

Research Interests

I have a strong background in standard (SOAP based) Web services ,their related specifications and technologies. Recently my research interests have shifted towards lightweight services, service compositions (a.k.a *mashups*) and cloud computing. I have been particularly interested in the Service aspect of computing clouds.

Education

Wright State University (Relocated in September 2007) <i>Ph.D. Computer Science and Engineering;</i>	Dayton, OH September 2007
University of Georgia <i>Ph.D. Computer Science and Engineering;</i>	Athens, GA August 2006 - September 2007
University of Moratuwa <i>B.Sc. Computer Science and Engineering;</i>	Sri Lanka October 1998 - August 2003

Publications

Peer Reviewed Conferences and Workshops

- [1] **Ajith Ranabahu**,Michael Maximilien, A Best Practice Model for Cloud Middleware Systems , Proceedings of the *Best Practices in Cloud Computing: Designing for the Cloud* workshop in ACM SIGPLAN International Conference on Object-Oriented Programming, Systems, Languages, and Applications (OOPSLA),2009, Orlando FL, USA. *pp 41-51*
- [2] Michael Maximilien, **Ajith Ranabahu**,Roy Engehausen and Laura Anderson, Towards Cloud-Agnostic Middlewares , Proceedings of the 25th ACM SIGPLAN International Conference on Object-Oriented Programming, Systems, Languages, and Applications (OOPSLA) companion ,2009, Orlando FL, USA. *pp: 619-626*
- [3] Meenakshi Nagarajan, Karthik Gomadam, Amit P. Sheth, **Ajith Ranabahu**, Raghava Mutharaju and Ashutosh Jadhav, Spatio-Temporal-Thematic Analysis of Citizen Sensor Data: Challenges and Experiences, Proceedings of the tenth International Conference on Web Information Systems Engineering(WISE),2009, Poznan, Poland . *pp: 539-553*
- [4] Karthik Gomadam, **Ajith Ranabahu**, Meenakshi Nagarajan, Kunal Verma and Amit P. Sheth, A Faceted Classification Based Approach to Search and Rank Web APIs, Proceedings of the Sixth International Conference on Web Services (ICWS), 2008, Beijing, China. *pp: 177-184 (Acceptance Rate: 16%)*.
- [5] Karthik Gomadam, **Ajith Ranabahu**, Lakshmish Ramaswamy, Kunal Verma and Amit P. Sheth, Mediatability: Estimating the Degree of Human Involvement in XML Schema Mediation, Proceedings of the Second International Conference on Semantic Computing(ICSC), 2008, Santa Clara, CA.*pp: 394-401*.
- [6] E. M. Maximilien, **A. Ranabahu**, and S. Tai. Swashup: Situational Web Applications Mashups. In Companion Proceedings of ACM SIGPLAN International Conference on Object-Oriented Programming, Systems, Languages, and Applications (OOPSLA), 2007, Montreal, Quebec, Canada, *pp: 797-798*.

- [7] Karthik Gomadam, **Ajith Ranabahu**, Lakshmesh Ramaswamy, Kunal Verma and Amit P. Sheth, A Semantic Framework for Identifying Events in a Service Oriented Architecture, Proceedings of the Fifth International Conference on Web Services(ICWS), 2007, Salt Lake City, UT. *pp: 545-552 (Acceptance Rate: 16%)*.
- [8] Zixin Wu, Karthik Gomadam, **Ajith Ranabahu**, Amit P. Sheth, and John A. Miller, Automatic Composition of Semantic Web Services using Process Mediation, Proceedings of the 9th International Conference on Enterprise Information Systems (ICEIS), 2007, Funchal, Portugal. *pp: 453-461*.
- [9] Srinath Perera, Chathura Herath, Jaliya Ekanayake, Eran Chinthaka, **Ajith Ranabahu**, Deepal Jayasinghe, Sanjiva Weerawarana, Glen Daniels: Axis2, Middleware for Next Generation Web Services. Fourth IEEE International Conference on Web Services (ICWS) , 2006 Chicago IL, *pp: 833-840*.

Journal Publications

- [10] E. Michael Maximilien, **Ajith Ranabahu**, Karthik Gomadam, An On line Platform for Web APIs and Service Mashups, IEEE Internet Computing, 2008, 12(5), *pp. 32-43*.
- [11] Karthik Gomadam, **Ajith Ranabahu**, Zixin Wu, Amit P. Sheth and John A. Miller, A Declarative Programming Approach to Process Composition, Springer Series on Semantic Web and Beyond : Semantic Web Services Challenge,2008,*pp. 101-118*.

Invited Papers and Book Chapters

- [12] Amit P. Sheth, Karthik Gomadam, **Ajith Ranabahu**: Semantics enhanced Services: METEOR-S, SAWSDL and SA-REST, IEEE Data Engineering Bulletin, 2008, 31(3). *pp: 8-12*.
- [13] E. M. Maximilien and **A. Ranabahu**. The Programmable Web: Agile, Social, and Grass root Computing, In Proceedings of 1st IEEE International Conference on Semantic Computing (ICSC) special session on The World of Semantics beyond the Semantic Web, 2007 Irvine, CA. *pages 477-481*.

Demonstrations

- [14] Michael Maximilien and **Ajith Ranabahu**, IBM Altocumulus: A Cross-Cloud Middleware and Platform, in the 25th ACM SIGPLAN International Conference on Object-Oriented Programming, Systems, Languages, and Applications (OOPSLA),2009, Orlando FL, USA

Patents

- [15] Michael Maximilien, **Ajith Ranabahu** and Stefan Tai, Social Engineering of Networked Applications and Application Programming Interfaces, Status: Application submitted.
- [16] Michael Maximilien, **Ajith Ranabahu** and Stefan Tai, Language and Constructs For Creating Networked Applications and Applications Programming Interfaces, Status: Application submitted.

Research Experience

Research Assistant
kno.e.sis center

Services Research Lab
Sep 2007-Present

- Research focus on lightweight Web services, Mashups and Cloud computing.
- Published in 4 peer-reviewed conferences and Journals including one paper in IEEE Internet Computing and one paper in ICWS.

Research Assistant

LSDIS Lab, University of Georgia

Aug 2006 - May 2007

- Research focus on semantic Web services description, Event detection in SOA.
- Published in 2 peer-reviewed conferences, including one paper in ICEIS and one paper in ICWS.
- Contributed to open source reference implementation for the SAWSDL W3C standard (SAWSDL4J).

Professional Experience

Summer Research Intern

IBM Almaden Research Lab, San Jose, CA

Services Research Group

Apr 2009 - Jul 2009

- Successfully completed the IBM Altocumulus platform, A middleware system to support Cloud interoperability
- Published in two peer-reviewed conference papers including one paper in the OOPSLA cloud workshop .

Summer Research Intern

IBM Almaden Research Lab, San Jose, CA

Services Research Group

May 2007 - Sep 2007

- Successfully completed the IBM Sharable Code ¹ and IBM Web highlights ² projects. Both featured in IBM Alphaworks, IBM's portal for emerging technologies.
- Published in 1 peer-reviewed conference and 1 invited paper including one short paper in OOPSLA.

Senior Software Engineer

WSO2, Inc. Colombo, Sri Lanka

August 2005 - August 2006

- Architected and further developed Apache Axis2 - The leading open source SOAP processing framework. Primary architect for the code generation, data binding and tooling modules.
- Led the development of the Axis2 based WSO2 Web Services Application Server (WSAS).

Consultant

Lanka Software Foundation. Colombo, Sri Lanka

August 2004 - August 2005

- Architected and initiated development of Apache Axis2 - The leading open source SOAP processing framework.

Software Engineer/ Project Manager

Eurocenter DDC (pvt) Ltd. Colombo, Sri Lanka

August 2003 - August 2004

- Architected and developed a Web service based supplement for a Customer Relationship Management (CRM) provider.

¹<http://services.alphaworks.ibm.com/isc/>

²<http://services.alphaworks.ibm.com/WebHighlights/>

Professional Activities

[1] Presentations, Talks, and Tutorials

- (a) **IBM Altocumulus: A Cross-Cloud Middleware and Platform** - Demonstration at OOPSLA 2009 - Orlando FL.
- (b) **Service Level Agreements in Cloud Computing** - Talk at OOPSLA 2009 - Orlando FL.
- (c) **A Best Practice Model for Cloud Middleware Systems** - Talk at OOPSLA 2009 - Orlando FL.
- (d) **The Programmable Web: Agile, Social, and Grass root Computing** - Talk at ICSC 2007- Irvine,CA.
- (e) **A Semantic Framework for Identifying Events in a Service Oriented Architecture** - Talk at ICWS 2007- Salt Lake City, UT
- (f) **Introduction to SAWSDL4J** - Talk at ICWS 2007 - Salt Lake City, UT.
- (g) **Accelerating Web Services Development with Axis2** - Tutorial at Apachecon US 2005 - San Diego, CA.
- (h) **Introducing Axis2**- Talk at Apachecon Europe 2005 - Stuttgart, Germany.

[2] Program Committees

- (a) Third International Workshop on Web APIs and Services Mashups (Mashups'09) at OOPSLA 2009.
- (b) International Workshop on The Next Steps After SAWSDL (Beyond SAWSDL 2009) at OTM 2009.
- (c) 3rd International Workshop on Web Service Composition and Adaptation (WSCA-2009) at ICWS 2009.
- (d) IEEE International Conference in Service Operations,Logistics and Informatics (SOLI 2009).
- (e) Second International Workshop on Web APIs and Services Mashups (Mashups'08) at ICSOC 2008.
- (f) Workshop on Mashup Personal Learning Environments (MUPPLE08) at 3rd European Conference on Technology Enhanced Learning (EC-TEL08) .
- (g) Advances in Semantics for Web services 2008 (semantics4ws 2008) at BPM 2008 (Publicity Chair).
- (h) 1st International Workshop on Web Service Composition and Adaptation (WSCA-2007) at ICWS 2007.
- (i) First International Workshop on Web APIs and Services Mashups (Mashups'07) Workshop at ICSOC 2007.

[3] Working Groups

- (a) Member of W3C SWS Testbed Incubator Group.
- (b) Member of W3C XML Schema Patterns for Databinding Working Group.

[4] Journal Review Service

- (a) IEEE Internet Computing Journal.
- (b) International Journal on Semantic Web and Information Services (IJSWIS).

[5] Collaborators

- Services Research Group - IBM Almaden Research Center.

Community Contributions

[1] Voluntary assistant to a group of doctors during the Tsunami Crisis in Sri Lanka -2004.

Extra Curricular Activities

- **Member of the Apache Software Foundation**

- Apache Software Foundation (ASF) is a non-profit organization that supports the development of software through a community process and distributes them with both senses of freedom (free as in free beer and free as in freedom). The highest honor ASF can attribute to one of its contributors is to offer the membership and there is only a handful of members among the many contributors.

Skills

- **Programming Languages:**

- Java, Ruby, javascript, Visual Basic, C, PHP, C++, ActionScript.

- **Markup and other Languages:**

- HTML, CSS, XML, XSL.
- SQL.

- **Web Services:**

- All major Web services standards including WSDL, SOAP, WS-Policy and other WS-* specifications.

- **Apache Tools:**

- Apache Axis2 (*one of the primary architects/developers*), Apache Tomcat, All Apache Web services tools, Apache Web Server.

- **Other tools and Systems:**

- Eclipse and IntelliJIDEA (*User and Plugin developer*), major database engines including MySQL, Oracle and MSSQL.

- **Operating Systems:**

- Linux(Debian,Ubuntu), Windows XP.

References

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IBM Almaden Research Center,

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