

Srividya Kona Bansal

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EDUCATION

Ph.D. in Computer Science, **The University of Texas at Dallas**, December 2007 (GPA: 4.0)

- Dissertation: Semantics-based Web Service Discovery and Composition (Advisor: Dr. Gopal Gupta)
- Area of Study: Service-Oriented Computing, Constraint Logic Programming, Software Engineering

M.S. in Computer Science, **Texas Tech University**, May 2002 (GPA: 4.0)

- Thesis: Real-time Markov Localization for Mobile Robots (Advisor: Dr. Larry Pyeatt)
- Area of Study: Artificial Intelligence, Machine Learning, and Robotics

B.Tech. in Computer Science and Engineering, **National Institute of Technology (REC)**, Warangal, India, May 1999 (GPA: 3.9)

- Thesis: Character Recognition task using Artificial Neural Networks (Advisor: Dr. T Ramesh)
- Area of Study: Artificial Intelligence and Neural Networks

RESEARCH AREAS

- **Software Engineering:** Service-Oriented Software Engineering, Domain-specific Languages, Agent-based programming
- **Service-Oriented Computing:** Web services, Semantic Web, Service-Oriented Architecture, Semantic Web Services, Service-Level Agreements, Ontologies
- **Programming Languages:** Object-Oriented Programming, Logic and Constraint Programming
- **Internet Computing:** Web 2.0, Automated Reasoning, Web technologies
- **Others Interests:** Automatic Workflow generation in Bioinformatics, Database Management

ACADEMIC EXPERIENCE

Assistant Professor **Aug 2010 to present**
Dept. of Engineering, **Arizona State University Polytechnic Campus**, Mesa, AZ 85212

Visiting Assistant Professor **Aug 2008 to July 2010**
Dept. of Computer Science, **Georgetown University**, Washington, DC

Postdoctoral fellow (Advisor: Dr. Brian Blake) **Jan 2008 to Aug 2008**
Dept. of Computer Science, **Georgetown University**, Washington, DC

Research Assistant (Advisor: Dr. Gopal Gupta) **Aug 2005 to Dec 2007**
Dept. of Computer Science, **The University of Texas at Dallas**

Teaching Assistant **Aug 2000 to Aug 2001**
Dept. of Computer Science, **Texas Tech University**, TX

Research Projects

1. *Universal Service-Semantics Description Language (USDL)*

- **Description:** Designed and developed a language called **Universal Service-Semantics Description Language** (USDL) to provide formal semantic description of Web services. This work won the **best paper award** at *IEEE European Conference on Web Services (ECOWS)* 2005.
 - **Area of Study:** Description of Web Services, Semantic Web, Logic Programming
2. ***Web service Discovery and Composition***
 - **Description:** Designed and developed a **Web service Discovery and Composition** Engine based on semantic description of Web services which was used at **WS-Challenge 2006** in San Francisco, California and **WS-Challenge 2007** in Tokyo, Japan.
 - **Area of Study:** Semantic Web Services, Software Engineering, Constraint Programming
 3. ***Workflow Generation for Phylogenetic inferencing***
 - **Description:** Applied the Web service composition engine for automatic workflow generation of Phylogenetic Inference tasks in Bioinformatics.
 - **Area of Study:** Bioinformatics, Web Service Composition, Workflows
 4. ***Service-Level Agreements for Web Service Composition***
 - **Description:** This project involves extending the Web service composition engine to use non-functional attributes (described as Service-Level Agreements) in order to obtain better and reliable composition solutions.
 - **Area of Study:** Semantic Web services, Software Engineering, Web Service Composition
 5. ***SOA for CAARS***
 - **Description:** Involved in Service-Oriented Computing research and applying Service-Oriented Architecture to an Intelligent Instruction system that uses context-aware Augmented Reality.
 - **Area of Study:** Service Oriented Architecture, Database Management
 6. ***Type Verification of .NET CIL Code***
 - **Description:** Implementation of a type checker for .NET CIL Code to check for memory safety and control flow integrity of .NET binaries. This work will be extended for verification of Mobile Type System for .NET which is used to implement In-lined reference monitors to enforce history-based security policies.
 - **Area of Study:** Language-based Security, Programming Languages
 7. ***Composite Services in UDDI Registries***
 - **Description:** This project involves extending UDDI registries with support for management of composite services.
 - **Area of Study:** Web Services, Composite Services, UDDI
 8. ***Identity Control and Privacy in Web 2.0***
 - **Description:** This project involves designing approaches and techniques that control what others can find out about individuals in Web 2.0.
 - **Area of Study:** Web 2.0, Privacy, Agent-based Programming

GRANTS

1. **Co-PI:** SGER - *“The 2009 Web Services Challenge”*, National Science Foundation (NSF) IIS, \$34,279, for conducting Web Services Challenge in July 2009 at Vienna, Austria.
2. **Co-PI:** SGER - *“The 2008 Web Services Challenge”*, National Science Foundation (NSF) IIS, \$22,461, for conducting Web Services Challenge in July 2008 at Crystal City, Washington, DC.
3. Participated in the preparation of the proposal titled *“Semantics-based Efficient Web Service Discovery and Composition”*, PI: Dr Gopal Gupta, submitted to National Science Foundation (NSF) IIS.
4. Participated in the preparation of the proposal titled *“Automatic Generation of USDL Annotations”*, PI: Dr Gopal Gupta, submitted to SAP Labs, Palo Alto.

TEACHING EXPERIENCE

Visiting Assistant Professor & Postdoc, Georgetown University

Jan 2008 - current

- *Graduate Courses:*

1. **Service-Oriented Architecture**

Semester(evaluation): Spring 2008 (4.33/5.0), Fall 2009 (4.67/5.0)

Weblink: <http://cs.georgetown.edu/~kona/courses/soa>

2. **Internet Computing**

Semester(evaluation): Fall 2008 (4.2/5.0)

Weblink: <http://cs.georgetown.edu/~kona/courses/ic>

- *Undergraduate Courses:*

1. **Software Engineering**

Semester(evaluation): Fall 2009 (4.22/5.0)

Weblink: <http://cs.georgetown.edu/~kona/courses/se>

2. **Web Applications and Technologies**

Semester(evaluation): Spring 2009 (4.21/5.0)

Course page: <http://cs.georgetown.edu/~kona/courses/wapps>

3. **Advanced Programming**

Semester(evaluation): Fall 2008 (4.5/5.0)

Weblink: (<http://cs.georgetown.edu/~kona/courses/ap>)

4. **Computer Science II**

Semester and Teaching Evaluations: Summer 2009 (n/a)

Weblink: <http://cs.georgetown.edu/~kona/courses/cs2>

5. **Introduction to Visual Java**

Semester(evaluation): Fall 2009 (4.34/5.0)

Weblink: <http://cs.georgetown.edu/~kona/courses/vj>

Guest Lecturer, The University of Texas at Dallas

November 2007

Presented guest lectures on Introduction to Logic Programming for the course CS 6371 - Advanced Programming Languages in Fall 2007. (<http://www.utdallas.edu/~hamlen/cs6371fa07.html>)

Teaching Assistant, Texas Tech University

Aug 2000 - May 2001

Involved in grading projects for the course “CS3372 - Advanced Digital Projects using VHDL” and helping students with the course.

STUDENT ADVISING

1. David Cafaro (Graduate Student) - Guiding his independent study titled “Identity Control and Privacy in Web 2.0” in Fall 2009.
2. Sandra Beatriz Leiva-Diban (Graduate Student) - Guided her independent study titled “Implementation of an IVR application using VoiceXML” in Spring 2008.

INDUSTRY EXPERIENCE

- **Software Engineer, Tyler Technologies, Plano, TX**

August 2001 to June 2005

Developed server-side components using .NET technologies, C#, Visual Basic, SQL Server and applications using HTML/DHTML, ASP, VBScript, JavaScript and Active Reports. Worked on the following projects:

- Orion: Real-estate Appraisal product. Worked on development of this product right from its inception. Designed the database schema, wrote a number of server-side components, and client-side applications.
 - Public Access Web site: Worked on development of the public access web site for the real-estate appraisal product Orion. Designed and implemented the entire web site.
 - Odyssey: Case-manager product for the justice department. Worked on development of client-side applications, enhancements to some server-side components, and implemented reports.
- **Software Engineer, SAP Labs, Waldorf, Germany** **May 2000 to July 2000**
Designed the B-Doc Modeler to be used with Customer Relationship Management products.
 - **Software Engineer, SAP Labs India** **June 1999 to July 2000**
Worked with Middleware team on Customer Relationship Management products using Visual Basic, VC++, ABAP and SAP-R/3.

HONORS/AWARDS

- **Postdoctoral Fellowship** at Dept. of Computer Science, Georgetown University, Washington, DC (January 2008 - August 2008)
- Won the **Best Paper Award** at *European Conf. On Web Services (ECOWS)* 2005
- **Won 2nd place** at *Student Research Showcase*, Jonsson School Forum, UT Dallas.
- Awarded the **Texas Public Education Grant** at the Univ. of Texas at Dallas
- Awarded **Merit Scholarship** by the Dept. of Computer Science, Texas Tech Univ.
- Recipient **Student Travel Grant** to attend:
 - EEE/CEC 2007 (WS-Challenge)
 - EEE/CEC 2006 (WS-Challenge)
 - Federated Logic Conference (FLoC) 2006
- Awarded **Merit Scholarship & Gold medal** in 1st year of B.Tech, NIT Warangal

PROFESSIONAL ACTIVITIES

Program Committee and Session Chair

- **Co-Chair** of the Web Services Challenge (WSC), July 2009 at Vienna, Austria.
- **Organizing Committee** member of the Web Services Challenge (WSC), July 2008 at Crystal City, Washington, DC, USA.
- **Program Committee** member of International Workshop on Agent-based Computing for Enterprise Collaboration (ACEC) at WETICE 2008.
- **Session Chair** at Intl. Conf. on Web Services (ICWS), July 2007 at USA.

Contest Participation

- **Jonsson School Forum** at The University of Texas at Dallas in April, 2006 and won the **2nd place** at Students Showcase of Research Projects
- Represented Texas Tech University at **ACM South Central USA Programming Contest** at LSU in November, 2000
- **Prolog Contest** at FLoC, Seattle, USA in August, 2006
- **WS-Challenge** at San Francisco, USA in June, 2006
- **WS-Challenge** at Tokyo, Japan in July, 2007

University Activities

- **Services University** - Represented Georgetown University in the Fall School of Services Computing, 2008 at Beijing, China.
- **Instructor** at the Computer Science Summer Camp for High School Students at Georgetown University, Washington, DC in July 2008 and 2009.

Reviewing Activities

- **IEEE Internet Computing**
- **IEEE Transactions on Services Computing (TSC)**
- Computer Languages, Systems And Structures (**COMLAN**) Journal
- **IEEE Software** Special Issue of on Rapid Development of Applications using Dynamically Typed Languages 2007
- Intl. Conf. on Logic Programming (**ICLP**) 2008
- Intl. Workshop on Agent-based Computing for Enterprise Collaboration (**ACEC**) at WETICE 2008
- Practical Aspects of Declarative Languages (**PADL**) 2008
- Practical Aspects of Declarative Languages (**PADL**) 2007
- Intl. Workshop on Automated Specification & Verification of Web System, 2006
- Intl. Workshop on Applications of Logic Programming in the Semantic Web and Semantic Web Services (**ALPSWS**) 2006
- Intl. Conf. on Distributed Computing and Internet Technology (**ICDCIT**) 2006

Professional Affiliation

- Member of **Institute of Electrical and Electronics Engineers (IEEE)**
- Member of **IEEE Computer Society**
- Member of **Association for Computing Machinery (ACM)**
- **Toastmasters International:**
 - Member of Synergy Park Toastmasters club July 2005 - December 2007
 - Served as **President** of the club July 2007 - December 2007
 - Served as **Vice-president, Education** June 2006 - May 2007
 - Served as **Vice-president, Public Relations** Aug. 2005 - May 2006
 - Achieved **Competent Communicator(CC)** & **Competent Leader(CL)** levels

INVITED TALKS

1. “Semantics-based Web Service Discovery and Composition”, Virginia Tech - Northern Virginia Center, December 2008.
2. “Web Service Discovery and Composition”, Georgetown University, September 2007.
3. “Universal Service-Semantics Description Language (USDL)”, Jonsson School Forum at The University of Texas at Dallas, April 2006.

PUBLICATIONS

Journal Articles

1. **Srividya Kona**, Ajay Bansal, Luke Simon, Ajay Mallya, Gopal Gupta, and T.D. Hite. “**USDL: A Service-Semantics Description Language for Automatic Service Discovery and Composition**”, in Intl. Journal of Web Services Research (IJWSR), Volume 6, No. 1, January-March 2009, pp. 20-48.
2. Ajay Bansal, **Srividya Kona**, M. Brian Blake, David Cummings. “**Workflow Composition of Service Level Agreements and Web Services**”, Journal of Systems and Software, (under 2nd round of review).
3. **Srividya Kona**, Ajay Bansal, Gopal Gupta. “**Semantics-based Web Service Discovery and Composition**”, (in preparation, IEEE Transactions on Services Computing (TSC)).

Conference Papers

1. **Srividya Kona**, Ajay Bansal, M. Brian Blake, Steffen Bleul, Thomas Weise. “**WSC-2009: A Quality of Service-Oriented Web Services Challenge**” in IEEE Intl. Conference on Commerce and Enterprise Computing (**CEC**), 2009.
2. M. Brian Blake, Michael F. Nowlan, Ajay Bansal, **Srividya Kona**. “**Annotating UDDI Registries to Support the Management of Composite Services**”, in Proc. of 24th Annual ACM Symposium on Applied Computing (**SAC**), 2009.
3. **Srividya Kona**, Ajay Bansal, Gopal Gupta, M. Brian Blake. “**Generalized Semantics-based Service Composition**”, in Proc. of IEEE International Conference on Web Services (**ICWS**), September 2008 (**16% Acceptance Rate**).
4. **Srividya Kona**, Ajay Bansal, Gopal Gupta, M. Brian Blake. “**Towards a General Framework for Web Service Composition**”, in Proc. of IEEE International Conference on Services Computing (**SCC**), July 2008.
5. Ajay Bansal, M. Brian Blake, **Srividya Kona**, Micheal Jaeger, et al. “**WSC-08: The Web Services Challenge**”, in Proc. of IEEE Intl. Conference on E-Technology, E-Commerce and E-Services (**CEC/EEE**), 2008.
6. Ajay Bansal, **Srividya Kona**, M. Brian Blake, Gopal Gupta. “**An Agent-based Approach for Composition of Semantic Web Services**”, in Proc. of 17th IEEE International Workshops on Enabling Technologies: Infrastructures for Collaborative Enterprises (**WETICE**), June 2008.
7. **Srividya Kona**, Ajay Bansal, Gopal Gupta. “**Automatic Composition of Semantic Web Services**”, in Proc. of IEEE Intl. Conference on Web Services (**ICWS**), July 2007 (**18% Acceptance Rate**).
8. **Srividya Kona**, Ajay Bansal, Gopal Gupta, and T.D. Hite. “**Semantics-based Web Service Composition engine**” (Short Paper), in Proc. of IEEE Conf. on E-Commerce Technology and Conf. on Enterprise Computing, E-Commerce and E-Service (**CEC/EEE**), July 2007.
9. **Srividya Kona**, Ajay Bansal, Gopal Gupta, and T.D. Hite. “**Efficient Web Service Discovery and Composition using Constraint Logic Programming**”, in Proc. of Intl. Workshop on Applied Logic Programming Semantic Web and Services (**ALPSWS**) at Federated Logic Conference (FLoC), Aug. 2006.
10. **Srividya Kona**, Ajay Bansal, Gopal Gupta, and T.D. Hite. “**Web Service Discovery and Composition using USDL**” (Short Paper), in Proc. of IEEE Conf. on E-Commerce Technology & Conf. on Enterprise Computing, E-Commerce & E-Service (**CEC/EEE**), June 2006.
11. Ajay Bansal, **Srividya Kona**, Luke Simon, Ajay Mallya, Gopal Gupta, and T.D. Hite. “**Universal Service-Semantics Description Language**”, in Proc. of IEEE European Conference On Web Services (**ECOWS**), Nov. 2005 (**Received Best Paper Award**).
12. Luke Simon, Ajay Bansal, Ajay Mallya, **Srividya Kona**, Gopal Gupta, and T.D.Hite. “**Towards a Universal Service Description Language**”, in Proc. of Next Generation Web Services Practices (**NWeSP**), Sep. 2005.

Technical Reports

1. **Srividya Kona**. “**Semantics-based Web Service Discovery and Composition**”, Ph.D. dissertation, The University of Texas at Dallas, Dec. 2007.
2. **Srividya Kona**, Ajay Bansal, Gopal Gupta, and T.D. Hite. “**USDL: Formal definitions in OWL**”, Internal Report UTDCS-23-07.

3. **Srividya Kona**, Larry Pyeatt. “**Real-time Markov Localization for Mobile Robots using Pre-Computation of Sensor Model**”, MS Thesis, Texas Tech Univ. May 2002.
4. **Srividya Kona**, T Ramesh. “**Character Recognition task using Artificial Neural Networks**”, B.Tech Project, NIT, Warangal, India, May 1999.

PAST/PRESENT COLLABORATORS

- Dr. Gopal Gupta (The University of Texas at Dallas)
- Dr. Brian Blake (University of Notre Dame)
- Steffen Bluel (University of Kassel, Germany)
- Thomas Weise (University of Kassel, Germany)
- Dr. Ajay Bansal (Georgetown University)

SKILL SET

- **Languages:** C, C++, Java, Visual C++, C#, Prolog, Lisp, ML, Visual Basic, XHTML, VBScript, JavaScript, CSS, PHP, Java Server Programming.
- **Others:** Active Reports, UML, RationalRose, ASP, .NET Architecture, Visual Studio for .NET, SQL Server, Oracle, MySQL, AJAX, Servlets, JSP, JSF, Web service development using Axis2, AXIOM, JAX-WS, and C#, Apache Tomcat, Netbeans and Eclipse IDE, XML, XML Schema, XSL, XQuery, WSDL, SOAP, UDDI, RDF, RDF-S, OWL, VoiceXML.

REFERENCES

1. **Dr. Gopal Gupta** **Email:** gupta@utdallas.edu
Telephone: 972-883-4107
Professor and Department Head
Dept. of Computer Science, The University of Texas at Dallas
2601 N Floyd Road, Richardson, TX 75080, USA
2. **Dr. M. Brian Blake** **Email:** M.Brian.Blake@nd.edu
Telephone: 574-631-3906
Professor and Associate Dean
Dept. of Computer Science and Engineering, University of Notre Dame
325C Cushing Hall Notre Dame, IN 46556, USA
3. **Dr. Farokh Bastani** **Email:** bastani@utdallas.edu
Telephone: 972-883-2299
Professor of Computer Science
Dept. of Computer Science, The University of Texas at Dallas
2601 N Floyd Road, Richardson, TX 75080, USA
4. **Dr. Kevin Hamlen** **Email:** hamlen@utdallas.edu
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Assistant Professor
Dept. of Computer Science, The University of Texas at Dallas
2601 N Floyd Road, Richardson, TX 75080, USA
5. **Dr. Ovidiu Daescu** **Email:** daescu@utdallas.edu
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Associate Professor
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PERSONAL

- Indian Citizen
- Currently on H1-B Visa
- Married