JINGHAI RAO

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EDUCATION

- *August, 2000 – December, 2004,* PhD, Department of Computer and Information Science, Norwegian University of Science and Technology. Title of dissertation: "Semantic Web Service Composition via Logic-based Program Synthesis".
- *September, 1997 – July, 2000,* Master of Computer Science, Information School, Renmin University of China. Title of thesis: "Agent-based Microsimulation of Economy from a Complexity Perspective"
- *September, 1993 – July, 1997,* Bachelor of Information Management, Information School, Renmin University of China.

PROFESSIONAL EMPLOYMENT

- *January, 2005 – Present,* Project Scientist, Mobile Commerce Lab, School of Computer Science, Carnegie Mellon University.
- *August, 2005 – June, 2006,* Consultant. Working for Smart Service Discovery and Composition Project with SAP AG, Germany.
- *August, 2000 – December, 2004,* Research Assistant, Norwegian University of Science and Technology.
- *March – July, 1999,* Exchange student, Norwegian University of Science and Technology.
- *August, 1997 – July, 2000,* Research Assistant, Information School, Renmin University of China.

TEACHING EXPERIENCE AND DEVELOPMENT

- *April,* 2007 – *present*, Working with SAP on the project "Selective Obfuscation of Enterprise Data". Design and Develop a policy based system that selectively discloses the ERP data account to the requester's privilege. The system is developed using Java.
- *March, 2006 – present*, Research in privacy aware location based service. Lead the design and development of a People Finder application using Java, C#, PHP and Jess. This application is based on a Service Oriented Architecture containing heterogeneous platforms like Windows Mobile, Symbian OS and Apache web server.
- *January, 2005 – present*, Research in a semantic web service framework for decentralized trust management. Developing a decentralized policy enforcement system using Java and Jess.

- *August, 2005 – June, 2006,* Developing a mixed initiative web service discovery and composition system for SAP using Java and Jess.
- *September, 2001 – December, 2004,* Research in semantic web services discovery and composition framework using logic-based program synthesis. Developing the framework using Java and Prolog.
- *September, 2002 - July, 2003,* Developing Agora, a multi-agent platform used in a Virtual Enterprise scenario. The system is implemented by Java and Prolog.
- *September – December, 2002,* Teaching Assistant for Logic course
- *January – May, 2002,* Teaching Assistant for Programming Language course
- *September – December, 2001,* Teaching Assistant for Distribute Artificial Intelligence and Intelligent Agent course
- *August, 1999 – July, 2000,* Research in the area of theory and application of Complexity Adaptive System, developing SFEE, a simulation system for micro-economy using Objective C and Swarm.
- *March – August, 1999,* Developing a group collaboration application called IGLOO using Java
- *1998,* Developing SIM-EDI/EC system, an educational system in EDI and EC. It aims to simulating the business activities of enterprises in iron industry. The system is implemented by VB.
- *August, 1998,* Successfully complete the Oracle Education course, including PL/SQL programming and Oracle Database Administrator. A certificate is issued by Oracle, China.
- *March – December, 1997,* Developing enterprise MIS for Huanyuan Real-property Co, the system is based on Solaris for SUN Sparc + Oracle 7 Server, the user interface is implemented by ORACLE/DEVELOPER 2000.
- *May, 1997,* Successfully complete the Sun Education course, including UNIX and Solaris System Administration. A certificate is issued by Huasun, China.

PUBLICATIONS

1. A. Sardinha, J. Rao and N. Sadeh, "**Enforcing Context-Sensitive Policies in Collaborative Business Environments".** Submitted to the First International Workshop on Security Technologies for Next Generation Collaborative Business Applications (SECOBAP'07)

2. J. Cornwell, Jinghai Rao, et. al, "**User-Controllable Security and Privacy for Pervasive Computing",** Submitted to the 8th IEEE Workshop on Mobile Computing Systems and Applications (HotMobile 2007)

3. S.A. Peterson, J. Rao and M. Matskin**, "Virtual Enterprise Formation supported by Agents and Web Services"** book chapter in *Agent and Web Service Technologies in Virtual*

Enterprises, IDEA Group

4. J. Rao, D. Dimitrov, P. Hofmann and N. Sadeh "**A Mixed Initiative Semantic Web Framework for Process Composition** ". In *the 5ᵗʰ International Semantic Web Conference*, Athens, USA, November, 2006.

5. J. Rao, D. Dimitrov, P. Hofmann and N. Sadeh "**A Mixed Initiative Approach to Semantic Web Service Discovery and Composition: SAP's Guided Procedures Framework**". In *the 2006 IEEE International Conference on Web Services (ICWS 2006)*, Chicago, USA, September 18 - 22, 2006.

6. J. Rao and N. Sadeh "**A Semantic Web Framework for Interleaving Policy Reasoning and External Service Discovery**". In *Proceedings of International Conference on Rules and Rule Markup Languages for the Semantic Web*, Galway, Ireland, 10-12 November 2005.

7. N. Sadeh and J. Rao. "**Interleaving Semantic Web Reasoning and Service Discovery to Enforce Context-Sensitive Security and Privacy Policies**". In *Proceedings of the First International Symposium on Agents and the Semantic Web*. Arlington, Virginia, USA. 4-6 November, 2005.

8. Jinghai Rao and Norman Sadeh. "**Interleaving Semantic Web Reasoning and Service Discovery to Enforce Context-Sensitive Security and Privacy Policies** ", School of Computer Science, Carnegie Mellon University, Technical Report CMU-ISRI-05-113, July 2005.

9. J. Rao. "**Semantic Web Service Composition via Logic-based Program Synthesis**". *PhD Thesis*. Department of Computer and Information Science, Norwegian University of Science and Technology, December 10, 2004.

10. J. Rao, P. Kungas and M. Matskin, "**Composition of Semantic Web Services using Linear Logic Theorem Proving".** *Information Systems Journal - Special Issue on the Semantic Web and Web Services"*, Volume 31, Issues 4-5, page 229-296, June-July 2006.

11. P. Kungas and J. Rao. "**Symbolic Agent Negotiation for Semantic Web Service Exploitation**". *In Proceedings of the Fifth International Conference on Web-Age Information Management, WAIM'2004*, Dalian, China, July 15-17, 2004, LNCS 3129, Springer-Verlag.

12. J. Rao and X. Su. "**A Survey of Automated Web Service Composition Methods***", In Proceedings of the First International Workshop on Semantic Web Services and Web Process Composition (SWSWPC 2004)*, San Diego, California, USA, July 6ᵗʰ, 2004.

13. J. Rao, P. Kungas and M. Matskin. "**Logic-based Web Service Composition: from Service Description to Process**

Model", *In Proceedings of the 2004 IEEE International Conference on Web Services, ICWS'2004*, San Diego, California, USA, July 6-9, 2004, IEEE Computer Society Press. This paper receives the best paper runners up award at the conference.

14. J. Rao and X. Su. "**Toward the Composition of Semantic Web Services**". *The Second International Workshop on Grid and Cooperative Computing*, Shanghai China, December, 2003, LNCS 3033, Springer-Verlag.

15. X. Su, M. Matskin and J. Rao. "**Implementing Explanation Ontology for Agent System**". *The 2003 IEEE/WIC International Conference on Web Intelligence*, Halifax, Canada, October, 2003, IEEE Computer Society Press.

16. S. A. Petersen, J. Rao and M. Matskin. "**Virtual Enterprise Formation with Agents - an Approach to Implementation**". *The 2003 IEEE/WIC International Conference on Intelligent Agent Technology*, Halifax, Canada, October, 2003, IEEE Computer Society Press.

17. J. Rao , P. Kungas and M. Matskin. "**Application of Linear Logic to Web Service Composition**". *The First International Conference on Web Services*, Las Vegas, USA, June, 2003, CSREA Press.

18. J. Rao and S. A. Petersen. "**Implementing Virtual Enterprises Using AGORA Multi-agent System**". *In Proceedings of CAiSE 2003 Forum*, Velden, Austria, June 2003.

19. S. A. Petersen, J. Rao, and A. Tveit. "**Challenges in Agent-based Support for Virtual Enterprises**". *In Proceedings of the 1st International Workshop on Challenges in Open Agent Systems (corresponding with AAMAS 2002)*, Bologna, Italy, July 2002.

20. M. Matskin, J. Rao. "**Value-Added Web Services Composition using Automatic Program Synthesis**". *In Proceedings of "Web Services, e-Business, and the Semantic Web" workshop*, Toronto, Ontario, Canada, 28 May, 2002, LNCS 2512, Springer-Verlag.

21. Y. Chen, X. Su, J. Rao and H. Xiong. "**Agent-based Microsimulation of Economy from a Complexity Perspective**". *In Proceedings of IFIP World Computer Congress*, Beijing, China, 2000.

22. M. Fang, X. Su, T. Li and J. Rao. "**A collaborative educational IS based on WWW**". *In Proceedings of IFIP WG 8.1 Working Conference on Information Systems in the WWW Environment,* Beijing, China, 1998, Chapman & Hall.

23. M. Fang, J. Rao, X. Su and T. Li. "**A Web-based collaborative learning system**", *In Proceedings of*

International Conference on Computer in Education, Beijing, China, 1998.

PRESENTATIONS

1. **"A Mixed Initiative Semantic Web Framework for Process Composition "**. Presented in *the 5th International Semantic Web Conference*, Athens, USA, November, 2006.
2. **"A Mixed Initiative Framework for Semantic Web Service Discovery and Composition"**, Presented in *the 2006 AAAI workshop on AI-Driven Technologies for Service-Oriented Computing,* Boston, USA, July 2006.
3. **"Interleaving Semantic Web Reasoning and Service Discovery to Enforce Context-Sensitive Security and Privacy Policies"**. Presented in *the First International Symposium on Agents and the Semantic Web*. Arlington, Virginia, USA. November, 2005.
4. **"A Survey of Automated Web Service Composition Methods***"*, Presented in *the First International Workshop on Semantic Web Services and Web Process Composition (SWSWPC 2004)*, San Diego, California, USA, July 6th, 2004.
5. **"Logic-based Web Service Composition: from Service Description to Process Model***"*, Presented in *the 2004 IEEE International Conference on Web Services, ICWS'2004*, San Diego, California, USA, July 6-9, 2004.
6. **"Toward the Composition of Semantic Web Services"**. Presented in *the Second International Workshop on Grid and Cooperative Computing*, Shanghai China, December, 2003.
7. **"Application of Linear Logic to Web Service Composition"**. Presented in *the First International Conference on Web Services*, Las Vegas, USA, June, 2003.
8. **"Implementing Virtual Enterprises Using AGORA Multi-agent System"**. Presented in *the CAiSE 2003 Forum*, Velden, Austria, June 2003.
9. **"Challenges in Agent-based Support for Virtual Enterprises"**. Presented in *the 1st International Workshop on Challenges in Open Agent Systems (corresponding with AAMAS 2002)*, Bologna, Italy, July 2002.
10. **"Value-Added Web Services Composition using Automatic Program Synthesis"**. Presented in *"Web Services, e-Business, and the Semantic Web" workshop*, Toronto, Ontario, Canada, 28 May, 2002.

PROGRAMMING SKILL

Using frequently in current research: Java, Jess, Perl, PHP, Prolog, WSDL, BPEL4WS, SOAP, DAML+OIL, OWL, XSLT

Used to develop applications in current 10 years: Objective C, SQL, Developer 2000, Delphi, Visual Basic, Lisp

LANGUAGES

Chinese: Mother tongue

English: Fluent.

Norwegian: Working knowledge.

AWARDS RECEIVED

- The best paper runners up award for the paper titled "Logic-based Web Services Composition: from Service Description to Process Model", presented at the 2004 IEEE International Conference on Web Services (ICWS 2004), July 6-9, San Diego, USA.
- Wu YuZhang Scholarship 1999 (The top students award at Renmin University of China).
- Guang Hua Scholarship for Graduate Students 1998.
- National Mathematical Contest in Modeling for Undergraduates, second prize, 1996, sponsored by Chinese Industrial and Applied Mathematics Society

PROFESSIONAL SERVICES

- Program Committee member of First International Workshop on Security Technologies for Next Generation Collaborative Business Applications (SECOBAP'07)
- Program Committee member of Workshop on Enterprise Computing and Web Services (ECWS'06)
- Program Committee member of Workshop on Service Oriented Techniques (SOT'06)
- Program Committee member of the Eighth International Conference on Electronic Commerce, Multiagent Systems and Electronic Markets Track (ICEC'06)
- Program Committee member of The 3rd European Semantic Web Conference (ESWC'06)
- Program Committee member of The Second International Workshop on Semantic Web Technology for Ubiquitous and Mobile Applications (SWUMA'06)
- Reviewer of the Information System Journal
- Reviewer of the International Journal of Web Services Research.
- Reviewer of Information Processing Letters.
- Reviewer of The 5th International Semantic Web Conference (ISWC'06)

- Reviewer of The 4th International Semantic Web Conference (ISWC'05)
- Reviewer of The 19th International Joint Conference on Artificial Intelligence (IJCAI'05)