

**Daniel S. Jacobs**  
**ModelObjects Group**

Daniel S. Jacobs, President  
ModelObjects Group  
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**Object-Oriented System Software Engineering and User Interfaces**  
**Java and JavaScript Expertise - Architecture, Design and Hands-On Development**

Top-notch, highly experienced software engineer specializing in all aspects of object-oriented architecture, design and development, particularly object-oriented software engineering in Java, server-side systems development, user-interface and client-server development with Java, JavaScript, Web-2.0, AJAX, Eclipse, J2EE, Swing, XML, EXT-JS, Dojo, Flex, and related technologies.

**Education:**

**MS degree in Software Engineering, 1982**

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**

University of Connecticut, Storrs CT

Magna Cum Laude, Phi Beta Kappa, Phi Kappa Phi

**Languages and Systems:**

Java, JavaScript, AJAX, HTML, CSS, Eclipse, XML, Ext-JS, Dojo, Flex, SQL, C++, Lisp, Windows, Linux, Solaris, Oracle, ObjectStore, JFC/Swing, AWT, JSP, Struts, J2EE, EJB, JDBC, RMI, XPath, XSLT, JavaCC, JAXB, JNLP, Ant, JNI, more every week.

**Expertise:**

Object-oriented architecture, design and implementation (primarily in Java), multi-threaded program design, Java user interface design and implementation, distributed applications and Java enterprise (J2EE) applications, web-based applications, client-server applications, compilers and interpreters, algorithms and data structures.

**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, JavaScript, and related languages and tools. Projects involve user-interfaces and user-interface frameworks, enterprise internet applications, interactive web applications, JSP and EJB development and integration, database design and integration, application server development and integration, multi-threaded client-server frameworks, high availability distributed applications, and advanced components for technology integration.

Provider of ModelObjects Rich-App Framework (MORF) – a Web-2.0 application framework 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 Group - Major Clients and Projects:**

Iona Technologies, Waltham MA

Java, 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 implementation of graphically based interactive debugger for graphical editor and Camel runtime.

DemandWare Inc., Woburn MA

Java, dynamic JavaScript and AJAX Web2.0 application development, Eclipse plug-ins, XML, custom language runtime and IDE, textual and graphical editors.  
Developed Eclipse-based editor for ECMA-Script 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. Made several enhancements to many parts of software platform for eCommerce suite, including graphical editors, persistent representations, object relational database mapping, performance enhancements.

CodeMesh Inc., Carlisle MA

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.

Tertl Studios LLC, Montpelier VT

Java, Swing and Swing internals, JNI, Java-2D graphics  
Co-designed and implemented pilot version of an educational application for teaching algebraic concepts through manipulation of geometric constraints. Featured advanced interactive graphic environment and tight integration with 3<sup>rd</sup> party geometric constraint engine.

LeapFrog Technologies, San Francisco CA

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

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 sophisticated Swing-based user-interface components for enterprise data integration and data validation application. Made significant contributions to several areas of product architecture and design. Helped define data aggregation and data representation translation semantics and runtime execution model to support complex data transformations.

Sierra Vista Group, Waltham MA

Java, JPlates, EJB, Struts, MySQL, Tomcat, JBoss, XML, JSP  
Designed and implemented web-based management interface for a global network of digital jukeboxes. Using JPlates, was able to reduce the overall cost of development significantly. Over 100 user interface components and over 100 EJB methods implemented and deployed in under 8 months.

deNovis Inc., Lexington MA

Java, Swing, XML, JSP, EJB  
Designed new approach to modeling and processing information for an insurance-claims-processing system, reducing custom language size by over 90%, and reducing application complexity by over 60%, while increasing system performance significantly.

Openpages Inc., Westford MA

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 compliant device interfaces for a variety of point-of-sale devices.

WGBH Center for Accessible Media, Boston MA

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. System runs as Java application, integrated with multiple media toolkits and XML-based media description formats.

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 automatic Java class generation based on DB schema. Designed and implemented XML-to-Java translation framework for rapidly developing XML applications in Java.

Bidder's Edge Inc., Burlington MA

Java, XML, JDBC, RMI, EJB

Specified and implemented new internet crawler data-gathering software architecture, provided remote monitoring components, specified new UI and XML specification 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

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

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. Implemented custom lightweight components, integrated with proprietary network server protocol.

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, advanced UI components, 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 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" which 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.

**References:**

Available on request