

# CURRICULUM VITAE

Joseph W. Yoder

7 Florida Drive  
Urbana, IL 61801  
(217) 344-4847 (H/O)  
Email: joe@refactory.com



## Short Biography

Joseph Yoder is a founder and principal of The Refactory, Inc., a company focused on providing training, mentoring and consulting for software architecture, design, implementation, consulting, and of most facets of software development. Joe specializes in architecture, analysis, and design in the following areas: C#.NET; Java; Smalltalk; Patterns; Agile Methods; Testing; Adaptable Systems; Refactoring; Reuse; and Frameworks. Joe has presented many talk/keynotes, tutorials, workshops, and published papers at global conferences. Joe is an accomplished author, having written a few dozen published papers, including being an author of the Big Ball of Mud pattern, which illuminates many fallacies in the approach to software architecture. Additionally, Joe has trained and mentored developers on various types of software applications.

Joseph W. Yoder evolved from the Software Architecture and Patterns group at the University of Illinois. Joe has worked on various projects during his career that has incorporated many technologies. These range from stand-alone to client-server applications, web applications, web services, cloud computing, service oriented architecture, multi-tiered, various databases, object-oriented, frameworks, human-computer interaction, collaborative environments, and domain-specific visual-languages. In addition these projects have spanned many domains, including Medical Information Systems, Ordering, Import, Invoicing, Print, Shipping, Warehouse Management, Manufacturing, Medical Examination, Statistical Analysis, Scenario Planning, Client-Server Relational Database System for keeping track of shared specifications in a multi-user environment, Telecommunications Billing System, and Business & Medical Decision Making.

## Educational History

1993-1998	University of Illinois at Urbana-Champaign Ph. D. Work (Computer Science, partially completed)
1989-1992:	University of Illinois at Urbana-Champaign M.S. (Computer Science)
1984-1989:	University of Iowa with honors and high distinction B.S. (Computer Science and Mathematics)

## Employment History

2010-Present	Architecture, Analysis, Design and Implementation of Enterprise Business Frameworks and Adaptive Systems such as Domain Specific Languages. Assessment and Evaluation involvement at the architectural level, as well as design, development, testing and implementation support. Training and Mentoring such topics as Pragmatic Test Driven Development, Agile Practices and Adaptive Object Models, Refactoring, and Advanced
--------------	--

Object-Oriented Design with Patterns for The Refactory, Inc. International speaker and longstanding member of The Hillside Group where Joe currently serves as the President of the Hillside Board, a group dedicated to improving the quality of software development.

- 1998-Present Consulting, Development, Mentoring, and Training
- GE Health Care - Provided Architecture, Analysis, and Design for developing an Adaptive Architecture related to Adaptive Object-Models (AOMs) and Frameworks. The work was done with distributed teams using Agile Processes such as SCRUM and TDD.
  - Intel - Test Driven Development Course, Advanced Object Oriented Analysis and Design with Patterns Course
  - Itau Unibanco - Systems analysis and consultation
  - Caterpillar - Architecture, Design, Training, Mentoring, and Framework Development
  - Motorola - On-Site Design Pattern Training and Mentoring
  - Cisco - On-Site Design Patterns Training
  - US Navy and Innovative Professional Solutions, Inc. - Refactoring, Analysis, Design, and Development
  - US Navy Air Warfare System – Design Pattern Training
  - Reliance Communications - Application Development and Agile Consulting
  - Communications Security Establishment - Adaptive Object Model Consulting and Mentoring
  - Donovan Data Systems - Object Oriented Design and Patterns Training and Mentoring
  - MedImpact Healthcare Systems, Inc. - Refactoring Training
  - Utah Education Network - Design Patterns Training
  - Illinois Department of Insurance – Refactoring, Design, Development and Mentoring
  - Illinois Department of Public Health - Training, Design, Mentoring, and Review; including development of various Medical Systems
  - Iron Mountain Fulfillment Services - Architecture, Analysis, Design Training and Mentoring. including development of various Manufacturing and Financial Systems
- The Refactory, Inc.  
Urbana, Illinois.
- 1998-Present Web-Design and Programming, Web-Services, and Technical Lead  
CU Local Biz.com  
Urbana, Illinois.
- 1994-1998 Object-Oriented Consulting and Teaching  
Joseph Yoder Enterprises  
Urbana, Illinois.
- 1997-1997 Object-Oriented Consulting and Programming  
ClearSystems  
Dallas, Texas.
- 1994-1998 Project Manager, Research Analyst, Designer, and Programmer  
CAT/NCSA at University of Illinois  
Urbana, Illinois.
- 1992-1995 Project Manager, Architect, and Designer  
New England Research Institute  
Urbana, Illinois.
- 1990-1994 Teaching Assistant  
The University of Illinois at Urbana-Champaign.
- 1990-1993 Project Manager, Research Analyst, Designer, and Programmer.  
University Park Pathology Associates, P.C. and Lifespan Research Institute  
Urbana, Illinois.
- 1987-1989 Software Designer  
Dong-Won Research Company  
Iowa City, Iowa.

## Professional Tutorials, Training, and Talks

*Advanced Object Oriented Analysis  
and Design with Patterns Course*  
Gdansk, Poland December 2012

*Test Driven Development Course*  
Haifa, Israel November 2012

*Project Retrospectives  
(Why, How, When)*  
JDD 2012 Tutorial  
Kraków, Poland October 2012

*Pragmatic, Not Dogmatic TDD:  
Rethinking How We Test*  
JDD 2012 Talk  
Kraków, Poland October 2012

*When Should You Consider  
Meta-Architectures?*  
*Using Meta to Scale the Cloud*  
JDD 2012 Talk  
Kraków, Poland October 2012

*PLoP Bootcamp*  
PLoP 2012  
Tucson, Arizona October 2012

*Project Retrospectives  
(Why, How, and When)*  
CBSoft Tutorial  
CBSoft 2012  
Natal, Brazil September 2012

*Not Dogmatic TDD:  
Rethinking How We Test*  
CBSoft Keynote Address  
CBSoft 2012  
Natal, Brazil September 2012

*SugarLoaf PLoP Bootcamp*  
SugarLoaf PLoP 2012  
Natal, Brazil September 2012

*An Evolutionary Vision of  
Framework Development*  
SugarLoaf PLoP 2012Talk  
Natal, Brazil September 2012

*Pragmatic Test Driven Development*  
Penang, Malaysia Course  
August - September 2012

*Testing System Qualities*  
Agile 2012 Workshop  
Dallas, Texas August 2012

*Pragmatic, Not Dogmatic TDD:  
Rethinking how we test.*  
Agile2012 Talk  
Dallas, Texas August 2012

*Patterns Bootcamp*  
ISSAP / LACCEI Tutorial  
Panama City, Panama July 2012

*When Should You Consider  
Meta-Architectures? Using Meta  
to Scale the Cloud*  
ISSAP / LACCEI Keynote Address  
Panama City, Panama July 2012

*Pragmatic Test Driven Development  
Course with Rebecca Wirfs-Brock*  
Learning for Leverage Public  
Training  
Portland Oregon January 2012

*"Big Ball of Mud: Is This the Best  
That Agile Can Do?"*  
JDD 2011 Keynote Address  
Krakow, Poland November 2011

*Rulemakers and Toolmakers:  
Adaptive Object-Models as an Agile  
Division of Labor*  
JDD 2011 Tutorial  
Krakow Poland November 2011

*PLoP Bootcamp*  
PLoP 2011 Tutorial  
Portland Oregon October 2011

*The Bootcamp, An Introduction to  
Patterns -- Training, Mentoring,  
Experiencing*  
AsianPLoP 2011 Tutorial  
Tokyo, Japan October 2011

*"Total Code Makeover"*  
MiniPLoP 2011 Tutorial  
Sao Paulo, Brazil September 2011

*MiniPloP Bootcamp*  
MiniPloP 2011 Tutorial  
Sao Paulo, Brazil September 2011

*Software - Theory and Practice*  
CBSoft Panelist  
Sao Paulo, Brazil September 2011

*"When Should You Consider  
Meta-Architectures?  
Using Meta to Scale the Cloud."*  
CBSoft Talk  
Sao Paulo, Brazil September 2011

*Rulemakers and Toolmakers:  
Adaptive Object-Models as an Agile  
Division of Labor Ultimate Agility:  
Let your Users Do Your Work!*  
CBSoft Tutorial  
Sao Paulo, Brazil September 2011

*"Using Meta to Scale the Cloud."*  
KSAS Conference Talk  
Seoul, Korea July 2011

*"When Should You Consider Meta  
Architectures? Using Meta to Scale  
the Cloud"*  
SASC 2011 Keynote Address  
Seoul, Korea July 2011

*"Test Driven Development,  
Refactorinng, Patterns and Adaptive  
Object Models"*  
Seoul Agile Users Group Talk  
Seoul, Korea  
July 2011

*Test Driven Development*  
EasyCare Tech Industry Training  
Seoul, Korea  
July 2011

*Rulemakers and Toolmakers:  
Adaptive Object Models as Agile  
Division of Labor Agile Portugal*  
2011 Tutorial  
Porto, Portugal  
June 2011

*Big Ball of Mud: Is This the Best  
that Agile Can Do?*  
SATURN 2011 Plenary Talk  
Burlingame, CA May 2011

*Better Science through Art*  
IME-USP - Workshop  
Instituto de Matemática e Estatística  
Rua do Matão  
Sao Paolo, Brazil March, 2011

*When Should You Consider Meta-  
Architectures? Using Meta to Scale*  
IME-USP 2011 Talk  
Sao Paulo Brazil March 2011

*Patterns to the Nature of Order*  
AOSD Conference Workshop  
Fortaleeza, Brazil March, 2011

*Refactoring: Principals to Practice*  
AOSD Conference Tutorial  
Fortaleeza, Brazil March, 2011

*Rulemakers and Toolmakers:  
Adaptive Object-Models as an Agile  
Division of Labor Tutorial*  
AOSD Conference  
Fortaleez, Brazil March, 2011

*Big Ball of Mud: Is This the Best  
Agile Can Do? Presentation*  
QCon San Francisco 2010  
San Francisco, California  
November, 2010

*Rulemakers and Toolmakers:  
Adaptive Object Models as as Agile  
Division of Labor Tutorial*  
SPLASH Conference 2010  
Reno, Nevada October, 2010

*Trends and Challenges in Software  
Architecture Talk and Panel*  
CBSoft 2010  
Salvador, Bahia, Brazil

*Big Ball of Mud: Is This the Best  
Agile Can Do? Keynote Address*  
SBES 2010  
Salvador, Bahia, Brazil

*Ultimate Agility: Let Your Users Do  
Your Work! Keynote address*  
CBSOft 2010  
Salvador, Bahia, Brazil  
September, 2010

*Big Ball of Mud: Is This the Best  
Agile Can Do? Keynote Address*  
Agile Portugal, Porto, Portugal  
June, 2010

*Big Ball of Mud Talk*  
OTUG, Minneapolis, Minnesota  
May, 2010

*Pattern Writing Tutorial*  
Asian PLoP 2010, Tokyo, Japan  
March, 2010

*Chairman of the Architect Track*  
QCon 2009, San Francisco, CA  
October, 2009

*The Adaptive Object-Model  
Architecture: Giving Users Control  
over Their Business Tutorial and  
Panel*  
OOPSLA 2009, Orlando, FL  
October, 2009

*Big Balls of Mud in Agile  
Development - How to Avoid Them*  
Encontro Agil 2009 Keynote  
Sao Paulo, BR October, 2009

*Agile Refactoring for Making More  
Adaptable Systems*  
Encontro Agil 2009 Tutorial  
Sao Paulo, BR  
October, 2009

*Software Patterns and Quality: Can  
Patterns Help Quality?*  
QCon 2008 Session Chair  
San Francisco, CA  
November, 2008

*The AOM Architecture: Giving  
Users Control over Their Business*  
Dr. Dobbs Architecture  
& Design World 2008 Talk  
Chicago, IL July, 2008

*Web 2.0 Pattern Mining Workshop*  
TOOLS 2008, Zurich, Switzerland  
July, 2008

*Java Design Patterns*  
Utah Education Network Course  
SLC, UT April, 2008

*Design Patterns Three Day Course*  
Cisco, New York, NY March, 2008

*Refactoring Principles One Day*  
Med Impact Course San Diego, CA  
March, 2008

*Adaptive Object-Model Architecture  
Style: "Giving Users Control over  
their Business Models"*  
NII 2007 Tokyo, Japan  
December, 2007

*Refactoring Principles*  
NII 2007 Talk, Tokyo, Japan  
December, 2007

*Software Patterns and Quality*  
SPAQu 2007 Keynote  
Tokyo, Japan December, 2007

*The Adaptive Object-Model  
Architecture: Giving users control  
over their business model*  
Presentation, JAOO Conference,  
Aarhus, Denmark, September 2007.

*Writers Workshop for Papers in  
Software Development*  
Writers Workshop with Linda Rising  
and Bob Hanmer  
OOPSLA 2007 Montreal, Canada

*Design Patterns Course*  
Donovan Data Systems, New York  
July, 2007

*Agile Principles: The XP Process  
Course Recife, Brazil June, 2007*

*Refactoring Principles Course*  
Recife, Brazil May, 2007

*Pattern Writing: The Straight Scoop*  
SugarLoaf PLoP Tutorial,  
Porto de Galinhas, Brazil May 2007

*Design Patterns – GOF and More*  
Faculdade de Engenharia da  
Universidade do Porto, Porto,  
Portugal April, 2007

*Adaptive Object Model Keynote*  
ENEI 2007, Guarda, Portugal  
April, 2007

*Agile Fishbowl*  
ENEI 2007, Guarda, Portugal  
April, 2007

*OO Programming and Design*  
Media Ocean, New York, NY  
December, 2006

*Design Patterns the C# Java Edition*  
Caterpillar, Inc., Peoria, IL  
June, 2006

*AOM Architecture - Tutorial*  
OOPSLA, San Diego, California  
October, 2005

*User Interface Design Principles:  
Patterns for Human Computer  
Interaction*  
Campos do Jordão, Brazil  
August, 2005

*AOM Architecture : Adaptive  
Object-Model Architecture: How to  
Build Systems That Can  
Dynamically Adapt to Changing  
Requirements - Tutorial*  
ECOOP, Glasgow, Scotland  
July, 2005

*A Framework for Financial  
Modelling*  
Sao Paulo, Brazil August, 2004

*Patterns for Making Business  
Objects Persistent in a Relational  
Database*  
Sao Paulo, Brazil  
August, 2004

*Architectural Patterns for Enabling  
Application Security*  
Oslo, Norway June, 2004

*Design Patterns - Java/C# Edition*  
Sao Paulo, Brazil August, 2004

*Architecture and Design of Adaptive  
Object-Models*  
Forteleeza, Brazil August, 2004

*Refactoring Principles*  
Forteleeza, Brazil August, 2004

*Design Patterns the C# Java Edition*  
Caterpillar, Inc., Peoria, IL May,  
2004

*Design Patterns the C# Java Edition*  
CSE, Ottawa, Canada  
October, 2003

*Object-Oriented Success Stories:  
"Learning from Our Failures" Panel*  
Joseph W. Yoder, Ralph Johnson,  
Steven R. Wingo, Ron Jeffries,  
Linda Rising  
Fishbowl Panel at OOPSLA 2003  
October, 2003

*Design Patterns the C# Java Edition*  
Caterpillar Inc., Peoria, IL  
September, 2003

*Design Patterns the C# Java Edition*  
Southern Company,  
Birmingham, AL  
September, 2003

*Design Patterns the C++  
Java Realtime Edition*  
Navy Air Warfare Center, California  
August, 2003

*Design Patterns the C# Java Edition*  
Sao Paulo Brazil August, 2003

*Refactoring Your Code*  
Sao Paulo Brazil August, 2003

*eXtreme Programming*  
Recife, Brazil August, 2003

*Refactoring to Better Design*  
Recife, Brazil August, 2003

*Design Patterns the C# Java Edition*  
Comac, San Jose, CA  
August, 2003

*Design Patterns the C++  
Java Realtime Edition*  
Motorola, Champaign, IL  
July, 2003

*Adaptive Object Models – Tutorial*  
ECOOP, Darmstadt, Germany  
July, 2003

*Object-Oriented Success Stories  
Panel*  
Joseph W. Yoder & Ralph Johnson  
Fishbowl Panel at OOPSLA 2002  
November, 2002

*Design Patterns in Java*  
COPPE, Rio de Janeiro, Brazil  
August, 2002

*Design Patterns in Java*  
ICMC-USP, Brazil August, 2002

*Design Patterns in Java*  
Caterpillar, Inc., Peoria, IL  
March, 2002

*Architecture and Design of Adaptive  
Object Models - Presentation*  
OOPSLA, Tampa Bay, FL  
October, 2001

*Adaptive Object Models and  
Metamodeling Techniques -  
Workshop*  
ECOOP, Budapest, Hungary  
June, 2001

*Design Patterns in Java*  
Caterpillar, Inc., Peoria, IL  
April, 2001

*Smalltalk and Object Design  
Training*  
Lincoln Land Community College.,  
Springfield, IL October, 2000

*Smalltalk and Object Design  
Training*  
Lincoln Land Community College.,  
Springfield, IL September, 2000

*Design Patterns in Java*  
Caterpillar, Inc., Peoria, IL  
July, 2000

*AOM and Design Patterns  
Invited Talk*  
Labatoire d'Informatique de Paris 6,  
France June, 2000

*Metadata and AOM – Workshop*  
ECOOP, Cannes, France  
June, 2000

*Smalltalk and Object Design  
Training*  
Illinois Department of Public  
Health., Springfield, IL December,  
1998

*Metadata and Active Object-Models  
Workshop on Metadata and Active  
Object-Models*  
OOPSLA '98, Vancouver, Canada  
Sunday, 18 October 1998

*Design Patterns in Java*  
Caterpillar, Inc., Peoria, IL  
24-27 August, 1998

*Smalltalk and Object Design  
Training*  
Caterpillar/NCSA, Urbana, IL  
July, 1996

*Teaching in Various Courses  
Received Excellence in Teaching  
Awards*  
*Discrete Mathematical Structures  
Data Structures,  
Concrete Mathematics,  
Introduction to Programming,  
Topics in Compiler Construction,  
Discrete Mathematical Structures,  
Introduction to Theory of  
Computation,*  
University of Illinois., Urbana, IL  
Spring, 1990 – Fall, 1994

## Publications

Daniel Cukier and Joseph William Yoder

“The Artist in the Computer Scientist: More Humanity to our Research”

Onward! Paper SPLASH 2011 Portland, Oregon, October, 2011

Patricia Megumi Matsumoto, Filipe Figueiredo Correia, Joseph William Yoder, Eduardo Guerra, Hugo Sereno Ferreira, Ademar Aguiar

“AOM Metadata Extension Points”

ACM Digital Library PLoP 2011 Conference, Portland, Oregon, October 2011

Hugo Sereno Ferreira, Ademar Aguiar, Filipe Figueiredo Correia, Joseph Yoder

“The Lazy Semantics Pattern on the context of Meta-Architectures”

ACM Digital Library AsianPloP 2011 Tokyo, Japan, October 2011

Eli Acherkan, Atzmon Hen-Tov, Lior Schachter, David H. Lorenz, Rebecca Wirfs-Brock, Joseph W. Yoder

“Dynamic Hook Points”

ACM Digital Library AsianPloP 2011 Tokyo, Japan, October 2011

Hugo Sereno Ferreira, Filipe Figueiredo Correia, Joseph Yoder, Ademar Aguiar

“Patterns of Closed Object-Oriented Meta-Architectures”

ACM Digital Library PLoP 2010 Conference, Reno, Nevada, October 2010

Atzmon Hen-Tov, Lena Nikolaev, Lior Schachter, Rebecca Wirfs-Brock, & Joseph W. Yoder.

“*Dynamic Model Evolution*”

ACM Digital Library PLoP 2010 Conference, Reno, Nevada, October 2010.

Atzmon Hen-Tov, Lena Nikolaev, Lior Schachter, Rebecca Wirfs-Brock, & Joseph W. Yoder.

“*Adaptive Object-Model Evolution Patterns*”

ACM Digital Library SugarLoaf PLoP 2010 Conference, Bahia, Brazil, September 2010.

Leon Welicki, Rebecca Wirfs-Brock, & Joseph W. Yoder.

“*Adaptive Object Model Builder*”

Published in ACM Digital Library PLoP 2009 Conference, Chicago, IL, August 2009.

León Welicki, Rebecca Wirfs-Brock, and Joseph Yoder

“*The Dynamic Factory Pattern*”

Published in ACM Digital Library, PLoP 2008 Conference, Monticello, IL, September 2008.

León Welicki, Rebecca Wirfs-Brock, and Joseph Yoder

“*Rendering Patterns for Adaptive Object-Models*”

Workshop Position Paper, PLoP 2007 Conference, Monticello, IL, September 2007.

Reza Razavi, Noury Bouraqadi, Joseph Yoder, Jean-François Perrot, and Ralph Johnson

*Language Support for Adaptive Object-Models Using Metaclasses*

Published in Computer Languages, Systems, and Structure Vol 31, 199-218, 2005.

Joseph W. Yoder & Ralph Johnson.

“*The Adaptive Object Model Architectural Style*”

Published in The Proceeding of The Working IEEE/IFIP Conference on Software Architecture 2002 (WICSA3 '02) at the World Computer Congress in Montreal 2002, August 2002. Software Architecture System Design, Development and Maintenance



Edited by Jan Bosch, Morven Gentleman, Christine Hofmeister, and Juha Kuusela; Kluwer Academic Publishers 2002.

Nicolas Revault & Joseph W. Yoder.  
*Adaptive Object-Models and Metamodeling Techniques*  
Workshop Results; ECOOP 2001 Budapest, Hungary, June 2001.  
ECOOP '2001 Workshop Reader;  
Lecture Notes in Computer Science;  
Springer Verlag 2001.

Joseph W. Yoder, Federico Balaguer, & Ralph Johnson.  
*"Architecture and Design of Adaptive Object Models"*  
Technology Presentation at the 2001 Conference on Object-Oriented Programming Systems, Languages, and Applications (OOPSLA '01).  
ACM SIGPLAN Notices, ACM Press, December 2001.

Joseph W. Yoder, Federico Balaguer, & Ralph Johnson.  
*"Adaptive Object Models for Implementing Business Rules"*  
Paper for Third Workshop on Best-Practices for Business Rules Design and Implementation, OOPSLA 2001.

Joseph W. Yoder & Reza Razavi.  
*Metadata and Adaptive Object-Models*  
Workshop Results; ECOOP 2000 Cannes, France, June 2000.  
ECOOP '2000 Workshop Reader; Lecture Notes in Computer Science, vol. no. 1964; Springer Verlag 2000.

Joseph W. Yoder & Reza Razavi.  
*Adaptive Object Models*  
OOPSLA Poster Session Abstract; OOPSLA Companion Minneapolis, Minnesota; OOPSLA Addendum, 2000.

Pattern Languages of Programs Design 4  
edited by Neil Harrison, Brian Foote, and Hans Rohnert.  
Addison Wesley, 2000

Brian Foote and Joseph W. Yoder  
*Big Ball of Mud*  
Fourth Conference on Patterns Languages of Programs (PLoP '97) Monticello, Illinois, September 1997. Technical report #wucs-97-34, Dept. of Computer Science, Washington University Department of Computer Science, September 1997.  
Pattern Languages of Programs Design 4 edited by Neil Harrison, Brian Foote, and Hans Rohnert. Addison Wesley, 2000

Joseph W. Yoder and Jeffrey Barcalow  
*Architectural Patterns for Enabling Application Security*  
Fourth Conference on Patterns Languages of Programs (PLoP '97) Monticello, Illinois, September 1997. Technical report #wucs-97-34, Dept. of Computer Science, Washington University Department of Computer Science, September 1997. Pattern Languages of Programs Design 4 edited by Neil Harrison, Brian Foote, and Hans Rohnert. Addison Wesley, 2000

Joseph W. Yoder, Ralph Johnson and Quince Wilson  
*Connecting Business Objects to Relational Databases*  
Fifth Conference on Patterns Languages of Programs (PLoP '98) Monticello, Illinois, August 1998. Technical report #wucs-98-25, Dept. of Computer Science, Washington University Department of Computer Science, September 1998.

Joseph W. Yoder, Brian Foote, Dirk Riehle, and Michel Tilman  
*Metadata and Active Object-Models*  
Workshop Results Submission; OOPSLA Addendum, 1998.

Brian Foote and Joseph W. Yoder  
*Metadata and Active Object-Models*  
Fifth Conference on Patterns Languages of Programs (PLoP '98) Monticello, Illinois, August 1998.  
Technical report #wucs-98-25, Dept. of Computer Science, Washington University Department of  
Computer Science, September 1998.

Brian Foote and Joseph W. Yoder  
*Metadata and Active Object-Models*  
Workshop Position Paper; OOPSLA, 1998.

Joseph W. Yoder, Donald F. Schultz, and Ben T. Williams  
*The MEDIGATE Graphical User Interface for Entry of Physical Findings:  
Design Principles and Implementation*  
The Journal of Medical Systems, 1998. October 1998, Vol 22, No. 5.

Brian Foote and Joseph W. Yoder  
*The Selfish Class*  
Third Conference on Patterns Languages of Programs (PLoP '96) Monticello, Illinois, September  
1996 Pattern Languages of Program Design 3 edited by Robert Martin, Dirk Riehle, and Frank  
Buschman Addison-Wesley, 1997

John Brant and Joseph W. Yoder  
*Creating Reports with Query Objects*  
Third Conference on Patterns Languages of Programs (PLoP '96) Monticello, Illinois, September  
1996 Technical report #wucs-97-07, Dept. of Computer Science, Washington University  
Department of Computer Science, February 1997.

Joseph W. Yoder  
*Patterns For Developing Successful Object-Oriented Frameworks*  
Workshop Position Paper; OOPSLA, 1997.

Joseph W. Yoder  
*A Framework for Building Financial Models*  
Unpublished description of Architecture, Design, and Implementation details; CAT/NCSA, 1997.

Joseph W. Yoder  
*Development of Object-Oriented Frameworks*  
Workshop Position Paper; OOPSLA, 1996.

Joseph W. Yoder  
*The People Side of Object-Oriented Technology*  
Workshop Position Paper; OOPSLA, 1996.

Pattern Languages of Program Design 2  
edited by John M. Vlissides, James O. Coplien, and Norman L. Kerth  
Addison-Wesley, 1996

Brian Foote and Joseph W. Yoder  
*Evolution, Architecture, and Metamorphosis*  
Second Conference on Patterns Languages of Programs (PLoP '95) Monticello, Illinois, September  
1995

Joseph W. Yoder  
*Application of Domain Analysis Techniques to Object-Oriented Systems*  
Workshop Position Paper; OOPSLA, 1995.

Joseph W. Yoder  
*Patterns For Decision-Making in Architectural Design*  
Workshop Position Paper; OOPSLA, 1995.

Ben T. Williams, Joseph W. Yoder, and Erik Littell  
*Probability Graphics Support for Medical Reasoning*  
Methods of Information in Medicine, 1993, 32: pp.229-32.

Joseph W. Yoder  
*The Role of Human-Computer Interaction in Medical Information Systems: Principles and Implementation of MEDIGATE*  
MS Thesis, University of Illinois at Urbana-Champaign, Department of Computer Science, 1992.

Ben T. Williams, Joseph W. Yoder, and Donald F. Schultz  
*The MEDIGATE System for Direct Entry of Physical Findings by the Examiner: User Interface Issues*  
Health Evaluation: Searching for the Hidden Defect; Proceedings of The International Health Evaluation Association Annual Symposium on The Art and Science of Preventive Medicine, La Jolla, California USA, Felitti, V.J. ed, pp. 107-114, 1990.

### **Programming Languages**

C#/.NET	Scheme, Lex, Yacc
Java	SQL
<i>Smalltalk</i>	LISP, Prolog
<i>Common Lisp/CLOS</i>	Ada, Clu, Forth
<i>Objective-C</i>	Pascal, "C", Assembly
C++	BASIC, FORTRAN

### **Systems**

IBM 370/333 (MVS), Prime 750/850, NEXT, SGI, VAX 11/780, Encore (UNIX), Apollo, HPs, OS/2, Sun OS, Linux, BSD Unix, IBM PC-MSDOS, Macintosh including OS X, Windows NT / 9X / 2000 / XP / Vista / 7 / WinCE / Server 2003 / Server 2008 / Server 2010.

### **Software Development Methodologies**

Agile, Unit Testing, Extreme Programming, Test Driven Development, Scrum, Object-Oriented, and Rapid Application Development.

### **Professional Organizations**

1998-present	The Hillside Group, President from 2011 - Present, Vice President from 2005-2010, and Board Member from 2000 - Present
1997-present	Association for Computing Machinery (ACM)

### **Professional Activities**

2012	Director of Local Operations, PLoP 2012, Tucson, Arizona
2012	Planning Committee Member, PLoP 2012, Tucson, Arizona
2012	Invited Talk Agile 2012 Dallas, Texas

## Professional Activities, continued.

2012 Two Invited Talks JDD 2012 Kraków, Poland  
2012 Planning Committee Member ISSAP 2012 Panama City, Panama  
2012 Keynote Address ISSAP 2012 Panama City, Panama  
2012 Invited Talk SugarLoaf PLoP 2012 Natal, Brazil  
2012 Keynote Address CBSoft 2012 Natal, Brazil  
2012 Organizational Committee Member, Agile PT, Porto, Portugal  
2012 Organizational Committee Chair, Chili PLoP 2012, Las Vegas, New Mexico  
2011 Ph.D. Defense Committee, Porto, Portugal.  
2011 Organizer, Meta PLoP, Porto, Portugal.  
2011 Program Chair, Agile PT, Porto, Portugal.  
2011 Programming Committee Member PLoP 2011  
2011 Programming Committee Member OOPSLA 2011  
2011 Programming Committee Member Asian PLoP 2011  
2010 Programming Committee Member and Paper Presentation, PLoP, Reno, Nevada.  
2010 Industrial Track Keynote, SBES, Salvador, Brazil.  
2010 Panel Presenter, CBSoft, Salvador, Brazil.  
2010 SPattern 2010 Program Committee, Krakow, Poland.  
2010 Programming Committee, Tutorial, and Talk, SugarLoaf PLoP, Bahia, Brazil.  
2010 Programming Committee, Organizer, and Keynote, Agile Portugal, Porto, Portugal.  
2010 Invited Talk, OTUG, Minneapolis, Minnesota.  
2010 Conference Organizer and Attendee, ParaPloP, Carefree, Arizona.  
2010 Programming Committee Member and Tutorial, Asian PLoP, Tokyo, Japan.  
2009 Architecture for the Architect Track Organizer and Presenter, QCon 2009, San Francisco, California.  
2009 Panel and Presentation, OOPSLA 2009, Orlando, Florida.  
2009 SPattern 2009 Program Committee, Linz, Austria.  
2009 Keynote Address and Tutorial, Encontro Agil 2009, São Paulo, Brazil.  
2009 Talk and Attendee, Agile 2009, Chicago, Illinois.  
2009 Programming Committee Member, PLoP '09, Chicago, Illinois.  
2009 Attendee, ChiliPloP '09, Carefree, Arizona.  
2008 Effective Design and Clean Code Track Organizer and Presenter, QCon 2008, San Francisco, California.  
2008 Panels Committee Member, OOPSLA '08, Nashville Tennessee  
2008 Co-Conference Chair and Program Committee Member PLoP (co located conference), OOPSLA '08, Nashville, Tennessee.  
2008 Invited Remote Talk, SugarLoaf PLoP '08, Brazil.  
2008 SPatterns 2008 Program Committee, Turin, Italy.  
2008 Invited Talk, Dr. Dobbs Architecture & Design World 2008, Chicago, Illinois.  
2008 Co-organizer and Attendee, ChiliPloP '08, Carefree, Arizona.  
2008 TOOLS Web 2.0 Workshop Organizer, Zurich, Switzerland.  
2007 Invited Talk, SPAQu '07, Tokyo, Japan.  
2007 Panels Chair, OOPSLA '07, Montreal, Canada.  
2007 Program Chair, PLoP '07, Monticello, Illinois.  
2007 SPatterns 2007 Program Committee, Regensburg, Germany.  
2007 Attendee, IFS '07, Germany.  
2007 Programming Committee Member, SugarLoaf PLoP '07, Brazil.  
2007 Adaptive Object Model Presentation, ENEI 2007, Portugal.  
2006 Programming Committee Member, OOPSLA 2006, Portland, Oregon.  
2006 Co-Program Chair and Program Committee Member, PLoP 2006, Portland, Oregon.  
2005 Programming Committee Member, SugarLoaf PLoP '05, Brazil.  
2005 Attendee and Tutorial, OOPSLA '05, San Diego, California.  
2005 Attendee and Tutorial, ECOOP '05, Scotland..  
2005 Programming Committee Member, PLoP '05, Monticello, Illinois.

## Professional Activities, continued.

2004	Conference Coordinator for Allerton, PLoP '04, Illinois.
2004	Attendee, Chili PLoP '04, Carefree, Arizona.
2004	Programming Committee Member and Paper Presentation, SugarLoaf PLoP '04, Brazil.
2004	Attendee and Tutorial, OOPSLA 2004, Vancouver, Canada.
2004	Workshop Organizer, Attendee and Tutorial, ECOOP '04, Norway.
2003	Workshop Organizer, Attendee and Tutorial, ECOOP '03, Germany.
2003	Programming Committee Member, OOPSLA '03, Anaheim.
2003	Attendee and Paper Presentation, SugarLoaf PLoP '03, Brazil.
2002-2004	Programming Committee Member, PLoP, Illinois.
2002	Programming Chair, SugarLoaf PLoP in Brazil.
2002	Attendee and Paper Presentation, World Computer Conference, Montreal.
2002	Attendee and Paper Presentation, WICSA3.
2002	Attendee and Paper Presentation, OOPSLA '02, Seattle.
2001	Workshop Organizer, Attendee and Tutorial, ECOOP '01, Hungary.
2000	Attendee and Paper Presentation, OOPSLA '01, Tampa Bay.
2000	Attendee and Paper Presentation, OOPSLA '00, Minneapolis.
2000	Workshop Organizer, Attendee, and Paper Presentation, ECOOP '00, France.
1998	Conference Chair and Program Committee Member, PLoP '98.
1994-Present	PLoP Attendee, OOPSLA Attendee, and Pattern Author.
1993-Present	Co-founder and Member, Software Architecture Group (UIUC Patterns).

## Consulting History

2012	Intel - Test Driven Development Course, Advanced Object Oriented Analysis and Design with Patterns Course
2012	GE Health Care - Adaptive Systems Architecture, Analysis, and Design with Agile Support
2012	Itau Unibanco - Systems analysis and consultation
2003-2011	Iron Mountain Fulfillment System (IMFS) Architect, Technical Lead, Project Manager, Training and Mentoring.
2008	IBM Refactoring Training Course.
2008	Cisco Design Patterns Training.
2007	US Navy and Innovative Professional Solutions, Inc. - Refactoring, Analysis, Design, and Development
2007	Donovan Data Systems Object Oriented Design and Patterns Training and Mentoring
2005-2006	Reliance Communications Application Development and Agile Consulting
2004	Communications Security Establishment - Adaptive Object Model Consulting and Mentoring.
2003	Motorola On-Site Training and Mentoring.
2002	Washington Mutual Data Migration Consultant.
2000-2003	Caterpillar PPRD Architecture Design, Mentoring, and Review.
2000-2001	Illinois Department of Insurance Design, Mentoring, and Review.
1998-2001	Illinois Department of Public Health Design, Mentoring, and Review.
1995-1998	Caterpillar Financial Modeling and OO Framework Development.
1990-1994	Lifespan Research and University Park Pathology Associates.

## Expertise

**Adaptive Object-Models** – Adaptive Object Models ([www.adaptiveobjectmodel.com](http://www.adaptiveobjectmodel.com)) makes it easier for systems to adapt to new rules, policies, and features without programming. Joe has done pioneering research in this area and has published these results at various Object Oriented and Software Engineering conferences. These publications can be found at the abovementioned website.

**Patterns** – Joseph Yoder also offers unparalleled expertise in design patterns. Patterns distill recurring architectural, structural, and functional motifs employed by experienced designers when they construct their systems. Patterns have been proven to greatly facilitate the development process and give analysts, designers, and developers a common design vocabulary.

**Lightweight Methodologies** – Joe has been working with objects for around fifteen years, and this experience has exposed him to the lightweight, nimble, agile style of development that emerged from this community. He is primarily a proponent of a modern, lightweight, incremental, evolutionary object-oriented development process based on proven practices that have been cultivated in object-oriented development circles for nearly thirty years. Contemporary manifestations of some of these practices include James Highsmith's Adaptive Development, Alistair Cockburn's Crystal development, the SCRUM model, and Martin Fowler's "New Method". Perhaps the best known of these methods is Beck's eXtreme Programming methodology. Our approach utilizes a number of the practices that Beck advocates, such as collaboration, testing, feedback, and adaptation. This development process has especially proven very useful for object-oriented design and web-based applications.

**Web-Based Experience** – Joe has been involved with the web since Mosaic emerged from NCSA. He has built a variety of object-oriented web-based applications, employing a wide range of different technologies. He also has extensive academic and commercial website design and implementation experience.

**Framework evolution** – Joe has been involved with some of the groundbreaking work in the area of framework and object evolution. He has applied these insights he has cultivated from frameworks for a variety of domains. The results of his work can be found at: <http://www.joeyoder.com/Research/Frameworks>.

**Reuse** – Reuse is often touted as one of the benefits of object-oriented technology. However, merely using object-oriented languages and tools will not make one's system reusable. It takes a gift for abstraction, patience, commitment, and experience to glean reusable classes, components and frameworks from the applications that spawn them. Joe has experience on how to make reuse work. Joe has built a number of successful object-oriented frameworks, and reused these frameworks to build new applications.

**Enterprise Library** – Joe was involved in the architectural design and implementation of Illinois Department of Public Health's (IDPH) Enterprise Library. This consisted of a set of reusable frameworks and components for building Enterprise applications. He also assisted Caterpillar and Iron Mountain Fulfillment Services (IMFS) with similar work.

**Security and Persistence** – Joe has some particular expertise in this area, and has incorporated our insights into a number of systems, including systems for IDPH, IMFS, and Caterpillar. Joe's work in this area has been published and validated as proven techniques in Industry.

**Leadership and Entrepreneurial Experience** – Joe has been involved in forming and successfully operating many different business models. This allowed him to lead groups of employees into specified business goals. His leadership has been made possible by his understanding of business principles and the ever changing landscape of technology.

## Summary of Related Projects

The following is a list of related projects that Joe has been involved with. The projects presented are related medical, web-based, and object-oriented applications.

### *Medical Systems*

**AbdoExam** - An Interactive Graphical and Textual Abdominal Examination Record System developed as a prototype to research ways to assist the physician during their examination. The design and implementation used object-oriented and hypertext techniques.

**MEDIGATE** - The MEDIGATE System (Medical Examination Direct Iconic and Graphic Augmented Text Entry System) is a computer enhanced interactive graphic and textual record of the findings from physical examination designed to provide ease of user input and to support organization and processing of the data characterizing these findings. The design of this system employs an object-oriented approach through the direct manipulation of graphical objects integrated with hypertext and semantic networking technologies to build a system that is more natural to the user. The results of this system were written up as Joe's Masters Thesis.

**MEDISTAT** - MEDISTAT is designed to record and help interpret laboratory results, more specifically pathology results. The application incorporates graphical pattern matching along with some primitive diagnostic capabilities. Object-oriented design and implementation and hypertext techniques are used throughout to provide for easy ways to build the diagnostic application to the needs of individual users.

**Ragged Edge Health Risk Appraisal** - This video game for junior-high or high school health education classes was mentioned by the Wall Street Journal on June 21, 1989. It is a real-time non-prescriptive health education video game, which demonstrates (but does not preach) the effects of health behavior choices on undesirable outcomes such as mortality, disfigurement, or even the loss of a driver's license.

**Aids Health Risk Appraisal** - The AIDS/HIV Health Risk Appraisal is a confidential interactive risk communication computer program designed to answer: "What is the probability that I have ever been exposed to HIV, and do I need a blood test?" and "What is the probability that I have been exposed to HIV in the last year, and how do I reduce that probability in the next year?"

**Blood Bank Analysis Tool** - The Blood Bank Analysis System is a computer-based decision support tool for blood banks and the blood banking industry to assist in estimation of the medical, economic, legal and policy consequences of current vs. alternative screening test sequences for human immunodeficiency virus (HIV) and for hepatitis markers in donated blood. This system was designed and implementation using object-oriented techniques and languages and was deployed on Windows.

**Newborn Screening** - This is a project by the Illinois Department of Public Health to provide a computerized system to help support the screening of newborns. There are a few genetic diseases that if observed in the very early years of the life of a baby, they can be treated and the individual can live a normal life. This is an object-oriented system that is being developed in VisualAge Smalltalk. Work is being done for developing Enterprise objects that can be used as the building blocks for quite a few other projects.

**Refugee System** - This is a project by the Illinois Department of Public Health to provide a computerized system to help support the screening of refugees as they enter the country. There are different medical observations and follow-ups that need to be done when a new refugee enters the state and this system supports the collection of those observations along with the necessary follow-up. This is an object-oriented system that was developed in VisualAge Smalltalk using an enterprise framework. This system interfaces with a DB2 database for persisting the collected values.

**Food Drug and Dairy System** - This is a project by the Illinois Department of Public Health, which is replacing and enhancing their mainframe systems for inspecting and following up with food, drug and dairy farms and manufacturers. This is an object-oriented system that was originally being developed in VisualAge Smalltalk using an enterprise framework. This system interfaces with a DB2 database for persisting the collected values and for reporting.

*Various Systems (in addition to some of the above mentioned medical systems)*

**Wheel Loader Information System** - We have developed a large scale X-window program that accesses a relational database system for keeping track of the specifications of equipment for Caterpillar. A metadata environment was created for generating the UIMX, Oracle, and C code that was then compiled based upon the descriptive metadata. This allowed for major changes to the code. A new table could be added to the specification database without writing and debugging tons of code since all you had to do was update the metadata describing the mapping into the real database and re-generate the application. The primary limitation was that it could not be done at run-time and compile time was starting to become very lengthy. During the technology transfer phase, Smalltalk was chosen as the language to allow for a more dynamic generation of the GUIs and the mappings to the database.

**Scenario Planning Tool** - Scenario Planning is being studied as a potential tool to assist decision-makers to be prepared for upcoming events. A scenario is a story of what might happen; possible elements are world trade, oil/commodity prices, political/economic stability, and productivity. This project was developed using ParcPlace VisualWorks and GemStone.

**Financial Modeling Framework** – This is a fairly large financial modeling project for Caterpillar. The main result (from the point of view of Object-Oriented Solutions) is a framework for financial modeling. It lets you quickly build applications that examine financial data stored in a relational database and produces profit and loss statements, balance sheets, detailed analysis of departments, sales regions, and business lines, with the ability to drill down until you hit individual transactions. Metadata is used extensively for storing your business rules in a database.

**Innoverse** - Innoverse is a black-box framework for telecommunications billing developed by ClearSystems. Innoverse makes it possible to quickly produce billing systems for all kinds of telecom service including cellular, PCS, local number portability, conventional local and long distance, and Immarsat satellite services. It is developed under ParcPlace Smalltalk and is integrated with Versant. It was developed using the ENVY environment. Metadata was used extensively for storing the rules in such a manner that a new application could be built with much less effort than normally.

**Packaging Tool** - The Packaging Tool is a VisualWorks Smalltalk class library that provides structures for constructing and configuring software packages as basic components of applications. When building an image for either a run-time application or a development environment, patches, extra utilities, commercial add-ons, and modules for the application need to be filed in. These code segments often make use of classes and methods not in the base VisualWorks image. To ensure that all the code is filed in the right order, dependencies between the code pieces need to be established. This can be accomplished by grouping the code segments into packages and setting up dependencies between the packages. Building a customized image then just requires specifying which packages are desired. The Packaging Tool provides a simple interface for specifying which packages are needed with any dependencies (on other packages) they may have.

**Enterprise Architecture Development** – Joe has worked on many systems in the Enterprise framework, including a C# .NET project involves the incorporation of Adaptive Object-Model technology for describing and building invoices to adapt to evolving customer requirements. The result is an invoicing domain-specific language that allows users to dynamically describe new invoicing rules and adapt to these changing requirements. Additional work has included conversion of existing warehouse applications into Microsoft Windows .NET C# applications running on SQL Server, for a medium-sized US document management and order fulfillment company. We also worked on a C# .NET project involving the incorporation of Adaptive Object-Model technology for describing and building order imports to adapt to evolving customer requirements.



**Domain Specific Languages (DSL)** – I have helped with the creation of many adaptive systems. The projects have ranged from invoicing, order placement, order processing, and printing on demand systems.

### *Web-Based Systems*

**Caterpillar University Relations (CUR)** - CUR is a web-application that provides a web interface to all information pertaining to Caterpillar university relations. It provides Caterpillar employees information about the areas of research available at university partners and the relationship between Caterpillar and its partners. CUR provides Caterpillar employees with the most up to date information by providing access to live data queried from a Microsoft Access database.

**Task Management** - Task Management automates task scheduling and assignment, thus making it so that projects can become more organized. It is a tool that has allows for the task to be dynamically created and organized, prioritized, and followed up upon. There is an administrative module that includes basic security.

**Tutorial Builder** - Tutorial Builder is a generic web-application builder that provides for a web-based graphical means for making a web-based tutorial without writing any HTML pages or CGI code. It is a tool that has allows for the end-users to create a hierarchical listing of web-pages that can be a tutorial, product information, or just about anything. There is an administrative module that includes basic security.

**Java Image Scroller** - Java Image Scroller is a JAVA program that allows for images to be scrolled on the screen and have a URL associated with them. The images and URL's are read from a file thus making it so that the desired behavior can be customized to suite the end-user of the application.

**Database Management Tool** - The Database Management Tool serves as a bridge between a legacy flat files database and an Oracle database. The DBMT can be used to move any flat files database into an Oracle database. Only existing flat files are currently served by the DBMT, but future releases will allow for a flat files database to be created as well. The DBMT provides a simple, graphical interface which allows people who have no experience with SQL, Oracle, or UNIX to perform database tasks such as loading and deleting data

**Java Graph** - This dynamic tool allows the user to plot a set of data points on a two-dimensional Cartesian Coordinate System. The four different types of plot fitting offered are: Linear, Quadratic, Polynomial of exact degree 3 (P3), and Power Law which are added functions which have proved this instrument to be invaluable.

**PLoP Registration System** - This system is a Java web-application that uses a secure server for taking credit card registrations for the Pattern Language of Programming (PLoP) conferences. This system is used for conferences World Wide and was developed using the Security and Persistence patterns published by Joseph Yoder and used in both IDPH and Caterpillar systems. We developed the original web-application in 1995 and have been refining and maintaining the system ever since.

**Scaleable eCommerce Solutions** - The commerce solutions provide the client an expansive solution for meeting the needs of their clients. The systems can be scaled according to client needs. All online sites include order processing, secure credit card handling within high level PCI compliance guidelines, shipping calculations, and tax processing.