

Daniel S. Jacobs
Founder & President
ModelObjects Group
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Object-Oriented System Software Engineering and User Interfaces
Java, J2EE, Flex, JavaScript, more - Architecture, Design and Hands-On Development

Summary

Top-notch, highly experienced software engineer specializing in all aspects of object-oriented architecture, design, and hands-on development. Particular expertise in Java, J2EE, Flex, Hibernate, Spring, JavaScript, Android, AJAX, Web-2.0, Eclipse, multi-threaded architecture, client-server architecture, rich internet applications, mobile applications, compilers and interpreters, relational and object-oriented databases, performance analysis, advanced algorithms and data structures.

Languages and Systems

Java, J2EE, JavaScript, Flex, ActionScript, Spring, Hibernate, Android, MXML, AJAX, HTML, CSS, XML, GWT, GXT, Ext-JS, Dojo, SQL, C++, Lisp, Windows, Linux, ObjectStore, JFC/Swing, AWT, Eclipse, RCP, JSP, Struts, EJB, JDBC, RMI, XPath, XSLT, JAXB, JNLP, Ant, JNI, Oracle, MySQL, and more every week.

Education

MS degree in Software Engineering, 1982, GPA 3.95

University of Connecticut, Storrs CT

Thesis: "A Theory of Compile-Time Type Checking in Languages with Overloading and Polymorphism" – an in-depth study of theoretical limitations and implementation strategy.

BS Degree in Biophysics, 1979, GPA 3.90

University of Connecticut, Storrs CT

Magna Cum Laude, Phi Beta Kappa, Phi Kappa Phi

Experience

ModelObjects Group, 1/1996 to present. Founder and President

Object-oriented software architecture, design, and development. Specializing in object-oriented design and hands-on implementation with Java, J2EE, Flex, JavaScript, Android, and related languages and tools. Projects involve enterprise internet applications, interactive web applications, user-interfaces and user-interface frameworks, database ORM architecture, mobile applications, application server development and integration, multi-threaded client-server frameworks, high availability distributed applications, and advanced components for technology integration.

ModelObjects Group - Major Clients & Projects, most recent first

In-House Project – in progress

Java, Flex, Android, J2EE, Google App Engine

Developing advanced metadata-driven services framework for Google App-Engine on the server side and Android-based mobile devices on the client side. Intent is to fully automate scalable services layer, client-server interactions, and server-side persistence for mobile applications.

Scholastic Inc., Watertown MA

Flex4, Flex3, Java, J2EE, Hibernate, Spring, ActionScript 3, XML, BlazeDS

Designed and implemented several educational games and core components of an on-line math educational instruction system.

Curriculum Associates, Billerica MA

Java, J2EE, Hibernate, Spring, Flex 3, ActionScript 3, XML, CSS, JavaScript, AJAX, BlazeDS, MySQL

Architected, re-architected, designed, and implemented several components of an educational instruction and evaluation system. Adapted legacy frameworks to support new functionality, improved use of Hibernate and Spring, developed both server-side and client-side frameworks.

Millipore, Billerica MA (now part of Merck) – multiple engagements, follow-on work ongoing, 2+ years

Flex 3, ActionScript 3, XML, CSS, JavaScript, AJAX, BlazeDS, J2EE, Web2.0, Java, J2EE

Co-designed and implemented highly graphical self-service biomedical Flex 3 application for analyzing experimental drug discovery data. Featured dynamic analysis, annotation and generation of SVG images, several custom Flex components, innovative data analysis components, web-services integration using BlazeDS. Project successfully completed in half the client's estimated time. Application won corporate innovation award.

Tertl Studos LLC, Montpelier VT – multiple engagements, 2+ years

Java, Flex 3, ActionScript 3, Swing and Swing internals, JNI, Java-2D graphics

Co-designed and implemented several educational programs in Flex 3 for learning about survey analysis and statistical analysis. Co-designed and implemented educational games in Java for learning about algebraic concepts through manipulation of geometric constraints. Featured advanced algorithms in Flex and Java for sample data generation, interactive user-interface and graphic environment and integration with 3rd party geometric constraint engine. Developed interpretive metadata framework and template engine in Flex for modeling and scenario generation.

DemandWare Inc., Woburn MA – multiple engagements, 3+ years

Java, J2EE, JavaScript, AJAX, Web2.0, GWT, GXT, Eclipse plug-ins, XML, IDE, textual and graphical editors

Developed Eclipse-based editor for JavaScript extension, featuring syntax highlighting, code completion, error checking, and extensible metadata support. Designed and developed features of web application using AJAX, JavaScript, and open-source JavaScript libraries. Developed graphical editors, persistent representations, ORM mapping, performance enhancements. Developed GWT/GXT based UI components for customer-facing administrative interface.

Iona Technologies, Waltham MA

Java, J2EE, Eclipse, GEF, GMF, EMF, Camel, Spring, XML

Designed and led development of Eclipse-based tools to support enterprise integration. Designed and implemented high-level graphical editor for specifying the use of standards-based enterprise integration patterns. Designed and led creation of graphically based interactive debugger for graphical editor and Camel runtime.

CodeMesh Inc., Carlisle MA – multiple engagements

Java, JMX, JNI, JVM, BCEL, network protocols, multithreaded server

Designed and implemented a high performance, multithreaded network server to allow multiple non-Java processes to share RPC access to a shared JVM over proprietary socket based protocol.

LeapFrog Technologies, San Francisco CA – multiple engagements

Java, Eclipse plug-ins, GEF, XML

Developed graphic editor to support multiple kinds of annotations for graphical images. System is used to associate program logic with scholastic workbooks, maps, etc., for the LeapFrog FLY.

Unica Corp., Waltham MA

Java, Swing, JDBC, XML

Developed Swing-based user interface for complex field service application. Involved complex data mapping, validation, database interface, off-line interaction support.

Savaje Technologies, Chelmsford MA – multiple engagements, 2+ years

Java, Swing and Swing internals, XML, JPlates, JNDI, JVM, BCEL

Designed and implemented performance profiling tools using JVM-level byte-code instrumentation. Implemented system for translating JNDI specifications into Ant scripts using JPlates. Helped implement custom Swing look-and-feel for Java applications running on cell phones.

Pantero Corp., Waltham MA

Java, Swing, Java-2D, XML, UML, JPlates, JavaCC, JDBC, JAXB, XSLT

Designed and implemented Swing-based user-interface components for data integration and data validation application. Helped define data aggregation and data representation translation semantics and runtime execution model to support complex data transformations.

Sierra Vista Group, Waltham MA – multiple engagements

Java, JPlates, EJB, Struts, MySQL, Tomcat, JBoss, XML, JSP

Designed and implemented web-based management interface for a network of digital jukeboxes.

deNovis Inc., Lexington MA

Java, Swing, XML, JSP, EJB

Designed new approach to modeling and processing information for an insurance-claims-processing system, reducing application complexity over 60%, and increasing system performance significantly.

Openpages Inc., Westford MA – multiple engagements

Java, Swing, XML, JSP, Struts, Tiles, EJB, WebLogic, Oracle

Designed and implemented several components of a web-based content management system and web-services application.

Sonic Software, Bedford MA

Java, Swing, XML, JMS, JMX, JNDI

Designed and implemented Swing user interfaces for configuration and management of data in a message based business process application.

Magtek Express and Express Card Systems, Marblehead MA

Java, JavaPOS, XML, RS-232, USB

Designed and implemented JavaPOS device interfaces for a variety of point-of-sale devices.

WGBH Center for Accessible Media, Boston MA – multiple engagements, 2+ years

Java, Swing, XML, JavaSound, JavaMedia, QuickTime for Java

Designed and implemented a second generation authoring system in Java for adding captions, audio descriptions, and other multimedia effects to media presentations. Integrated with multiple media toolkits and XML-based media description formats. This has become one of the primary caption-authoring systems for public TV networks, as well as for several smart-phones and hand-held devices.

Modulo Systems Corp., Cambridge MA

Java, XML, JDBC, EJB, Swing, IIOP

Lead architectural role in product re-implementation in Java. Designed and implemented framework for exchanging data between independently versioned EJB clients and servers. Designed and implemented JDBC-based data-access framework with Java class generation based on DB schema.

Bidder's Edge Inc., Burlington MA

Java, XML, JDBC, RMI, EJB

Implemented new internet crawler data-gathering software architecture, provided remote monitoring components, specified new format for configuring data gathering of new sites.

Akamai Technologies, Cambridge MA

Java, Java Servlets, JSP, HTML

Implemented high performance tools in Java for transforming HTML to use Akamai's network URL format. Integrated software with several Servlet engines and application servers. Specified user interface design for setting up and managing customer configuration data.

HomePortfolio, Inc., Newton MA – multiple engagements, 3+ years

Java, Java Servlets, ObjectStore, JSP, EJB, HTML, JavaScript

Implemented HTML template package for Java Servlets (similar to JSP) to allow dynamic generation of HTML from database data. Integrated system with object-oriented database. Specified and managed implementation of eCommerce functionality. Implemented framework for highly scalable multi-threaded database access from Java Servlets.

Astral Point Communications, Chelmsford MA

Java, Corba, RMI, JDBC, SNMP, Swing, Java Security

Implemented support for secure, high availability service management using RMI, Corba, JDBC, database replication and failover, system daemon failover, RMI and Corba service failover, secure login with digital certificates. Helped implement Swing UI for network management system.

Novera Software (now part of Mercator Software), Burlington MA – multiple engagements, 3+ years

Java, JavaBeans, AWT, Swing, JDBC

Implemented application frameworks and UI frameworks, provided guidance on Java technology, user interface design, multi-threaded applications. Implemented major portions of user interfaces for application server and database integration products.

Valent Software and Lycos, Inc., Woburn MA and Waltham MA

Java, AWT, Applets, JavaScript

Developed applet client user interface for internet community and chat application.

SourceCraft, Inc., Burlington MA

Java, AWT, JDBC, Java VM

Designed and implemented major subsystems of an all Java development tool, including class browsers, object cross-referencing, compiler and class file integration, JDBC connectivity.

Other Business Ventures

JPlates Inc, 1/2003 to 12/2006. Founder and President. <http://www.jplates.com>

Responsible for every aspect of running a small software company, including design, development, documentation, delivery, and support of JPlates, a fully object-oriented template language. JPlates is an extension of Java that includes template methods and other advanced template-processing features. Delivered 3 major product releases, designed and implemented web-site, trained and assisted customers, developed applications. Company currently inactive.

Prior Employment

Object Design, Inc. Burlington MA, 3/1993 – 12/1995

Senior member of core engineering. As part of team for ObjectStore OODBMS, performed design and implementation of many aspects of the client, such as storage-level versioning system, schema evolution for versioned data, nested transactions, and numerous performance improvements. As team leader for ObjectStore for Smalltalk, had responsibility for complex integration between ObjectStore and ParcPlace Smalltalk virtual machine internals and virtual memory management.

Progress Software Corporation, Nashua NH and Bedford MA, 10/1990 – 3/1993

Lead engineer in charge of system-level components of project Future-Shock, an object-oriented application development system. Responsible for compilers, code generation, runtime storage management, database and network integration. Managed group of four engineers. Designed execution model and many features of a powerful object-oriented dynamic language that is very similar to Java. Implemented optimizing code generator featuring compile-time method selection, method inlining and incremental method recompilation based on dynamic dependencies.

Samsung Software America, Andover MA, 9/1989 – 10/1990

Senior engineer. Developed a persistent data capability for C++ based on a metaclass extension to the C++ compiler. Instances were tracked by the system on creation and destruction to support automatic traversal and migration. Developed an object-oriented graphics package and drawing tool for X windows to construct ER diagrams, and used the persistence facility to save diagrams for editing and integration with database applications.

Gold Hill Computers, Cambridge MA, 5/1986 – 9/1989

Senior Engineer responsible for all aspects of Common Lisp compiler from front-end analysis to generation of native x86 code. Developed several components of Common Lisp language and runtime including structure definition and exception handling. Designed and implemented high level windows system using X windows and Microsoft Windows.

Computer Corporation of America (CCA), Cambridge MA, 3/1985 – 5/1986

Designed and implemented core of a distributed heterogeneous database system for CAD/CAM applications. Responsible for query optimization, global-to-local schema translation, and a transaction compiler.

AT&T Bell Laboratories, North Andover MA, 3/1984 – 3/1985

Designed and implemented language front-end for an application generator generator (no typo). Developed a Prolog interpreter to support flexible pattern matching and inference in the system.

SofTech, Inc. Waltham MA, 9/1982 – 3/1984

Developed a prototype rule-based expert system to model the static semantics of Ada. Contributed to the Ada language specification and to the "Ada Implementers Guide" that focused on semantic ramifications of language features. Implemented portions of Ada compiler.

Professional Organizations

Greater Boston ACM Webtech Chapter

Free and open developers group focusing on Java-related and Web-related technologies. Chairman and organizer from 1996 to 2005. Presented on numerous topics.

BostonEDGE.org

Free and open developers group focusing on Eclipse plugin and RCP development. Chairman and organizer from 2006 to 2007.

Open Source Software Offerings

ModelObjects Java Forms Framework

A powerful user-interface framework for managing the behavior of model objects in the UI. Provides mapping between model properties and UI components, unlimited undo/redo, data validation and propagation, and advanced support for Swing tables and trees.

ModelObjects XJX - XML to Java Translation Framework

Simple framework for translating XML documents into application model Java objects. Uses standard SAX XML parsing such as Xerces.

ModelObjects Rich-App Framework (MORF)

A JavaScript-based application framework for Web-2.0 applications. Provides high-level support for flexible model-driven data-binding and data-validation, master-detail support, MVC patterns, apply and reset, undo and redo, etc., working with Ext-JS and Dojo and other JavaScript and Ajax toolkits.

ModelObjects Metadata Framework (MMF)

Available for both Flex/ActionScript and Java, a high performance expression parser and interpreter framework, template engine, and advanced tools for interpretive metadata-driven applications.

References

Available on request