Dean Wampler, Ph.D

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Technical Leadership for Data-Intensive Projects

My expertise:

- **Executive Leadership**: I built the engineering organization and delivered internal releases of the IBM Research *Accelerated Discovery Platform,* a cloud-native system for AI-accelerated molecular discovery and digital health applications. I conceived of Lightbend Fast Data Platform, then formed and led the teams that built it. I also led evangelism efforts for fast data at Lightbend (conference speaking, webinars, writing, analyst briefs) and more recently for ML, AI, and reinforcement learning with Ray at Anyscale. I have worked on Marketing and Sales collateral, and collaborated customers and partners, such as the IBM-Cleveland Clinic partnership.
- **Machine Learning:** ML/AI and reinforcement learning engineering and MLOps with a variety of technologies at the IBM Research, Domino Data Lab, Anyscale, and Lightbend.
- **Big Data and Streaming Architectures ("Fast Data"):** Ray, Spark, Flink, Kafka, Kubernetes/OpenShift, Hadoop, Machine Learning and Deep Learning tools, etc. Many of my conference talks and recent writings have discussed the emerging convergence of streaming and ML.
- **Programming Technology:** Functional Programming, Scala, Python, Java, and other languages and tools.
- **Software Development Lifecycle and Team Leadership:** Distributed team building, leadership, and mentoring. Former Agile Software Development consultant.

I am an author and conference speaker with an international reputation, including the following (full list below):

- **Scala 3** blog series (Medium, 2020-2021).
- **Programming Scala, Third Edition:** (O'Reilly, 2021) A comprehensive introduction to the Scala 3.
- **Fast Data Architectures for Streaming Applications, Second Edition:** (O'Reilly and Lightbend, 2018) Trends in streaming data technologies, how to select them, and how to build systems with them.
- **What Is Ray?**: (O'Reilly, 2020) How Ray simplifies distributed computing, especially for ML/AI.
- **Hardware > Software > Process**: (co-author with Paco Nathan. NVIDIA/Manning, 2021) Understanding hardware is essential for performant data-intensive applications.
- **Industry Conference Speaker and Co-organizer:** Strata Data + AI, GOTO, YOW!, Ray Summit, ODSC, MLOps, ScalaWorld, Scala Days, StrangeLoop, QCon, Reactive Summit, AOSD, OOPSLA, and others. My talks are available at polyglotprogramming.com/talks.

Experience

Product Engineering Lead IBM Research USA January 2022 - Present	I built the engineering team and all engineering processes to productize cloud-native services for *Accelerated Discovery* in Science leveraging IBM Research technologies in Quantum Computing, Artificial Intelligence, Generative Modeling, Simulation, and Hybrid Cloud. Applications include molecular discovery and digital-health applications. Member of the Joint Steering Committee and the Infrastructure Committee for the IBM-Cleveland Clinic partnership. Worked with CC technical leadership and research teams on implementing joint Statements of Work (SOWs) using Accelerated Discovery Platform, IBM Cloud, and AWS.
Principal Software Engineer Domino Data Lab USA September 2020 - January 2022	I reported to the *Chief Product and Technology Officer*. I worked on projects to improve the architecture and quality of Domino products for Data Science and MLOps. I also worked on forward-looking technical initiatives. During this time I completed the third edition of Programming Scala, Third Edition, cowrote the NVIDIA/Manning report Hardware > Software > Process (with Paco Nathan), and contributed a chapter to O'Reilly Media's 97 Things Every Data Engineer Should Know.
Head of Developer Relations Anyscale USA November 2019 - September 2020	Anyscale is a startup developing services around the OSS project Ray, a system for distributing Python applications from a laptop to a cluster with relative ease. Ray was started at UC Berkeley to enable researchers in artificial intelligence to more easily develop cutting-edge tools for reinforcement learning and hyperparameter tuning, where cluster-wide execution of work is essential. • I ran all facets of developer relations. I was the de-facto head of marketing. • My team organized Ray Summit, a conference devoted to Ray and its ecosystem, and a series of online events called Ray Summit Connect. I also led the technical program committee for selecting content for these events. • I ran the evangelism strategy, including conference and Meetup appearances, blogging, webinars and podcasting, newsletters, and advertising. • I wrote the O'Reilly report, What Is Ray? and the tutorial Scaling Python Processing with Ray for the O'Reilly Online Learning platform. • I created Anyscale Academy, the open-source, modular training for Ray and its ML/AI libraries. I conducted three live training events for this material. • I taught tutorials and delivered talks on Ray at various industry conferences and Meetups. • I contributed to engineering efforts, recruitment, etc. I also contributed a chapter to 97 Things Every Java Programmer Should Know.

VP, Fast Data Engineering
formerly **Architect for Big Data Applications and Services, Office of the CTO**
Lightbend
International
November 2013 - October 2019
	Created Lightbend Fast Data Platform, then led the engineering team that built it.
	• I conceived the product and technical vision for a next generation, *fast-data* (streaming) platform with integrated support for application development:
	  o Apache Kafka as the data backplane
	  o Four streaming engines: Apache Spark, Apache Flink, Akka Streams, and Kafka Streams
	  o Lightbend Reactive Platform for integrated microservices
	  o Integrated Machine Learning components, such as Kubeflow
	  o Lightbend Cloudflow (Q1, 2019), for accelerated development, deployment, and management of streaming pipeline applications
	  o Deployed on OpenShift, and other Kubernetes distributions (originally implemented on Mesosphere DC/OS, a Apache Mesos distribution
	  o Commercial and OSS management and monitoring tools
	  o Supports cloud and on-premise deployments
	• GA (general availability) in October 2017 for DC/OS. V2.0 for OpenShift/ Kubernetes in December 2018. *Pipelines* introduced in May 2019
	• I built and led the engineering teams that created the product
	• I worked with Business Development colleagues on partner opportunities
	• I worked with Marketing on Sales enablement
	• I worked with Sales on team training and pre-sales engagements
	• I worked with Professional Services on customer engagements and training
	• I led product evangelism: conference talks, webinars, O'Reilly reports, white papers, and analyst briefings on the evolving fast-data landscape
	• I contributed code to Spark, primarily in the area of Mesos integration
	• I wrote Fast Data Architectures for Streaming Applications, Second Edition (O'Reilly Report, December 2018 - first edition, November 2016)
	• I wrote Programming Scala, Second Edition (O'Reilly, December 2014)
	• I was a member of the Program Committees for Strata Data + AI, 2014-2020, GOTO Chicago 2014-2020, Flink Forward 2019, Spark Summit 2017-2019, Scala Days 2015-2017, Reactive Summit 2016-2018, GOTO Aarhus and Copenhagen 2014, CodeMesh/TechMesh London 2013 - 2014, and Big Data Everywhere 2014

Owner and Principal Consultant Concurrent Thought USA April 2013 - November 2013	Consulting on big-data analytics with Hadoop, machine learning, and other tools, Functional Programming with Scala and other languages, Agile software development practices • I mentored Cigna Insurance as they built out their first Hadoop clusters and implemented the first applications on them. Developed Scalding (Scala), Hive, and Java/Python MapReduce applications for analytics and machine learning at scale • I mentored clients who were transitioning to Functional Programming using new languages, such as Scala, or older languages, such as Java, Ruby, and Javascript • I mentored clients adopting Agile Software Development • I was the co-organizer of the Chicago Hadoop Users Group

Principal Consultant Think Big Analytics International April 2011 - April 2013	Consulting on "Big Data" Analytics with Hadoop and Related Tools • I founded *Think Big Academy,* the training division of Think Big Analytics. Developed and delivered courseware on the Hadoop ecosystem, MapReduce programming in Java and Scala (Scalding), Hive, and Pig • I implemented Hadoop-based data warehouse applications for clients in the fields of Internet services, genetics, e-commerce, and government • I wrote Functional Programming for Java Programmers (O'Reilly, July 2011) • I co-wrote, Programming Hive (O'Reilly, October 2012) • I created the open-source project, Stampede • I was a member of the Organizing Committee for OSCON 2011-2012, StrangeLoop 2011-2013, LambdaJam 2013, and GOTO Aarhus 2012 • I co-organized the *Development Languages, Practices, and Techniques* "stage" at Agile 2011 • I co-organized the FREECO @ Onward! 2011 : International Workshop on Free Composition • I was a *Cloudera Certified Hadoop Professional*
Senior Software Engineer DRW Trading Group Chicago, IL November 2009 - March 2011	Development of infrastructure software • I developed scalable, high-performance data collection and visualization applications for enterprise monitoring systems (Scala, JavaScript, Ruby, MongoDB) • I developed a high-performance, highly-reliable appliance for network traffic capture and analysis (Linux Kernel, C, Ruby, JavaScript) • I developed IT management and reporting applications (Ruby on Rails) • I was the co-guest editor for the *IEEE Software* special issue on "Multiparadigm Programming" (Sept./Oct. 2010) • I was a member of the organizing committee for *Commercial Users of Functional Programming* (Oct. 2010) • I co-organized "Scala Summit" at OSCON 2010 (July) • I was a visiting faculty member, Loyola University Chicago, where I taught *Pragmatics of Industrial Software Development* (Fall 2010)
Senior Trainer, Mentor, and Consultant Object Mentor Chicago, IL July 2006 - October 2009	Training, mentoring, and consulting on Object-Oriented, Functional, and Aspect-Oriented Programming (OOP, FP, and AOP), Agile Methods, Scala, Enterprise Java, Ruby, C/C++, and C# • I co-wrote Programming Scala, First Edition (O'Reilly, Sept. 2009) • I developed and delivered courseware and conference talks on OOP, FP, AOP, Test-Driven Development (TDD), Refactoring, Agile techniques, Scala, Java, C++, Ruby, Polyglot and Poly-paradigm Programming, and craftsmanship • I mentored clients on design, XP/agile methods, corporate agile transitions (*Agile in the Large*), Enterprise Java, C/C++, Ruby, Scala, and C# • I founded the Chicago-Area Scala Enthusiasts (CASE) user group

Principal Consultant Aspect Research Associates USA August 2005 - June 2006	Consultant on Aspect- and Object-Oriented Programming, Enterprise Java, Ruby on Rails, and Agile Methods • I was the architect and team lead for new services using the Spring Framework, Hibernate, and other lightweight enterprise Java technologies at an online advertising services provider in San Francisco, CA • I contributed to a *Ruby on Rails* portal project at a major automotive manufacturer • I mentored clients on Spring, AOP, and AspectJ • I contributed to the AspectJ standard library project • I spoke at several conferences on AOP and Ruby development
Directory of NCG Software Development BridgePort Networks Chicago, IL September 2003 - August 2005	Built and directed the **Server Software Development Team** for BridgePort's *Network Convergence Gateway* (NCG), telecom SCP/VLR that integrates VoIP and other IP media with CDMA and GSM wireless networks • I built up the development team from 2 to 10 members • I ran Project Management for all BridgePort development teams, using *Scrum* • I participated in business development and requirements gathering • I mentored the team on software process • I implemented Enterprise Java components and server tools
Site Owner and Editor Aspect Programming Polyglot Programming July 2003 - Present	Editor for advocacy web sites for Polyglot and Poly-paradigm Programming (PPP) and Aspect Oriented Programming/Software Development (AOP/AOSD) • I published conference talks and papers on PPP and AOP • I founded Contract4J, a Java 5 and AspectJ tool that supports *Design by Contract* in Java • I founded Aquarium, an AOP library for Ruby
Sr. Product Manager IBM/Rational Software Redmond, WA January 2002 – August 2003	Senior Product Manager for the J2EE support in Rational XDE, a modeling and patterns-oriented development tool hosted in Eclipse • I specified feature set for J2EE and Java Web Services support in XDE • I participated in whole-product strategies for product evolution and other marketing activities • I worked with Rational and IBM customers and IBM to understand their development needs and to evolve XDE to support those needs • I researched AOP and advocated for AOP support in XDE
Software Architect Powerhouse Technology Seattle, WA January 2001 - September 2001 (Predecessor of BridgePort Networks.)	Software Architect for Powerhouse's *Pinpoint* technology for routing wireless telephone calls over the Internet to WiFi-enabled handsets • I developed the network security architecture, utilizing IPSec, firewalls, proxies, *etc.* • I explored conflicts between Internet standards for Voice over IP (VoIP), security (IPSec), and Network Address Translation (NAT). Designed solutions • I participated in requirements discovery and definition • I developed J2EE based administration services and network architecture • I contributed to business-development and venture capital initiatives

Systems Design Engineer Mercata Bellevue, WA November 1999 - December 2000	Led the **Advanced Development Team** that investigated and implemented new technologies for Mercata, to improve Mercata's e-commerce site and to support corporate objectives for new business initiatives • I was the Team Lead for **Mercata Marketplace**™, a self-service portal for third-party sellers to offer **PowerBuys**™ hosted by Mercata (analogous to auctions on eBay) • I implemented and maintained Mercata's web site for shoppers using WAP phone and Palm™ devices, using the BroadVision One to One™ e-commerce platform • I coauthored U.S. Patent applications for enhancements to Mercata's proprietary *Group Buying* technology • I participated in business development initiatives with Wireless and Broadband partners • I investigated Wireless and Interactive TV (iTV) technologies
Software Development Manager Sequel Technology Corporation Bellevue, WA January 1999 - October 1999	Managed teams developing the user interface and Internet-Protocol (IP) monitoring and filtering technology for Sequel's **Internet Resource Manager**™ (IRM) • I led the team developing next-generation Java and web-based user interface • I contributed to requirements discovery, system architecture and design
Software Architect *Global Mobility Systems* (now part of OpenWave) Bellevue, WA April 1998 - January 1999	Project Lead and Architect for the second-generation **Mobility Operating Environment**™ (MOE), a three-tier, client-server, web-based system for advanced wireless telecom services • I participated in requirements discovery • I implemented user-interface and server components in DHTML and Java
Staff Software Engineer Applied Microsystems Corporation Redmond, WA February 1995 - April 1998	Project Lead and Architect for a new user interface for an existing source-level debugger product line • I led requirements gathering, architecture, design, and implementation • I developed a reusable C++ component framework for debugger-type applications based on the Galaxy Application Environment™ from Visix Software • I designed a cross-platform user interface that supported Windows and X11/Motif design guidelines and exploited the principles of effective human-computer interaction (HCI) • I promoted *use cases* as a tool for meeting software quality assurance (QA) goals • I mentored other engineers in object-oriented (OO) methods • I supervised a small development team
Software Engineer III ATL Ultrasound, Inc. Bothell, WA June 1991 - February 1995	Developed user-interface and system-diagnostics software for real-time medical ultrasound system, the **Ultramark 2000**™ • My team pioneered the use of object-oriented methods and C++ at ATL • I promoted *design by contract* as a tool for improving software quality. Our team had only one bug reported against our subsystem in a three-year project. • I developed diagnostic user interface "panels" for technicians, customers, and other non-technical users • I developed C/C++ software for the VxWorks and iRMX operating systems and X11 user interfaces
Software Engineer Technical Arts Corporation Redmond, WA January 1990 - April 1991	Developed user-interface, data-analysis, and system-control software for a real-time, three-dimensional scanning systems • I pioneered the use of object-oriented design techniques at Technical Arts • I implemented PL/M and C/C++ software for iRMX, UNIX V4.0, and DOS platforms

Technologies

Executive Management	• **Product Conception, Strategy, and Creation**: Created and led teams to develop Lightbend Fast Data Platform and IBM Research *Accelerated Discovery Platform*. Product evangelism strategy at Lightbend and Anyscale, including conference organization. • **Team Building, Management**: Growth and mentoring of globally-distributed development teams. • **Product Management:** Developed the initial product strategy for Lightbend Fast Data Platform. Co-developed the product strategy for IBM Research Accelerated Discovery Platform. Collaborated with the Product Management, Marketing, Sales, Business Development, and Services teams to drive the corporate strategy. De facto product evangelist at Lightbend. • **Project Management**: XP, Kanban, Lean, Scrum, Test-Driven Development (TDD), scaling Agile to large organizations, resource and people management, scheduling and planning. • **Communications**: Recognized industry leader, published author, frequent conference and user group speaker and organizer.
Software Development	• **Kubernetes/OpenShift, Mesos, Hadoop, and Cloud Architectures for Fast Data Processing:** 10 years of experience with Hadoop and other Big Data technologies, 5 years experience with Kubernetes, OpenShift, Mesos, and Cloud platforms AWS and some Azure for batch and streaming data, using Spark, Flink, Kafka, Hive, and microservice libraries, Akka Streams and Kafka Streams. Languages: Scala, Java, Python, some Go, and *nix shells. • **Data Analytics and Machine Learning:** 10 years experience with Machine Learning and Deep Learning, especially *data engineering* and *MLOps,* using Ray, Spark, and streaming data deployment patterns with micro services and model serving as a service. Languages: Scala, Python, and Java. • **Distributed, "Reactive" Programming:** 15 years experience building distributed applications, most recently with Scala, Akka, Kubernetes, and Mesos**.** • **Functional Programming**: 15 years of experience using Scala. Some knowledge of Clojure, Haskell, Erlang, and Scheme. • **Aspect-Oriented Programming**: Pioneering work on applications of AOP to the full development life cycle. Founder of Aquarium, an open-source AOP toolkit for Ruby and Contract4J for *Design by Contract* in Java. • **Object-Oriented Programming**: Design and programming using OOP languages: Scala, Python, Java, JavaScript, Ruby, and C++. • **Software Life-cycle**: XP, Kanban, Lean, Scrum, Test-Driven Development (TDD), and Scaling Agile methods to Large Organizations. • **Languages**: Scala, Java, Python, Bash, Zsh, Ruby, C/C++, and *nix tools. Web tools: JavaScript, HTML, CSS. Some Go, Rust, Clojure, Erlang, Scheme, C#, and Perl. • **Data Stores**: Hadoop, SQL databases, some Cassandra and MongoDB. • **Operating Systems**: Linux and MacOS. • **Cloud Platforms**: AWS and some Azure and GCP. • **Other**: Concurrency, multi-platform portability, real-time and performance issues

Publications and Public Speaking

Scala 3	A blog series on Medium, 2020-2022

Publications and Public Speaking

Programming Scala, Third Edition	O'Reilly, June 2021 (second edition, December 2014, first edition, September 2009)
Hardware > Software > Process	A report co-authored with Paco Nathan for NVIDIA on the importance of hardware awareness when writing data-intensive applications. Manning, June 2021
97 Things Every Data Engineer Should Know	Contributed a chapter called "Streaming Is Different from Batch". O'Reilly Learning Platform, June 2021
What Is Ray?	O'Reilly, September 2020
Scaling Python Processing with Ray	O'Reilly Learning Platform, July 2020
97 Things Every Java Programmer Should Know	Contributed a chapter called "Embrace SQL Thinking". O'Reilly Learning Platform, May 2020
Fast Data Architectures for Streaming Applications, Second Edition	O'Reilly Report, October 2018 (first edition, October 2016)
Programming Hive	(with Ed Capriolo and Jason Rutherglen) O'Reilly, October 2012
Functional Programming for Java Programmers	O'Reilly, July 2011
Clean Code	"Clean Systems" chapter of Robert Martin's *Clean Code* book
Accelerating automation of digital health applications via cloud native approach	Experience report from building *digital health* applications on IBM's Accelerated Discovery Platform.
IEEE Internet Computing, The Functional Web	Guest author for *The Functional Web* column, "Scala Web Frameworks: Looking Beyond Lift" (Sept./Oct. 2011)
IEEE Software	Co-guest editor of the special issue on "Multiparadigm Programming" (Sept./Oct. 2010)
Data Day Texas, January 2023	• Reinforcement Learning with Ray RLlib
YOW! Lambda Jam, May 2022	• Lessons Learned from 15 Years of Scala in the Wild (video and slides)
Detroit Tech Watch, March 2022	• Copious Data: the "Killer App" for Functional Programming
Functional Conf 2022, March 2022	• Lessons Learned from 15 Years of Scala in the Wild (video)
ACM Chicago, December 2021	• Reinforcement Learning with Ray RLlib
Scale by the Bay, October 2021	• Lessons Learned from 15 Years of Scala in the Wild (video)
GOTO Unscripted, September 2021	• Is Machine Learning a Black Box
Scala in the City, July 2021	• Exploring "inline" in Scala 3
Denver CTO Club, May 2021	• Next Generation AI - Towards Widespread Enterprise Adoption
Philadelphia Scala Meetup, April 2021	• What's New with Scala 3?
Scala Love in the City, February 2021	• A Tour of Contextual Abstractions in Scala 3
SF and Chicago Scala Meetups, November 2020	• What's New with Scala 3?
CodeMesh 2020 and Scale by the Bay 2020, November 2020	• Ray: A System for High-performance, Distributed
Meet the Expert, October 2020	• Scaling ML/AI Applications with Ray
NLP Summit, October 2020	• Ray for Natural Language Processing
Chicago Cloud Conference, September 2020	• Reinforcement Learning with Ray RLlib
P1Summit, August 2020	• Panel: How to create your own open source software and community

Publications and Public Speaking

YOW! Data, June 2020	• Cluster-wide Scaling of Machine Learning with Ray
Spark + AI Summit, June 2020	• Ray: Enterprise-Grade, Distributed Python
MLOps: Production and Engineering World, June 2020	• Ray and how it enables easier DevOps
Global STAC Live, June 2020	• Panel: Making Your Analytics More Agile
AICamp, May 2020	• Highly-scalable RL Library for Real-world Applications
Scala in the City, May 2020	• Modularity: A Retrospective
PyCon USA, GOTO Chicago, ChiPy, and SFPython (all online), April 2020	• Ray: A System for High-performance, Distributed Python Applications (talk)
ODSC Boston & EU (online), 2020	• Ray: A System for High-performance, Distributed Python Applications (tutorial)
Milwaukee Big Data, March 2020	• Ray: A System for High-performance, Distributed Python Applications (talk)
GOTO Nights Chicago, February 2020	• Modularity: A Retrospective
AIConf San Jose, Strata Data San Francisco, London, and NYC: 2019	• Hands-on Machine Learning with Kafka-based Streaming Pipelines (tutorial)
Strata Data San Francisco, London, and NYC: 2019	• Executive Briefing: What it takes to use machine learning in fast data pipelines
Strata Data London: 2018	• Executive Briefing: What You Need to Know about Fast Data
Strata Data San Jose, YOW! Australia 2018, BigDataLDN, Scala Days NYC	• Streaming Microservices with Akka Streams and Kafka Streams (talk)
Strata Data San Jose, London, and NYC, O'Reilly Software Architecture Conference NYC: 2018	• Streaming Microservices with Akka Streams and Kafka Streams (tutorial)
GOTO Chicago: 2018	• Bash and All That; Why Ancient *NIX Tools Are Still Essential
Strata Data London and NYC, GOTO Chicago, Reactive Summit, Scale by the Bay, Big Data LDN, ScalaIO, O'Reilly Software Architecture Conference NYC: 2017, **YOW! Data 2018**	• Stream All the Things!
Strata + Hadoop World London 2017	• Scala and JVM for Big Data: Lessons from Spark
Mesoscon North America 2017	• Streaming Data Pipelines on Mesos - Lessons Learned
Strata Data San Jose 2017	• Just Enough Scala for Spark (tutorial)
O'Reilly Software Architecture Conference San Francisco 2016	• An Architecture for Merging Fast Data and Enterprise Applications - The SMACK Stack
Strata Data NYC, and Singapore, Spark Summit EU: 2016	• Just Enough Scala for Spark (tutorial)
Spark Summit 2016	• Spark on Mesos: the State of the Art (with Tim Chen)
Strata + Hadoop World London 2016	• Scala: The Unpredicted Lingua Franca for Data Science (with Andy Petrella)
Scala Days New York and Berlin 2016	• Scala: The Unpredicted Lingua Franca for Data Science (with Andy Petrella)
Strata + Hadoop World San Jose 2016	• Scala and JVM for Big Data: Lessons from Spark
YOW! Brisbane and Sydney 2015	• Scala and JVM for Big Data: Lessons from Spark • Spark Crash Course

Publications and Public Speaking

Big Data Techcon Chicago 2015	• Spark Tutorial • Spark on Mesos • Why Spark Is the Next Top (Compute) Model
Strata + Hadoop World NYC 2015	• Spark on Mesos (with Tim Chen)
Scala World 2015	• Scala and JVM for Big Data: Lessons from Spark
Scala By The Bay 2015	• Keynote: Data Science at Scale with Spark
Spark Summit 2015	• Spark on Mesos - A Deep Dive (with Tim Chen)
Scala Days Amsterdam 2015	• Why Spark Is the Next Top (Compute) Model
GOTO Chicago 2015	• Data Science at Scale with Spark
Strata + Hadoop World London 2015	• Spark on Mesos
O'Reilly Software Architecture Conference 2015	• Reactive Systems: The Why and the What • Error Handling in Reactive Systems
Scala Days San Francisco 2015	• The Unreasonable Effectiveness of Scala for Big Data
Strata + Hadoop World San Jose 2015	• Why Spark Is the Next Top (Compute) Model
Northeast Scala Symposium 2015	• We Won! How Scala Conquered Big Data
Scala eXchange 2014	• Why Scala Is Taking Over the Big Data World
React San Francisco 2014	• Error Handling in Reactive Systems
CodeMesh 2014	• SQL Strikes Back! Recent Trends in Data Persistence and Analysis
Big Data Techcon Boston and San Francisco 2014	• Copious Data: the "Killer App" for Functional Programming • H2O for Fast Data Analytics • Spark Streaming • Spark Tutorial • Scalding Tutorial • Factorie (Machine Learning) Tutorial
GOTO Aarhus and Copenhagen 2014	• Deep Dive into the Big Data Landscape (video)
ScalaDays 2014	• Why Scala Is Taking Over the Big Data World
Philly ETE 2014, Big Data Everywhere Chicago 2014, Various User Groups	• Why Spark is the Next Top (Compute) Model
LambdaJam Chicago 2014	• Reactive Design: A Critique of Current Techniques • Spark Tutorial
React London 2014, LambdaJam Chicago 2014 and YOW! LambdaJam 2014	• Reactive Design: A Critique of Current Techniques (video)
CodeMesh 2013	• What's Ahead for Big Data (video)
GOTO Aarhus 2013	• From Big Data to Big Information (video)
LambdaJam 2013	• Copious Data: the "Killer App" for Functional Programming
GOTOChicago 2013	• What's Ahead for Big Data (video) • The Seductions of Scala (Tutorial)

Publications and Public Speaking

Big Data Techcon Boston 2013	• Beyond MapReduce • Scalding for Hadoop • Machine Learning Crash Course (Tutorial) • Hive for Hadoop Data Warehousing (Tutorial)
TechMesh London 2012	• Beyond MapReduce • The Seductions of Scala (Tutorial)
StrangeLoop 2012	• Workshop on Scalding
Strata Conferences 2012 & 2013, Santa Clara and NYC	• Hive for Hadoop Data Warehousing (Tutorial)
QCon NYC 2012	• MapReduce and Its Discontents
WindyCityDB 2012	• Programming Hive Tutorial
Northeast Scala Symposium 2012	• Why Big Data Needs to Be Functional
FREECO Workshop, Onward 2011	Co-organizer.
CME Technology Conference 2011	• Keynote: Heresies and Dogmas in Software Development
StrangeLoop 2011	• Heresies and Dogmas in Software Development • Moderator: Programming Languages Panel.
Agile 2011	• How Functional Programming Changes Developer Practices • "Stage" Co-producer, *Development Languages, Practices, and Techniques.*
OSCON 2011	• Become a Better Developer with Functional Programming (1/2 day tutorial) • Committee member: OSCON Java
Pragmatics of Industrial Software Development	COMP 388-003, 488-00, Fall 2010, Loyola University, Chicago.
OSCON 2010	• The Seductions of Scala (1/2 day tutorial) • Co-organizer: Scala Summit (1-day of Scala talks)
Commercial Users of Functional Programming 2010	Organizing committee
Erlang Factory 2010	• Scala for Erlang Programmers
StrangeLoop 2010	• The Seductions of Scala • Scalable Concurrent Applications with Akka and Scala
StrangeLoop 2009	• Better Ruby through Functional Programming • Polyglot and Polyparadigm Programming for Better Agility
ICSE 2007	• Aspect Oriented Design for Java, AspectJ, and Ruby (full day tutorial)
OOPSLA 2007	• Aspect Oriented Design for Java and AspectJ (1/2 day tutorial)

Publications and Public Speaking

Aspect-Oriented Software Development Conference 2006 - 2008	• Aquarium: AOP for Ruby (2008) • An Aspect-Oriented Perspective on Object-Oriented Design (2007) • The Challenges of Writing Reusable and Portable Aspects in AspectJ: Lessons from Contract4J (2006) • Contract4J for Design by Contract in Java: Design Pattern-Like Protocols and Aspect Interfaces (2006) • Aspect Oriented Design for Java, AspectJ, and Ruby (1/2 and full-day tutorials, 2006-2007)
RubyConf 2008	• Better Ruby Through Functional Programming (video)
QCon San Francisco 2008 - 2009	• Radical Simplification Through Polyglot and Poly-paradigm Programming (video, slides - 2008) • The Seductions of Scala (full day tutorial - 2009)
JavaOne 2009	• Don't Do This! How Not to Write Java Software
Agile 2007 - 2008	• Ruby's Secret Sauce: Metaprogramming (1/2 day tutorial - 2007) • Clean Systems: Clean Code at the Architecture Level (2008) • The Seductions of Scala (2009) • Acceptance Testing Java Applications with Cucumber, RSpec, and JRuby (2009)
SD West 2007 - 2009	• The Seductions of Scala (Tutorial - shorter version here , 2009) • Better Ruby Through Functional Programming (2009) • Polyglot and Poly-Paradigm Programming (2008) • Aspect-Oriented Programming in Ruby (2008) • Aspect-Oriented Design and Programming in Ruby (2007)
SD Best Practices 2008	• Principles of Ruby Application Design (1/2 day tutorial)
Architecture and Design World 2006 - 2008	• Ruby Application Design (2008) • Aspect-Oriented Design in Ruby (2007) • Aspects in Dynamic Languages (2006) • Architecture Best Practices for Ruby Applications in a Java World (2006)
Chicago ACM	• Polyglot and Poly-paradigm Programming (March 2010)
WindyCityRails 2009	• (Son of) Better Ruby Through Functional Programming (video, slides)
Chicago Polyglot Programmers Group	• Polyglot and Poly-paradigm Programming (May 2008) • The Seductions of Scala (Oct 2008)
Chicago Ruby Users Group	• Aquarium: AOP for Ruby (Oct. 2007)
Chicago Java Users Group	• Aspect-Oriented Programming and Design for Java and AspectJ (Oct. & Dec. 2007 • The Seductions of Scala (Dec. 2008)
DePaul Univ. Computer Science Group, Oct. 2007	• AOP in Academia and Industry
developerWorks Live 2003	• Model-Driven Development of J2EE Applications - A Practical Guide
JBossTwo Conf. 2003	• Panel on the future of Aspect Oriented Programming
IBM's developerWorks	• AOP@Work: Component Design with *Contract4J*

Publications and Public Speaking

oreillynet.com	• Cat Fight in a Pet Store: J2EE vs. .NET • A Pet Market with Flash
polyglotprogramming.com aspectprogramming.com aquarium.rubyforge.org	• *Contract4J:* Design by Contract for Java • *Aquarium:* AOP for Ruby • Use Cases as Aspects

Education

Ph.D., Theoretical Physics University of Washington 1989	• Studied rare decay processes in atoms and nuclei • Developed numerical models of these processes using object-based methods and VAX FORTRAN
MS, Theoretical Physics University of Virginia 1985	• Studied the structure of protons and neutrons in atomic nuclei
BS, Physics University of Virginia 1982	• Minor in Mathematics