

# Laura Zavala

## Curriculum Vitae

University of Maryland Baltimore County  
Department of Computer Science  
1000 Hilltop Circle, Baltimore MD, 21250

Office: (410)455-8775 | Mobile: (803)447-6298  
<http://www.cs.umbc.edu/~rzavala>  
[zavala.usc@gmail.com](mailto:zavala.usc@gmail.com)

## Areas of Expertise

Semantic Web, ontologies, ontology matching, Web services, information retrieval, knowledge bases and knowledge engineering.

## Education

**PhD in Computer Science and Engineering**, University of South Carolina, December 2008

Dissertation: "A Multiagent-Based Synergistic Approach to Software Fault Tolerance" (advisor: Michael Huhns)

**MSc. in Artificial Intelligence**, *Summa Cum Laude*, University of Veracruz - LANIA, August 2001

Dissertation: "An Augmented Transition Networks-Based Model for Representing Agent Actions and Interactions" (advisor: Christian Lemaitre)

**B.S. in Computer Science**, *Summa Cum Laude*, University of Veracruz, August 1998

## Research and Teaching Experience

### Research Associate

2010, *University of Maryland Baltimore County, Department of Computer Science, USA*

Research on semantic Web and context-aware computing at the Intelligent Systems and Semantic Web Lab ([ebiquity Lab](#), [Platys Project](#)), and online reputation systems at the Multi-agent Planning and Learning Lab ([MAPLE Lab](#)).

### Research Assistant / Web Services Developer

2004 - 2005, *Oak Ridge National Laboratory / University of South Carolina, USA*

"*DARPA Virtual Soldier Project*": developed APIs, synchronous and asynchronous Web services, Web service clients, and anatomical and physiological ontologies to connect applications and components from different parties.

### Research Assistant

2003 - 2008, *Computer Science and Engineering Department, University of South Carolina, USA*

Participated in different research projects involving logical and probabilistic (Bayesian) reasoning for knowledge discovery, multiagent systems and team-oriented programming, design of ontologies and implementation of different ontology tools (parsers, converters, Web services access points, etc), ontology matching, Web services, and automatic extraction of causal relations from text.

### Lab Instructor (CSCE 145: Algorithmic Design I)

2006, *Computer Science and Engineering Department, University of South Carolina, USA*

### Instructor (Operating Systems and Systems Programming)

2001, *Statistics and Informatics Department, University of Veracruz, Mexico*

### **Research Fellow**

2000 - 2001, *National Laboratory of Advanced Computer Science, Mexico*

Project “*Multiagent Organizations*”: proposed an Augmented Transition Networks-based model for representing agents’ actions and interactions and developed a FIPA-OS-based multiagent systems development toolkit that allows the implementation of agents using the proposed model.

## **Industry Experience**

### **Research Engineer**

2009, *Execue, Inc., Stamford, CT, USA*

Developed semantic Web and ontologies solutions and applications.

Implemented a semantic Web application to access DBpedia knowledge base through natural language queries.

Implemented an SPARQL automatic query generator.

### **Software Engineer /Systems Analyst**

2001-2002, *The Institute of Ecology, Mexico*

Analyzed, designed, and implemented a Web-based travel expense system. Connected the system to the project budgeting and the accounting systems to allow for the necessary workflow.

### **Software Architect /Systems Analyst**

1998 - 2000, *Artificial Intelligence Department, University of Veracruz, Mexico*

Developed an application for skills assessment and personalized learning plan generation that undergraduate applicants to the university used as part of their preparation for the admission test.

Developed software for curricula and learning management, and automated assessment creation. Created training plans and imparted training workshops.

*The software was successfully commercialized (and is still being sold), having thousands of customers, and generating big revenues.*

## **Technical Proficiencies**

Programming: OOP, JAVA, Visual Basic, PHP, Python, and JUnit.

Databases: SQL, Oracle, MySQL, Access, and FoxPro.

Web services: SOAP, UDDI, WSDL, Apache Tomcat, and Apache Axis & Axis2.

Scripting and Markup: JSP, JavaScript, XML, XML Parsers (DOM & SAX), XPath, and XSLT.

Agents and Ontologies: RDF(S), OWL, Pellet, Jena, Protégé, Java WordNet Library (JWNL), NetLogo, Jade, FIPA-OS.

## **Relevant Publications**

### **Journal Papers**

• “*Research Directions for Service-Oriented Multiagent Systems*,” (with Huhns et al.), IEEE Internet Computing. Volume 9, Number 6, November/December 2005, pp. 65-70.

- “Automated Design of Combinational Logic Circuits using the Ant System,” (with C. Coello, B. Mendoza, and A. Aguirre), in Engineering Optimization, Vol. 34, No. 2, March 2002, pp. 109-127.

### **Book Chapters**

- “Multiagent-Based Fault Tolerance Management for Robustness,” (with Michael N. Huhns), in Robust Intelligent Systems, Alfons Schuster, editor, Springer London Ltd, 2008.
- “Reconciling Agent Ontologies for Web Service Applications,” (with Huang, J., Mendoza, B., and Huhns, M.), in Multiagent System Technologies: Third German Conference, MATES 2005. Torsten Eymann, et al., eds, Springer Verlag, Vol. LNAI 3550, Berlin, Germany, 2005, pp. 106-117.
- “On Building Robust Web Service-Based Applications,” (with Michael N. Huhns), in Extending Web Services Technologies: The Use of Multi-Agent Approaches, Lawrence Cavedon, et al., eds, Kluwer Academic Publishing, New York, Ch 14, pp. 293-310, 2004.

### **Conferences and Workshops**

- “Analysis of the Metrics of Coincident Failing Ensembles in Multiversion Systems” (with Michael N. Huhns), in Proceedings of the 19th IEEE International Symposium on Software Reliability Engineering (ISSRE): Workshop on Dependable Software Engineering, Redmond, WA, USA, November, 2008.
- “Behavioral Queries for Service Selection: An Agile Approach to SOC” (with Benito Mendoza, and Michael N. Huhns), in Proceedings of the IEEE International Conference on Web Services (ICWS), Salt Lake City, UT, USA, July 2007.
- “A Schema-based Approach Combined with Inter-Ontology Reasoning to Construct Consensus Ontologies” (with Huang, J., Mendoza, B., and Huhns, M.), in Proceedings of the AAAI Workshop on Contexts and Ontologies: Theory, Practice and Applications, AAAI Press, pp. 80-87, July 2005.
- “Sharing Ontology Schema Information for Web Service Integration” (with Huang, J., Mendoza, B., and Huhns, M.), in Proceedings of the Fifth International Conference on Computer and Information Technology (CIT), Shanghai, China, September, 2005.
- “A Web-Service Based Computational Environment for Biomedical Computing” (with L. Pouchard, R. Ward, M. Huhns, and K. Iyer), in Proc. 13th Annual Medicine Meets Virtual Reality Conference, Jan 2005.
- “A Middleware-based Computing Architecture for Virtual Medicine” (with L. Pouchard, R. Ward, M. Huhns, and K. Iyer), in Proc. 13th Annual Medicine Meets Virtual Reality Conference, Jan 2005.

## **Other Professional Activities**

**Panel Reviewer for NSF**, The Division of Computing and Communication Foundations (CCF), 2010.

**Technical Papers Reviewer** International Journal of Cooperative Information Systems • Springer-Link Journal of Service Oriented Computing and Applications • SpringerLink Journal of Autonomous Agents and Multi-Agent System • IEEE Internet Computing.

**Program Committee Member** The Third International Conference on Agents and Artificial Intelligence (ICAART 2011) • The Third International Conference on Advances in Semantic Processing (SEMAPRO 2009) • The Eighth and the Sixth International Joint Conferences on Autonomous Agents and Multi-Agent Systems (AAMAS 2007 & 2009) • The Seventh International Conference on Ontologies, DataBases, and Applications of Semantics (ODBASE 2008) • The Ninth and the Eight Pacific Rim International Workshops on Multi-Agents (PRIMA 2005 & 2006) • The Seventh International Workshop on Agent-Oriented Software Engineering (AOSE 2006) • The Second International Workshop on Programming Multiagent Systems Languages and tools (PROMAS 2004).