

John Harney

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Summary

- 9 papers published in major academic media related to Web services and Artificial Intelligence
- 3 talks given in major academic conferences related to Web services
- Joint 3rd prize recipient in the University of Georgia Computer Science department poster competition
- Outstanding Teaching Assistant Award recipient
- 2-year University-Wide Graduate School Fellowship
- Lead Instructor for introductory programming courses for 3 semesters
- Extensive knowledge of Web service and Semantic Web technologies
- GPA: 3.8/4.0

Education

PhD Candidate, Computer Science, Fall 2005 - present
University of Georgia, Athens, GA

- GPA: 3.8/4.0
- Thesis Topic(s): *Adaptation in the presence of environment volatility in Web Service (WS) compositions*
- Research Interests: *Web Services, Semantic Web, Artificial Intelligence, Parallel Systems, Databases*
- Relevant Coursework: *Enterprise Integration, Artificial Intelligence, Machine Learning, Networks, Operating Systems, Parallel and Distributed Systems, Algorithms, Databases, Cryptography, Robotics*
- Research Advisor: *Prashant Doshi (UGA)*
- Research Committee Members: *Krzysztof Kochut (UGA), John Miller (UGA), Biplav Srivastava (IBM)*

MS, Computer Science, Fall 2002 – Spring 2005
University of North Carolina - Greensboro, Greensboro, NC

- GPA: 3.7/4.0
- Thesis: *An Optimization Approach for XML Data Integration*
- Research Advisor: *Fereidoon Sadri*

BS, Mechanical Engineering, Fall 1996 – Spring 2000
North Carolina State University, Raleigh, NC

Publications

Book Chapter

- John Harney and Prashant Doshi, "Selective Querying for Adapting Hierarchical Web Service Compositions", in Methodologies for Non-Functional Requirements in Service Oriented Architecture: Requirements Engineering, Model-Driven Development and Security, published by IGI Global in 2010

Journal Papers

- John Harney and Prashant Doshi, "Selective Querying for Adapting Web Service Compositions Using the Value of Changed Information", in IEEE Transactions on Services Computing (TSC), pages 169-185, 2008

Conference Papers

- John Harney and Prashant Doshi, "Selective Querying for Adapting Hierarchical Web Service Compositions Using Aggregate Volatility", in the International Conference on Web Services (ICWS), pages 43-50, 2009 (15.6% acceptance rate)
- John Harney and Prashant Doshi, "Speeding Up Web Service Composition With Volatile External Information", in the World Wide Web Conference (WWW), pages 1201-1202, 2008
- John Harney and Prashant Doshi, "Speeding Up Adaptation of Web Service Compositions Using Expiration Times", in the World Wide Web Conference (WWW), pages 1023-1032, 2007 (14.8% acceptance rate)
- Girish Chafle, Prashant Doshi, John Harney, Sumit Mittal and Biplav Srivastava, "Improved Adaptation of Web Service Compositions Using Value of Changed Information", in Applications and Industry track, the International Conference on Web Services, pages 784-791, 2007 (18% acceptance rate)
- John Harney and Prashant Doshi, "Adaptive Web Process Composition Using Value of Changed Information", in the International Conference on Service Oriented Computing, pages 179-190, 2006 (15% acceptance rate)

Workshop Papers

- John Harney and Prashant Doshi, "Speeding Up Web Service Composition with Volatile External Information", in International Workshop on Context Enabled Source and Service Selection, Integration, and Adaptation, World Wide Web, ACM Conference Proceedings, Vol 294, pages 1-7, 2008
- John Harney and Prashant Doshi, "Adaptive Web Processes Using Value of Change Computations", Workshop on AI-Driven Technologies for Services-Oriented Computing, AAAI, pages 19-25, 2006

Presentations & Talks

- " Selective Querying for Adapting Hierarchical Web Service Compositions Using Aggregate Volatility", in the International Conference on Web Services (ICWS), Los Angeles, CA, July 2009
- "Making BPEL Flexible -- Adapting in the Context of Coordination Constraints Using WS-BPEL", in the International Conference on Services Computing (SCC), Honolulu, HI, June 2008
- "Speeding Up Adaptation of Web Service Compositions Using Expiration Times", in the World Wide Web Conference (WWW), Banff, Alberta, CA, May 2007

Professional Service

- **Publicity Chair and Webmaster**, *International Workshop on Web Services Composition and Adaptation* (WSCA2009, WSCA2008), held in conjunction with the IEEE International Conference on Web Services (ICWS2009) and IEEE International Conference on Services Computing (SCC2008)
 - **WSCA 2009** - <http://lsdis.cs.uga.edu/WSCA2009>
 - **SCC 2008** - <http://www.cs.uga.edu/~jfh/WSCA2008>
- **External Reviewer**, IEEE International Conference on Services Computing (SCC2008)
- **External Reviewer**, IEEE International Conference on Services Computing (SCC2007)

Miscellaneous Honors/Distinctions

- **Joint 3rd prize recipient at the UGA Computer Science Department Poster Competition** - *University of Georgia, Athens, GA (2009)*
- **Outstanding Teaching Assistant Award** - *University of Georgia, Athens, GA (2008)*
- **University-wide graduate school fellowship** - *University of Georgia, Athens, GA (08/05-08/07)*
- **Member of the Large Scale Distributed Information Systems (LSDIS) Lab** - *University of Georgia, Athens, GA (08/05-present)*
- **Undergraduate Minor in History** - *North Carolina State University, Raleigh, NC (05/00)*
- **Designed the 4-valve option for the PAL** – later named in my honor (www.leapte.com) - *Leap Technologies, Carrboro, NC (08/99)*
- **Mead, Inc Nazemi Award for Outstanding Thermal Systems Design** - *North Carolina State University, Raleigh, NC (05/99)*

Research & Projects

- **(Summer 2009 - present) Semantic Phyloinformatic Web Service (WS) Using the EvoInfo Stack for the Virtual Data Center (currently under revision – URL coming soon)**
 - Implemented a “Semantic WS” that utilizes a well defined exchange format and ontology developed by the EvoInfo group at the National Evolutionary Synthesis Center (NESCENT)
 - Used SAWSDL annotations to attach semantic meaning to WS input
 - Used the WSDL2.0 standard for WS interface design, allowing flexible service access via Representational State Transfer (REST) style or Simple Object Access Protocol (SOAP)
- **(Fall 2005 – present) PhD dissertation research - Adaptation in the presence of environment volatility in Web Service compositions (see publication list for details)**
 - Identified the problem of volatility in SOA environments
 - Utilized Markov Decision Processes (MDPs) to compose Web services
 - Adapted WS compositions to accommodate changes in the environment
 - Optimized the time required to perform adaptations
 - Utilized Web service and Semantic Web technologies (SOAP, UDDI, WSDL, BPEL, OWL, RDF)

- **(Fall 2008) Real-time ontology editor**
 - Used AJAX to create an asynchronous real-time graphical ontology editor (my role on the team was the development of the backend ontologies using JENA)
- **(Spring 2007) Development of an optimal strategy for craps**
 - Used machine learning techniques (i.e. neural networks, decision trees, and support vector machines) to outline an optimal betting strategy for the non-deterministic game of craps
- **(Spring 2006) Parallelization of the Bellman equation**
 - Parallelized the Bellman equation (used to solve Markov Decision Processes) using the MPI over several distributed processors resulting in significant speedup
- **(Spring 2006) Semantic Web Service Challenge II**
 - Aided in developing process mediator using planning and interaction protocols
 - Project page: <http://lsdis.cs.uga.edu/projects/meteor-s/index.php?page=4>
- **(Fall 2005) Robotics Mini-DARPA project**
 - Participated in developing a small scale autonomous mobile robot in the spirit of the annual DARPA challenge and deployed the robot over a small obstacle course successfully
 - Picture - http://www.cs.uga.edu/~potter/robotics/robopics_files/fall05-9.JPG
- **(Fall 2004 – Fall 2005) XML data integration (Master’s thesis)**
 - Enhanced a methodology for querying multiple heterogeneous xml data sources by optimizing join operations

Teaching Experience

Lead Instructor

<i>CSCI1301, Introduction to Java Programming</i>	<i>University of Georgia, Athens, GA, 01/08-5/08</i>
<i>CSCI1301, Introduction to Java Programming</i>	<i>University of Georgia, Athens, GA, 08/07-12/07</i>
<i>CS220A, Introduction to C++ Programming</i>	<i>Greensboro College, Greensboro, NC, 01/03-06/03</i>

Teaching Assistant

<i>CSCI1100, Introduction to Computer Applications – Lab Instructor</i>	<i>University of Georgia, Athens, GA, 08/08 – 06/09</i>
<i>CSCI4550/6550, Introduction to Artificial Intelligence</i>	<i>University of Georgia, Athens, GA, 08/08 – 12/08</i>
<i>CSCI1301, Introduction to Java Programming – Lab Instructor</i>	<i>University of Georgia, Athens, GA, 05/08-7/08</i>
<i>CS471/671, Principles of Database Systems – Lab Instructor/Grader</i>	<i>University of North Carolina-Greensboro, Greensboro, NC, 08/03-06/05</i>

Work Experience

Research Assistant, University of Georgia, August 2005 – August 2007

- Provided research assistance to Dr. Prashant Doshi in the area of adaptive Web service compositions (see publication list)

Help Desk Analyst, University of North Carolina Greensboro, October 2002 – May 2005

- Provided campus-wide Level 1 support to the University of North Carolina Greensboro. Duties included: web and network support, applications support, and general computing questions

Mechanical Project Manager, Dynamic Systems, June 2000 – June 2001

- Managed multi-million dollar mechanical contracting projects for semi-conductor, pharmaceutical, and fiber-optic industries
- Projects included the installation of High-purity piping, HVAC piping and sheet metal systems for clean room applications for Corning in Concord, NC, Intel in Chandler, AZ, and IBM in East Fishkill, NY
- Duties included: maintaining labor and material budgets, service estimation, and designing work-arounds

Skills

Programming Languages: Java, C/C++, Basic/Visual Basic, FORTRAN, LISP, Latex

OS: Windows, UNIX, Linux

Web: HTML/CSS, JavaScript, PHP, XML, XQuery, SOAP, WSDL, UDDI, REST, RDF, OWL/OWL-S, BPEL, Apache Axis/Axis2, WS-Agreement

Artificial Intelligence: Classical Planning, Decision-Theoretic Planning, Utility Theory, Information Theory/Value of Information, Machine Learning Concepts (e.g. Neural Networks)

Database: SQL, MySQL, MS SQL Server, Basic working knowledge of administration

References

Prashant Doshi, Professor

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