

Bruce E. Martin, Ph. D.
820 Humboldt Road
Brisbane, California 94005, USA
+1-415-467-0714
email: martin@xbeans.org
<http://www.xbeans.org/bmartin>

Bruce is one of the pioneers of distributed object computing. At Hewlett Packard Laboratories, he designed and implemented an interface definition language that became the basis for HP's original CORBA submission. At Sun Microsystems, he was one of Sun's CORBA architects and was the primary author of five of the OMG's CORBA Services specifications. At Borland, Bruce was an architect and developer of Borland's first CORBA-based Java Application Server. Bruce has extensive practical experience with Java, J2EE, XML and Web Services.

For the past several years, in cooperation with The Middleware Company, Bruce has been writing, teaching and consulting about J2EE and distributed object technologies. Bruce created The Middleware Company's popular Architect's Course and has given it to several hundred enterprise architects. The [reviews](#) of this course have been outstanding. Bruce has advised many enterprises on improving their software architectures.

Bruce also champions the Xbeans open-source project. The goal of the project is to create a repository of Java Beans that process XML and can be easily composed into distributed data flow applications. More information about the project is available at www.xbeans.org. The project has produced two releases and has been downloaded by several thousand people. Bruce has spoken about the project at numerous industrial and academic conferences.

Bruce has an excellent ability to convey both the conceptual basis of a technology and the practical nuts and bolts use of it. He has given talks around the world on distributed systems, advanced transaction models, object oriented programming, XML and distributed object technologies at both academic conferences and industrial events. Bruce has written many papers for conferences, journals and books.

Bruce received Ph.D. and Masters degrees in Computer Science from the University of California at San Diego, and a Bachelors degree in Computer Science from the University of California at Berkeley. Bruce's Ph.D. dissertation, *Concurrent Nested Object Computations*, presented a novel model and scheduling algorithms for concurrency control on shared abstract objects.

Bruce E. Martin, Ph. D.
820 Humboldt Road
Brisbane, California 94005, USA
+1-415-467-0714
email: martin@xbeans.org
<http://www.xbeans.org/bmartin>

Education History

Ph.D. Computer Science, University of California, San Diego. June, 1988. The title of my dissertation is Concurrent Nested Object Computations.

MS Computer Science, University of California, San Diego. December, 1984.

BA Computer Science, University of California, Berkeley. December, 1980.

Employment History

June, 2005 to present; Sungard Higher Education

Director, Advanced Concepts. I lead a group that is responsible for innovating the company's business through technology. In particular, we look at higher education business problems, research solutions, provide vision and produce proof of concepts for possible future products and services. Our current projects include work in composite applications, SOA and rich internet applications.

Technology Strategy Architect. As a member of the CTO's Technology Strategy Group, I was responsible for developing technology strategy for Middleware and user interface technologies to be used in the company's higher education products. I work with customers, product management, product development and technology vendors.

September, 1999 to December, 2004: teaching, writing and consulting

Senior Enterprise Architect. The Middleware Company. I wrote, taught and consulted about J2EE and distributed object technologies. I created The Middleware Company's popular Architect's Course and have given it to several hundred enterprise architects. The [reviews](#) of this course have been outstanding. I have advised several enterprises on improving their software architectures.

September, 1996 to September, 1999: Borland Corporation, San Mateo, CA.

Product Architect. I lead an effort to design and implement a tool and framework for rapidly constructing distributed applications out of

CORBA components, implemented in Java. I did the majority of the design and implementation of the product. The product became known as the VisiBroker Application Partitioner for Java. The product was in beta testing when Borland acquired Visigenic Software. At Borland, I was an architect of Borland's first (pre J2EE) CORBA-based application server product and made a significant contribution to the implementation of it.

September, 1991 to September, 1996: Sun Microsystems, Mountain View, California

Senior Staff Engineer. At SunSoft, I was instrumental in the definition and architecture of NEO, SunSoft's OMG CORBA-based distributed object product. I defined the distributed application model for NEO and lead a group in the implementation of it. Previously I was the architect of the Object Services in the NEO product. The service specifications were accepted as part of the OMG's CORBA Object Services (COSS) standards. I am the principal author of five COSS standards.

July, 1988 to August, 1991: Hewlett-Packard Laboratories, Palo Alto, California

Researcher. I performed research in distributed object systems to support distributed applications. I participated in the design and implementation of the Common Services distributed C++ object system. I advised HP product divisions that are producing HP's distributed New Wave computing. I worked on concurrency models for distributed and cooperative applications. I wrote several papers on distributed object systems, long-lived transactions and interfaces in C++. I organized a workshop on transactions and objects at the 1990 OOPSLA conference.

September 1983 to June, 1988: University of California, San Diego

Research Assistant. I was supported by the Computer Systems Research Group at UC San Diego, doing research in distributed systems. I designed, implemented and managed a team of students in two distributed systems projects: a parallel procedure call system and a replicated, distributed file system for UNIX. This work resulted in several papers and invited presentations.

Instructor. I taught four upper division courses in the UC San Diego Computer Science Department.

February, 1981 to April, 1983: Amdahl Corporation, Sunnyvale, California.

Software Engineer. I participated in the design, implementation, maintenance and training phases of a product to help programmers maintain software. I designed a week long course and video training material for the product. I presented a paper related to the product at the 6th IEEE International Software Engineering Conference in Tokyo, Japan.

Professional Activities

- ?? Lead and organized Enterprise Java Architecture Workshop, December 6-9, 2004. London, England.
- ?? Program committee member 1998 IEEE International Conference on Configurable Distributed Systems.
- ?? Program committee member 1995 ACM OOPSLA Conference.
- ?? Program committee member 7th International Conference on Software Engineering and Knowledge Engineering.
- ?? Co-organized Transactions and Objects Workshop at 1990 OOPSLA Conference with Professor Krithi Ramamritham.

Software Systems

TORPEDO

I created The Testbed of Object-Relational Products for Enterprise Distributed Objects (TORPEDO). TORPEDO is designed to reveal the sophistication of Object-Relational mapping software in accessing databases in single server and clustered environments. TORPEDO defines a set of realistic application-level operations that detect a significant set of database access optimizations. TORPEDO supports different Java APIs for O-R mapping including Container Managed Persistence (CMP 2.x), Java Data Objects (JDO), Oracle TopLink, and Hibernate. More information on TORPEDO is available at <http://www.torpedo-group.org/>. A paper about TORPEDO appeared at the 21st IEEE International Conference on Data Engineering in Tokyo. The paper is available at the TORPEDO web site.

Xbeans

I lead an open-source project to create a repository of Xbeans. Xbeans are Java Beans that process XML and can be easily composed into distributed data flow applications. More information about the project is available at www.xbeans.org. The project has produced two releases and has been downloaded by several thousand people. I have spoken about the project at numerous industrial and academic conferences.

Application Partitioner for Java, Inprise Application Server

I lead an effort to design and implement a tool and framework for rapidly constructing *distributed applications* out of CORBA components, implemented in Java. I did the majority of the design and implementation of the product. The tool and framework allow application designers to graphically partition and connect Java components into distributed applications. The product provides a novel and flexible binding and instantiation model for distributed application components.

Object Services

I was the architect for a group designing and implementing distributed Object Services for relationships, events, externalization, object life cycle, naming and object properties. The services are a key component of SunSoft's NEO family of products. The services have been standardized by the Object Management Group (OMG) as the COSS standard. I am the principle author of six of the COSS standards.

CommonServices

I participated in the design and implementation of the CommonServices system at HP Laboratories. My principle contribution was the design and implementation of the interface definition language, compiler and run-time library. The system provides a C++ programming model of distributed objects. Application programmers simply write distributed, object-oriented applications as CommonServices interfaces and C++ class implementations. The system was the basis of HP's submission to the Object Management Group's (OMG) CORBA standard.

PARPC

I designed, implemented and supported the PARPC system at the University of California, San Diego. The PARPC system adds *parallel remote procedure calls* to C and C++ programs. Parallel remote procedure calls are useful in a distributed environment for multi-cast communication, replication and remote procedure calls. PARPC supports a high-level network process model. The system is available on a variety of platforms and has been given to several universities and research institutions.

Gemini file system

I participated in the design and implementation of the Gemini file system at the University of California, San Diego. The Gemini file system is a UNIX compatible replicated file system. It was used as a test-bed for experimenting with file replication policies.

Patents

"Method and Apparatus for Managing Relationships Among Objects in a Distributed Object Environment." Patent Number 5,815,710. With Jeff Dinkins and Mark Hapner. Awarded September 29, 1998.

"Method and Apparatus for Determining Equality of Objects in a Distributed Object Environment." Patent Number 6,697,877. With Jeff Dinkins and Mark Hapner. Awarded February 24, 2004.

Personal

I am fluent in Spanish due to living and traveling in Mexico since I was a teenager.

Invited Presentations

"Uncovering Database Access Optimizations in the Middle Tier with TORPEDO" IEEE International Conference on Data Engineering. April 2005. Tokyo, Japan.

"Enterprise Java Architecture Workshop", December 6-9, 2004. London, England.

"Architecting Challenging Scalable Enterprise Applications", Software Development Expo", Boston, Massachusetts, September 23, 2004

"Transactions, Distributed Objects and J2EE" The Server Side Symposium, Boston, Massachusetts, June 27, 2003.

"Transparent Server Side Xbeans", XML One, Boston, Massachusetts, August 26 - 30, 2002

"Data Exchange Using Xbeans Release Two", The 2001 O'Reilly Open Source Convention, San Diego, California, July 25, 2001.

"XSLT Translation using Xbeans", XML DevCon 2001, New York City, April 10, 2001.

"Distributed Xbean Applications", The 2nd International Symposium on Distributed Objects and Applications, September 22, 2000, Antwerp, Belgium.

"XML and Java Based Distributed Applications with Xbeans", XML DevCon 2000, June 28, 2000, New York City, New York. and XML DevCon 2000, San Jose, November 14, 2000, San Jose, California.

"Constructing Distributed Applications Using Xbeans", XML Europe 2000, June 15, 2000, Paris, France.

"Implementing Distributed, XML-based, Data Exchange Applications Using Xbeans", XML SIG Silicon Valley Software Development Forum, May 25, 2000, Palo Alto, California.

"Xbean Distributed Applications", Xtech 2000, March 2, 2000, San Jose, California.

"Java and Shared CORBA Objects on the Web." Advanced C++ Special Interest Group, June 14, 1997, San Jose, California.

"Developing Distributed Applications Using CORBA", SGI Developer's Conference, June 11, 1997. Burlingame, California.

"Distributed Object Computing in the Internet Age", DBExpo, May 14, 1997, San Francisco, California.

"Java and Shared Service Objects on the Web", Object Expo Europe, September, 1996, London, England.

"Introduction to CORBA and CORBA Services" Tutorial given at 2nd USENIX Conference on Object-Oriented Technologies and Systems, June 17, 1996, Toronto, Canada.

"Asynchronous Notifications Among Distributed Objects" Paper given at 2nd USENIX Conference on Object-Oriented Technologies and Systems, June 17, 1996, Toronto, Canada.

"The Separation of Interface and Implementation in C++." Software Entrepreneurs' Forum, Advanced C++ Special Interest Group, July 14, 1995, Santa Clara, California.

"Relating Distributed Objects," 20th International Conference on Very Large Data Bases, September 15, 1994. Santiago, Chile.

COSS: The Common Object Services Specifications, 1994 ACM SIGMOD International Conference on the Management of Data, May 27, 1994, Minneapolis, Minnesota.

The Common Object Services Specifications (COSS), presented to the Object Management Group, OMG Meetings in Dublin(8/94), Pittsburgh (6/94), Salt Lake City (2/94), Austin (12/93), Chicago(7/93) and Paris(5/93).

"Long-lived Concurrent Activities," International Workshop on Distributed Object Management, August, 1992, Edmonton, Canada.

"The Separation of Interface and Implementation in C++." The 3rd USENIX C++ Conference, April 24, 1991, Washington, D.C.

"Transaction Guarantees and Long-lived Concurrent Activities," Workshop on Transactions and Objects, in conjunction with 1990 OOPSLA/ECOOP Conference, Ottawa, Canada, October 21, 1990.

"Access Transparency in CommonServices," Colloquium, Institut National de la Recherche en Informatique et Automatique (INRIA), Rocquencourt Cedex France, October 9, 1990.

"Access Transparency in CommonServices," ISA/ANSA Workshop on C++ in distributed environment, Chorus Systemes, Paris, France, October 8, 1990.

"Concurrent Nested Object Computations," Colloquium, Computing Laboratory, University of Newcastle upon Tyne, Newcastle, UK, May 23, 1990.

"Concurrent Nested Object Computations," Colloquium, Centre de Recherche en Informatique de Montpellier (CRIM), University of Montpellier, Montpellier, France, June 28, 1989.

"Concurrent Nested Object Computations," Colloquium, Department of Computer Science, Columbia University, New York, New York, February 13, 1989.

"Experience with PARPC," Winter 1989 USENIX Conference, San Diego, California, February 1, 1990.

"Concurrent Nested Object Computations," Colloquium, Department of Computer Science, University of California, Santa Cruz, November, 1988.

"Concurrency Control vs. Concurrent Programming," Workshop on Object-based Concurrent Programming, in conjunction with 1988 OOPSLA Conference, San Diego, California, September 27, 1988.

"Concurrent Nested Object Computations," Colloquium, MCC, Austin, Texas, April, 1988.

"Concurrent Nested Object Computations," Colloquium, Department of Computer Science, University of California, Santa Barbara, February 11, 1988.

"Modeling Concurrent Activities with Nested Objects," The 7th International Conference on Distributed Computing Systems, Berlin, West Germany, September 25, 1987.

"PARPC: A System for Parallel Procedure Calls," The 1987 International Conference on Parallel Processing, St. Charles, Illinois, August 17, 1987.

"Parallel Remote Procedure Call and the Portable C Stub Compiler," IEEE Workshop on Design Principles of Experimental Distributed Systems, October, 1986. Purdue University.

"The Gemini Fault Tolerant File System," Berkeley UNIX Workshop, October, 1985.

"Simulando Abstract Data Types en Lenguajes de Programación," Computer Science Department Colloquium, (given in Spanish) at Instituto Tecnológico de Monterrey, México City Campus, September 21, 1984.

"Experience with A Module Package in Producing Production Quality PASCAL Programs," The 6th International Software Engineering Conference, Tokyo, Japan, September 13, 1982.

Publications

"Uncovering Database Access Optimizations in the Middle Tier with TORPEDO" Appeared in *Proceedings of the 21st IEEE International Conference on Data Engineering*. April 2005. Tokyo, Japan.

"ACID is Good. Take it in Short Doses." The Server Side.
<http://www.theserverside.com/articles/article.tss?l=AcidShortDoses>
With Mark Little.

"Distributed Xbean Applications" *Proceedings of the 2nd International Symposium on Distributed Objects and Applications*, published by IEEE Computer Society Press, September 2000.

"Lowering the bar of the DOM API A few easy steps to begin accessing XML data in Java" *IBM DeveloperWorks*, March, 2000.

"Build distributed applications with Java and XML" *JavaWorld*, February, 2000.

"Asynchronous Notifications Among Distributed Objects" In *Proceedings of the 2nd USENIX Conference on Object-Oriented Technologies and Systems*, June 17, 1996, Toronto, Canada.

"Relating Distributed Objects." In *Proceedings of the 20th International Conference on Very Large Data Bases*, edited by Bocca, Jauke and Zaniolo, published by Morgan Kaufmann. September, 1994. pg. 730-739.

"Long-lived Concurrent Activities." In *Distributed Object Management*, edited by Ozsu, Dayal and Valduriez, published by Morgan Kaufmann. Also in *Proceedings of the International Workshop on Distributed Object Management*, August, 1992, Edmonton, Canada.

"An Object-Based Taxonomy of Distributed Computing Systems." In *Readings in Distributed Computing Systems*, published by IEEE Computer Society Press. Also in *IEEE Computer* special issue on distributed computing systems, August, 1991.

"The Separation of Interface and Implementation in C++." In *The Evolution of C++*, edited by Jim Waldo, published by MIT press. Also in *Proceedings of the 3rd USENIX C++ Conference*, April, 1991, Washington, D.C.

"Transaction Guarantees and Long-lived Concurrent Activities." In *Proceedings of the 1990 OOPSLA/ECOOP Workshop on Transactions and Objects*, Ottawa, Canada, October, 1990. Edited by Martin and Ramamritham.

"Experience with PARPC." In *Proceedings of the 1989 Winter USENIX Technical Conference*, San Diego, California, February, 1989.

"Concurrency Control vs. Concurrent Programming." In *Proceedings of the Workshop on Object-based Concurrent Programming, 1988* OOPSLA Conference, San Diego, California, September, 1988.

"Concurrent Nested Object Computations." Ph.D. dissertation, Department of Computer Science and Engineering, University of California, San Diego, June, 1988.

"Modeling Concurrent Activities with Nested Objects," In *Proceedings of the 7th International Conference on Distributed Computing Systems*, Berlin, West Germany, September, 1987. Published by IEEE Press.

"PARPC: A System for Parallel Procedure Calls," In *Proceedings of the 1987 International Conference on Parallel Processing*, St. Charles, Illinois, August, 1987. Published by the Pennsylvania State University Press.

"The Gemini Replicated File System Test-bed," In *Proceedings of the 3rd International Conference on Data Engineering*, Los Angeles, California, February, 1987, Published by IEEE Press. Also in *Information Sciences, an International Journal*.

"Experience with A Module Package in Producing Production Quality PASCAL Programs," In *Proceedings of the 6th International Software Engineering Conference*, Tokyo, Japan, September, 1982, Published by IEEE Press.

Numerous technical reports at Sun Microsystems, HP Labs, University of California, San Diego and National Bureau of Standards.

Reviews of Bruce's Enterprise Java Architecture Workshop

A fantastic opportunity to learn and share in the experiences of others.

Andy Yung, The St. Paul Companies

Bruce rocks

Vibhu Srinivasan, SpiderLogic

I cannot wait to apply the lessons I have learned to my current project.

Richard Wiseman, American Management Systems, Inc.

It's a well presented survey of architectural issues surrounding EJB in the company of your peers.

Lawrence Edelstein,

Found it to provide an excellent overview of the material I need to focus on, in order to be a successful J2EE architect.

Paul Kavanagh, Softface Inc.

Great

Deepak Singh, Robert Half International

I got overall knowledge of the J2EE architecture.

Lukas Busek, Qiagen Operon

Good complement for Java architecture planning and design from Sun.

Cristian Medeleanu, Teranet Inc.

An open and frank discussion about architectural approaches with J2EE.

Glen Mah, Demand Data Services

A good mix of experiences and theory.

Martin Hilferink, Ikea

It was very informative and rich in content. We should have the group come back and reevaluate how they applied it at work.

Elizabeth Johnson, Texas State Government

Required for a J2EE Architect.

Chen Zhang, Avance PCS

This course gave me the added assurance in my skill set and allowed me to retool and "raise the bar". -- Bruce Rocks!

Lamon Gray, Georgia Department of Revenue

Very effective.

Shuchi Mittal, CheckFree Corporation

Most productive and useable course I've attended.

Lou Horner, Bank of America

Of all the courses I've taken, this provided the best student interaction and opportunity to leverage the knowledge and experience of the instructor and of the attendees.

Mark Willis, Carlson Marketing Group

This course was practically relevant and useful to my job!

Alex Torres, Advance PCS

Overall I was quite satisfied with the course.

Vic Siddiqi, Advance PCS

One of the best courses that I've taken.

Doris Cheng, Demand Data Services

This course was excellent, right on target for objectives and the instructor was very knowledgeable in the field.

Timothy Grewe, Nielsen Media Research

Excellent job by the instructor, Bruce Martin. His wealth of knowledge made the course.

Ronald Cooksey, Nielsen Media Research

Bruce Martin is very knowledgeable about the aspects of system architecture. Excellent instructor.

Jeff Baker, Nielsen Media Research

Very positive -- one of the best courses I've ever been on -- the week flew by!

Colm Daly, Chordiant Software

The team discussions were very helpful for more understanding.

Arnd Empting, Siemens

Exactly what someone would expect from a course with this title.

Eduardo Estefano, Siemens

Very interesting and "brainstorming" experience.

Ekkehard Janas, Siemens

The class was very enjoyable. There was a lot of information presented in a timely and easy to understand format.

Level 3

Great!

Level 3

Instructor's knowledge and presentation gave good encouragement to dig deeper into the topics that were covered.

Thomas Koenij, Cardinal Solutions

A taste of the power of J2EE Architectures.

Cardinal Solutions

The course was a good in-depth review of issues surrounding EJB technology.

David Gray

Class made me think -- not just sit and soak in instructor's lecture.

Rita Riley, Federal Reserve Bank of Dallas

Excellent course providing valuable opportunities for the exchange of experience.

Robert Morschel, Fidelity Investments

The quality of the instructor and the course surpassed my expectations.

Yagiz Erkan, DeCare Systems Ireland

Best technical training course I've been on.

Sarah Lowe, Sapient

Engaging and valuable experience. A rare thing for technology training courses.

James Ireland, Sapient

It was very good. What I expected.

Dinusha Ileperuma, Sapient

Excellent way to share, extend and deepen your understanding of EJB/J2EE.

Khahil Rehman, Senicom

The course helped me to think about top level approach for J2EE App design/architecture

Gep de Valk, Effective IT

This course reinforced and strengthened my knowledge of EJBs.

Geetha Ramaswamy, SBC

Discover the reality instead of the hype!

Jonathan Frame, PA Consulting Group

A useful course taught by someone who knew what they were talking about, not just from an academic perspective.

Alistar Baldwin, Nomura International Plc