for all JUNOS releases. Primarily responsible for staging and releasing Juniper Technical Documentation and software to the web. Trained the writing leads to handle posting, but I continue to own the responsibility for the Technical Documentation portion of the external website and continue to develop new external pages as necessary. Completed look and feel upgrade to TechPubs portion of external website. Developed several HTML generators to automate and speed up the time required to post releases to the web.

#### *Acquisition Integration Lead*

I participate in all corporate acquisition integrations for the purpose of maintaining a consistent documentation and software posting process. Documented the original TechPubs workflow: writing, editing, production, and release process; this document was used in the creation of the TL9000 process maps and was the basis for the single-sourcing workflow process.

#### *Writer/Trainer*

Developed process for staging and releasing new and updated product documentation in the department process guide. Trained project leads on the posting process. Both this process and all leads trained in this process passed the TL9000 audit in the first round.

**Founder**

MindTwin

Sunnyvale, CA

July 2000-September 2000

I participated in a start-up that included a former CTO and 2 other engineers. I was responsible for doing projections (funding, staffing, and engineering milestones), business modeling, competitive analysis, and market research. I researched technology for Palm, RIM, Epoch, and WinCE development. We presented to a top-tier VC firm, but decided not to pursue the project.

**Member of Technical Staff (Software Engineer)**

Nuasis Corp.

Mountain View, CA

July 1999-July 2000

**Project:** Product Development**Responsibilities:** Software Engineer**Summary:** Part of original team of engineers who designed and implemented the core product at Nuasis (start-up).*Design & Product Evaluation*

I helped design original core application with the rest of the engineering team to meet basic functionality and service goals within guidelines put forth by marketing requirements. Wrote design document, functional specification, for the following core platform components: Email Escalator, Agent Control Panel, Contact Tracking mechanism (light CRM-like product), Soft Phone, as well as planned the initial CRM integration strategy. Evaluated several email programs and CRM packages to prepare functional specifications and made the final vendor recommendations. Vendor evaluations included ServiceSoft, Cisco eMail Manager, Kana Response, Kana Connect, Kana Conduits/Integration API, Remedy, and Onyx.

*Developer, Soft Phone Application*

Designed and developed a soft phone application to accompany third party VOIP telephony hardware. Technology involved servlet-chaining, applet-servlet communication, security certificate application and interaction with the Java 1.2 plug-in to achieve browser neutrality. The Soft Phone controls the Tundo TelPort, which delivers VOIP traffic to the agent's desktop phone. The Soft Phone is a web-based UI written using Java 1.3 and Swing with an applet-servlet implementation.

*Developer, Email Escalator/Email Integration*

Designed and developed an email escalation mechanism that bridged third party email software products with our core application suite and allowed email to be escalated and presented to agents in the same high-priority fashion as a phone call or internet chat request. Investigated alternate email applications and developed a solution that will allow any of these solutions to plug into the core application suite with minimal code revisions. Developed and evaluated several available email products to include the ability to make escalation work with several packages in an almost plug-and-play sort of design. This application takes performance of the other distributed core applications into account to avoid overwhelming the system as a whole. This application was written entirely in Java and used connection pooling to improve performance. It accessed two separate Oracle database instances using standard SQL through JDBC.

*Developer, Contact Tracker Application*

Did original design, prototyping, GUI building and beginning implementation for Contact Tracker. The Contact Tracker maps NUASIS contact data with customer CRM data and provides pointers to retrieval. The Contact Tracker also offers basic CRM functionality for those customers who do not have a full CRM in place. The Contact Tracker is a servlet-driven web-application written in Java with an HTML presentation.

*Developer, prototype for Agent Console*

Did original prototyping for agent console. Wrote an applet using JavaScript to deliver messages and contacts. It received messages through RMI, and later JMS. This prototype was developed as a proof of concept.

**Software Engineer**

e-Know, LLC  
January 1999-June 1999

Herndon, VA

**Project:** Knowledge Management Product

**Responsibilities:** Software development

**Summary:** One of two engineers who designed product prototype.

*Software Engineer*

Co-designed relational database schema for e-Know corporate knowledge management platform and designed prototype for web-based client interface to be used by employees for resume & other knowledge collection. Development was done with Oracle.

**Project:** Nucleus Calling Card Platform

**Responsibilities:** Software Development, Consultant, and Writer

**Summary:** Served as a design and development consultant to SynapSys, Inc.

*Project Consultant to SynapSys, Inc*

Worked with other engineering consultants to develop the design and requirements for a general-purpose pre- paid and post-paid "cash" account system. Documented features and requirements and analyzed existing marketing documentation to build initial and middle-development specification and final V1 features list. Acted as the project oracle for development team questions regarding database schema structure and design intent.

*Software Engineer at SynapSys, Inc*

One of two engineers who independently designed, documented and implemented a CGI + SQL based API for a browser-based customer service representative application for Nucleus. SQL development used Oracle at the backend; HTML coding was done with Dreamweaver for front-end page development.

**Software Engineer, Intern**

Evans & Sutherland  
May 1998-August 1998

Salt Lake City, UT

Converted and re-designed a device driver library for the new "Rhythm 2" 2D/3D PowerPC-based PCI video card. Programmed the hardware-layer graphics library. Corrected customer library problems. Ported and updated last-generation device driver library in C and C++ for the Evans & Sutherland "Rhythm 2" 2D/3D Graphics card which included the following graphics hardware: IBM RBG640 RAMDAC chip, RealImage 1000 and 2100 chips, and Mitsubishi 3D-RAM chip. Development was done using VAPS, Visual C++, Watcom, and Diab Data Compiler Suites. Test code was written using OpenGL, GLUT, and Renderman.

**Undergraduate Teaching Assistant**

University of Maryland  
September 1997-May 1998

College Park, MD

**Course:** CMSC 106, Programming C

**Department:** Computer Science

**Responsibilities:** Teaching Assistant

Taught one section composed primarily of computer science majors. Gave and graded quizzes. Developed the class "Programming C FAQ" pages, which are still available at <http://www.caltonia.com/cfaq/>. Held office hours to increase tutoring access for Computer Science students.

**Course:** ENEE 114, Programming C for Engineers

**Department:** Electrical Engineering

**Responsibilities:** Teaching Assistant

Taught two sections composed primarily of electrical engineering majors. Taught in tandem with the CMSC class. Gave and graded quizzes. Continued the development of class "Programming C FAQ" pages. Held office hours. In the EE Department, this is a lab class. I developed several lab programs and online quizzes specifically for this course.

### **Associate Customer Support Analyst**

CMSI, Inc.

Columbia, MD

July 1996-June 1997

Software quality assurance testing of current products and enhancements Management and administration of the CreditRevue product and the "Any Bank" customer demonstration model database based on the Progress 4G database. I was front-line technical phone support for the CreditConnection product.

### **Graduate Teaching Assistant**

University of Southern Mississippi

Hattiesburg, MS

September 1993-June 1994

**Course:** ENG 102, Composition Two

**Department:** English

**Responsibilities:** Teaching Assistant

Taught one section of the entry-level course in writing research papers. Designed daily lesson plans. Held office hours. I was the only TA to require students to include an online resource in their research. I held additional training sessions to instruct students on Gopher, Lynx and Mosaic.

### **PUBLICATIONS:**

#### **Arbortext User Group International Conference (AUGI) 2005**

<http://www.arbortext.com/augi/>

May 18-20, 2005, Orlando, FL

*Where Source Development Meets Documentation (Efficiency is in the Tools)*

Audience: Developers

Initial Abstract: [PDF 5 KB]

<http://www.single-sourcing.com/papers/augi2005-fraley-abstract.pdf>

Presentation Slides: [PDF 549 KB]

<http://www.single-sourcing.com/papers/augi2005-fraley-slides.pdf>

#### **Content Management Strategies Conference 2005**

<http://www.cm-strategies.com/>

April 11-13, 2005, Annapolis, MD

*Where Source Development meets Documentation*

Audience: Managers

Initial Abstract: [PDF 5 KB]

<http://www.single-sourcing.com/papers/cm2005-fraley-abstract.pdf>

Presentation Slides: [PDF 187 KB]

<http://www.single-sourcing.com/papers/cm2005-fraley-slides.pdf>

**ACM SIGDOC 2003**

<http://www.acm.org/sigdoc/>

Oct 12, 2003, San Francisco, CA

*Beyond Theory: Making Single-Sourcing Actually Work*

Presentation Slides: [PDF 685 KB]

<http://www.single-sourcing.com/papers/sigdoc2003-fraley-slides.pdf>

Full Paper: [PDF 64 KB]

<http://www.single-sourcing.com/papers/sigdoc2003-fraley-paper.pdf>

**Arbortext User Group International Conference (AUGI) 2003**

<http://www.arbortext.com/augi/>

May 16, 2003, San Antonio, TX

*Branched Libraries and Rapid Release Single-Source Environment Implementation*

Initial Abstract: [PDF 73 KB]

<http://www.single-sourcing.com/papers/augi2003-fraley-abstract.pdf>

Presentation Slides: [PDF 14 MB]

<http://www.single-sourcing.com/papers/augi2003-fraley-slides.pdf>

**PATENTS:**

**Title:** Digital Multimedia Contact Center

**Title:** 24.01.02

**Title:** US/30.01.01/ USA774944

**Title:** 02702070.0-2414-US0202017

**Title:** Nuasis Corporation

**Designation/Listed As:** Co-inventor

**VOLUNTEER/PROFESSIONAL:**

**San Francisco Bay ACM**

[humphrey@sfbayacm.org](mailto:humphrey@sfbayacm.org)

<http://www.sfbayacm.org/>

July 1999-present

*Offices Held*

Treasurer, 2001, 2003-present; Chapter Chair, 2002-2003; PDS Committee Member, 2002-present; PDS Chair, 1999-2002

*Responsibilities*

As PDS Chair, I organized, coordinated and chaired the Professional Development Seminars (PDS) for the chapter. As Treasurer, I maintain the accounts, keep the books, and handle all financial transactions for the chapter. I process all memberships for the chapter and all registration fees for the PDS. As Chapter Chair, I was responsible for the maintaining the running of the chapter.

Seminars I've produced include:

·David Platt, "COM+," April 15, 2000

·James M. Kao, "Introduction to Enterprise JavaBeans Programming and Architecture," February, 2001

·James M. Kao, "XML Web Services with Java," May, 2002

**Society for Women Engineers, Santa Clara County Section**

[swe\\_scv@yahoo.com](mailto:swe_scv@yahoo.com)

<http://swe-goldenwest.org/scvs/www/>

January 2000-present

*Member*

I have participated in scholarship judging. I have also participated in the "Designing Women" program. This program exposes girls from grades 5-8 to science and engineering through a day of projects and fun.

**EDUCATION:**

BS, University of Maryland College Park, 1998, GPA: 3.24

MA, University of Southern Mississippi, 1994, GPA: 3.68

BA, University of Maryland College Park, 1992