

# Dragos Manolescu, Ph.D.

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## Experience

### **SENIOR SOFTWARE DEVELOPER, APPLE MAPS TOOLS (2015-CURRENT)**

- Design and build software tools for the Apple Maps team.

### **BACK END DEVELOPER, WHITEPAGES (2013-2015)**

- Designed, built and upgraded several components of Whitepages' framework for back end micro services. Built Scala clients for Apache ActiveMQ (w/ back-pressure) and Riak (w/ async, non-blocking API). Designed and built a search-space planner and execution engine for reverse phone lookups. Designed and built scalable and asynchronous back-end micro-services serving Whitepages' mobile applications, translating into 145x cost reduction/better resource utilization. Mentored junior developers and interns on Scala, actors/Akka, asynchronous programming and distributed system design.

### **PRINCIPAL DEVELOPER, SERVICENOW (2012-2013)**

- Designed, built and integrated components for cloud infrastructure software updates across data centers. Demonstrated multi-language integration and integration with OSS components by prototyping modules of a cloud-based monitoring system using Scala, Kafka, collectd, OMQ and Python. Reduced alert latencies and improved signal-to-noise ratio in a distributed event processing pipeline by building proxy and coalescing components in Scala, Akka and Apache CXF.

### **DEVELOPER LEAD, HP CLOUD SERVICES (2011-2012)**

- Led a team of 4 software engineers in charge of building HP's Database-as-a-Service. Identified, recruited, and interviewed software developers for HP's Seattle office. Led another group of engineers charged with the development of a messaging in the cloud solution.

### **SOFTWARE DEVELOPER AND CONSULTANT, YAP.TV (2010-2011)**

- Developed a pipeline for processing streaming twitter data and augmenting the mobile and web experience with social media extracted from Twitter. Built components for real-time tweet classification, sentiment analysis, and topic identification. Provided advice and recommendations about product features, design, and technology choices.

### **PRINCIPAL DEVELOPER, MICROSOFT WINDOWS PHONE (2010-2011)**

- Developed the next version of Data & Cloud frameworks for Windows Phone 7. Defined Key Performance Indicators (KPIs) for the Windows Phone 7 Application Platform. Designed and implemented experiments for gauging response time, memory footprint, power consumption. Identified, analyzed, and resolved performance problems.

### **PRINCIPAL PROGRAM MANAGER, MICROSOFT WINDOWS PHONE (2009-2010)**

- Drove shaping the Windows Phone 7 API surface area (Location, Accelerometer, RxLINQ, Push Notifications, Browser Control, etc.). Drove the inclusion of the .NET Reactive Framework (Rx) on Windows Phone 7. Worked with partner groups on ensuring API consistency and 3 screen + cloud alignment.

### **PRINCIPAL PROGRAM MANAGER, MICROSOFT LIVE LABS (2007-2009)**

- Drove the development and shipped projects aimed at advancing the state of the art of Internet technologies (Live Labs Volta, Social Streams, and Web Sandbox). Assembled cross-group project proposals for Live Labs Startup Factory Program and consistently secured funding from executives. Built and managed cross-group teams comprising architects, developers, testers, designers, advisors, and marketers. Drove systematic architecture evaluations and retrospectives for Live Labs projects.

### **SOFTWARE ARCHITECT, MICROSOFT PATTERNS & PRACTICES (2006-2007)**

- Provided architecture oversight on p&p's guidance projects (Web Client Software Factory, Web Service Software Factory, Web Client Responsiveness Bundles). Initiated, led and participated in cross-group incubation projects with Microsoft Research (collaborative, distributed development in Visual Studio), and SQL Server/Live Labs (Volta). Improved the engineering practices through architecture evaluation and validation, prototyping, design and code reviews.

### **PRACTICE LEADER, ARCHITECTURE EVALUATION SERVICES, THOUGHTWORKS (2003-2006)**

- Developed and led ThoughtWorks' software architecture evaluation practice. Assisted Global 1000 companies with architecture evaluation, design reviews, product evaluation and selection, enterprise integration, and software development expertise.

**SENIOR SOLUTIONS ARCHITECT, APPLIED REASONING (2001-2003)**

- Provided consulting services to clients from the telecommunications, insurance, and health care industries. Mentored software engineers and held workshops on software patterns, frameworks, testing, refactoring, and extreme programming. Built, refactored, and extended proprietary Java frameworks for enterprise applications. Wrote technical collateral on Applied Reasoning's Classic Blend family of products.

**ASSISTANT PROFESSOR, UNIVERSITY OF KANSAS (2001-2002)**

- Taught graduate courses in the Software Engineering program (Programming Language Paradigms, Software Project Management, Software Architecture, and Analysis of Algorithms).

**SMALLTALK DEVELOPER, ILLINOIS DEPARTMENT OF PUBLIC HEALTH (1999-2000)**

- Designed and developed components of a blood test result management application for the Illinois Newborn Screening program. Worked with a team of consultants in a VisualAge/DB2 environment on extending an enterprise framework (domain objects; custom object-to-relational persistence layer; GUIs).

**BPR CONSULTANT, NATIONAL CENTER FOR SUPERCOMPUTING APPLICATIONS (1998)**

- Provided Business Process Reengineering and technical know-how to a team of managers and architects with the reengineering of the NCSA allocations process.

**RESEARCH PROGRAMMER, NATIONAL CENTER FOR SUPERCOMPUTING APPLICATIONS (1996-1998)**

- Assisted national body of supercomputer users at NCSA. Installed and maintained GNU software on a variety of super-computers.

**SOFTWARE DEVELOPER, THE BROADCASTING SERVICE OF THE UNIVERSITY OF ILLINOIS (1995-1996)**

- Designed and developed a C++-based workflow system for assembling radio and TV program schedules through Web browsers.

## Education

- University of Illinois at Urbana-Champaign — Ph.D. Computer Science, 2000
- University of Illinois at Urbana-Champaign — M.S. Computer Science, 1997
- Politehnica University, Bucharest Romania — Dipl. Eng., Electrical Engineering, 1995

## Innovation

**US PATENTS GRANTED**

1. 7,958,130 Similarity-based content sampling and relevance feedback
2. 8,060,855 Artifact sharing from a development environment
3. 8,108,711 Systems and methods for hosting and testing services over a network
4. 8,370,425 Transient networks
5. 8,483,669 Mobile sensor network
6. 8,850,325 Scaling social networks
7. 8,806,618 Security by construction for distributed applications
8. 9,015,667 Fuzz testing of asynchronous program code
9. 9,076,125 Visualization of participant relationships and sentiment for electronic messaging
10. 9,159,238 Location-aware selection of public transportation

**US PATENT APPLICATIONS**

1. 20120102503 Green Computing Via Event Stream Management
2. 20120102458 Generating Documentation From Tests
3. 20120096435 Capability-Based Application Recommendation
4. 20120089868 Fuzz Testing Of Asynchronous Program Code
5. 20110246962 State Machine Expressions In Database Operators
6. 20110239229 Predicative And Persistent Event Streams
7. 20110202909 Tier Splitting For Occasionally Connected Distributed Applications
8. 20110138403 Push-Based Application Program Interface Based On Duals Of A Pull-Based Application Program Interface
9. 20100223581 Visualization Of Participant Relationships And Sentiment For Electronic Messaging
10. 20100223341 Electronic Messaging Tailored To User Interest
11. 20100223212 Task-Related Electronic Coaching
12. 20100185630 Morphing Social Networks Based On User Context
13. 20100169134 Fostering Enterprise Relationships
14. 20100088026 Location-Aware Selection Of Public Transportation

15. 20100082751 User Perception Of Electronic Messaging
16. 20100058285 Compositional View Of Imperative Object Model
17. 20100057822 Inverse Transformation Loading
18. 20100057772 Automatic Determination Of An Entity's Searchable Social Network Using Role-Based Inferences
19. 20100042910 Social Media Guided Authoring
20. 20100030648 Social Media Driven Advertisement Targeting
21. 20090249226 Collaborative Tool Use In Virtual Environment
22. 20090228904 Declarative Support For Asynchronous Methods
23. 20090228542 Occasionally-Connected Support Through Off-Line Service-Supplied Proxies
24. 20090228439 Intent-Aware Search
25. 20090199159 Declarative Execution Context Splitting
26. 20090125880 Polymorphic Software Architecture
27. 20080244418 Distributed Multi-Party Software Construction For A Collaborative Work Environment

## Books

- *Pattern Languages of Program Design*, Volume 5; lead editor (with Markus Völter and James Noble); Addison-Wesley, 2006.
- *Integration Patterns*; co-author with David Trowbridge, Ulrich Roxburgh, Gregor Hohpe and E. G. Nadhan; Microsoft Press, 2004.
- *Technology of Object-Oriented Languages, Systems, and Architectures*; Contributor, Chapter 4: An Extensible Workflow Architecture with Objects and Patterns; Theo D'Hondt, editor; Kluwer Academic Publishers, 2003.
- *Pattern Languages of Program Design, Volume 4*; Contributor, Chapter 18: Feature Extraction—A Pattern for Information Retrieval; Neil Harrison, Brian Foote, and Hans Rohnert, editors; Addison-Wesley, 2000.

## Papers

- *LINQ-to-Datacenter* (co-author with Erik Meijer), Cloud Computing and Its Applications (CCA08), October 2008, Chicago, Illinois, USA.
- *Volta: Developing Distributed Applications by Recompiling* (co-author with Brian Beckman and Benjamin Livshits), IEEE Software, September/October 2008.
- *The Growing Divide in the Patterns World* (co-author with Wojtek Kozaczynski, Ade Miller and Jason Hogg), IEEE Software, July/August 2007.
- *Service Orchestration Patterns: Graduating from State of the Practice to State of the Art*, OOPSLA Companion, October 2005, San Diego, CA.
- *Orchestration Patterns*, Proceedings of the 11th Conference of Pattern Languages of Programming, September 2004, Monticello, IL.
- *Java Thin Clients Revisited: An Architecture for Responsive, Live Wireless Applications* (co-author with George Santamarina), OOPSLA Companion, OOPSLA, November 2002, Seattle, WA.
- *Workflow Enactment with Continuation and Future Objects*, OOPSLA, November 2002, Seattle, WA.
- *Understanding Large Systems*, position paper for the Workshop on Software Archeology, OOPSLA 2001, Tampa, FL.
- *Why Java is Not Suitable for Object-Oriented Frameworks* (co-author with Adrian Kunzle), OOPSLA Companion, October 2001, Tampa, FL.
- *Several Patterns for eBusiness Applications* (co-author with Adrian Kunzle), Proceedings of the 8th Pattern Languages of Programming (PLoP), September 2001, Monticello, IL.
- *A Micro-Workflow Component for Federated Workflow* (co-author with Ralph Johnson), Workshop on the Implementation and Application of Object-Oriented Workflow Management Systems III, OOPSLA, October 2000, Minneapolis, MN.
- *A Micro Workflow Framework for Compositional Object-Oriented Software Development* (co-author with Ralph Johnson), Workshop on the Implementation and Application of Object-Oriented Workflow Management Systems II, OOPSLA, November 1999, Denver, CO.
- *Dynamic Object Model and Adaptive Workflow* (co-author with Ralph Johnson), Metadata and Active Object-Model Pattern Mining Workshop, OOPSLA, November 1999, Denver, CO.
- *Feature Extraction—A Pattern for Information Retrieval*, Proceedings of the 5th Pattern Languages of Programming (PLoP), August 1998, Monticello, IL.

- *A Proposal for a Common Infrastructure for Process and Product Models* (co-author with Ralph Johnson), Mid-year Workshop on Applied Object Technology for Implementing Lifecycle Process and Product Models, OOPSLA, July 1998, Denver, CO.
- *A Scalable Approach to Continuous-Media Processing* (co-author with Klara Nahrstedt), Proceedings of the 8th IEEE International Workshop on Research Issues in Data Engineering (RIDE), February 1998, Orlando, FL.
- *A Data Flow Pattern Language*, Proceedings of the 4th Pattern Languages of Programming (PLoP), September 1997, Monticello, IL.
- *Link Management Framework for Hyper-Media Documents* (co-author with Klara Nahrstedt), Proceedings of the IEEE International Conference on Multimedia Computing and Systems, June 1997, Ottawa, Canada.
- *Informed Search Using Equivalent-Class Templates* (co-author with Todd Morgan), Proceedings of the 5th International Conference on Intelligent Systems (ISCA), June 1996, Reno, NV.
- *Interactive Scientific Visualisation: A Novel Approach*, Proceedings of the International Annual Conference on Semiconductors (CAS), the 18th edition, October 1995, Sinaia, Romania.
- *Modeling CMOS Process Design With Neural Structures*, Proceedings of the International Annual Conference on Semiconductors (CAS), the 17th edition, October 1994, Sinaia, Romania.
- *Bragg Mirrors Grown by MOVPE Calibrated In-situ by 514nm Laser Reflectometry* (co-author with Y. Raffle, R. Azoulay, G. Le Roux, L. Dugrand, R. Kuszelewicz and J.C. Michel from France Télécom), Proceedings of the 5th European Workshop on MOVPE and related growth techniques, June 1993, Malmo, Sweden.

## Selected Professional Activities

- [Three Lessons about Gatling and Microservices](#); presented at Seattle Scala meetup
- [Scaling with Scala: Refactoring a Back-end Service into the Mobile Age](#); presented at Eastside Scala meetup
- Typesafe's Webinar "[Whitepages practical experience converting from Ruby to Scala](#)" (with John Nestor)
- Member of the Amazon Web Services, Big Data Seattle, Scala at the Sea, Seattle Data/Analytics/Machine Learning, Seattle MongoDB, Seattle Py, and Seattle Scalability meet up groups.
- Reviewer, Pacific Northwest Scala Conference 2013, Portland, OR, USA.
- Co-Host, [Mobile Track, GOTO 2011 International Software Development Conference](#), Aarhus, Denmark.
- Organizer, Web 2.0 Pattern Mining Workshop at the TOOLS Europe 2008 conference, Zurich, Switzerland.
- Conference Chair, the 6th Annual Conference on the Pattern Languages of Programs (PLoP) 1999, Allerton Park, IL, USA.

## Odds and Ends

- Eligible to work for any US employer (US citizen).