

## EDUCATION

- Ph.D., Computer Science** Aug. 1998 – Dec. 2004  
University of Maryland, Baltimore County (UMBC) GPA 3.9  
Admitted to Ph.D. candidacy in Spring 2002  
Thesis: *A Policy-Based Approach to Governing Autonomous Behavior in Distributed Environments*  
Advisor : Dr. Tim Finin
- M.S., Computer Science** Aug. 1998 – Jan. 2002  
University of Maryland, Baltimore County (UMBC) GPA 3.9  
Project: *A Tool for Calculating the Result of Quantum Circuits*  
Advisor : Dr. Samuel Lomonaco
- M.S., Computer Science** Jun. 1994 – Jun. 1996  
Pune University, India  
Project: *A WYSIWYG HTML Editor and Browser in C++*
- B.S., Computer Science** Jun. 1991 – Jun. 1994  
Fergusson College, Pune, India  
Pune University

## RESEARCH INTERESTS

Policy Specification Languages, Policy Management and Engineering, Security, Privacy, Trust Management, Knowledge Representation, Semantic Web, Web Services, Distributed Systems, Pervasive/Mobile Computing, Autonomic Computing, Grid Computing, Artificial/Computational Intelligence, Multi-Agent Systems, and Agent Communication Languages.

## COMPUTER-RELATED SKILLS

Programming Languages: C, C++, Perl, Java, and Prolog.  
Knowledge Representation and Mark-Up Languages: XML, RDF, DAML+OIL, and OWL.

## RESEARCH AND WORK EXPERIENCE

- Postdoctoral Associate** Dec. 2004 – present  
MIT Computer Science and Artificial Intelligence Laboratory  
Supervisor : Tim Berners-Lee  
Subject Area: Policy management for the web
- Summer Internship** Apr. 2003 – Sep. 2003  
Global Infotek, Reston, Virginia  
Project Manager: Dr. Jim Just  
Subject Area: Policy based team formation, collaboration, and information sharing
- Summer Internship** Jun. 2002 – Sep. 2002  
Hewlett-Packard Laboratories Research Intern, Palo Alto, CA  
Manager: Dr. Bernard Burg, Agents for Mobility Research  
Subject Area: Design and implementation of a policy specification language as part of the Me-Centric Computing Project
- Graduate Research Assistant** May 1999 – present  
Advisor: Dr. Timothy Finin, CSEE, UMBC  
Subject Area: Policy Management, Privacy, Security, Trust Management, Semantic Web, Mobile Computing, Supply Chain Management Systems as part of IBM EECOMS, DAML ITTalks, Centaurus, Vigil, and Rei projects

- Graduate Teaching Assistant** Aug. 1998 – May 1999  
CSEE, UMBC  
Course: CMSC 202 – An Introduction to Computer Science II (2 semesters)
- Senior Software Engineer** Jan. 1997 – Jul. 1998  
Interactive Technologies, Dubai, United Arab Emirates  
Subject Area: Project Leader, Systems Analyst, and Developer. Developed and maintained web sites using Perl, VB, and ASP
- Research Intern** Jan. 1996 – Aug. 1996  
National Informatics Center, Pune, India  
Subject Area: Developed a HTML Editor in C++
- Intern** Feb. 1994 – Aug. 1994  
Indian Rayon, Birla Group, Pune, India  
Subject Area: Developed a report generation package in FoxPro
- Software Developer** Jan. 1991 – Jan. 1994  
Modeka Chemicals Pvt. Ltd., Pune, India  
Subject Area: Developed and supported a materials management application in DbaseIII+

## PROFESSIONAL ACTIVITIES

- Chair
  - The Semantic Web and Policy Workshop (SWPW), ISWC 2005, Ireland
  - Policy Management for the Web Workshop (PM4W), WWW 2005, Japan
- Program Committee
  - Agents and the Semantic Web, 2005 AAAI Fall Symposium Series, VA
  - Ambient Intelligence - Agents for Ubiquitous Environments, Workshop at AAMAS 2005, Utrecht, The Netherlands
  - Mobiquitous 2005, CA
  - IEEE Policy Workshop 2005, Stockholm, Sweden
  - Workshop on Security and Trust at the International Semantic Web Conference, November 2004, Hiroshima, Japan
  - Workshop on Principles and Practice of Semantic Web Reasoning at the Nineteenth International Conference on Logic Programming 2003, Mumbai, India
- Reviewer of several journals, conferences, and workshops including ACM TOIT and IJCAI 2005
- Organizing Committee, Workshop on Pervasive Security, Privacy and Trust at the International Conference on Mobile and Ubiquitous Systems: Networking and Services, August 2004, Boston
- Contributed to the OWL-S Specifications by providing an appendix of possible security annotations for semantic services, Dec 2003

## RESEARCH APPLICATIONS

- Rei Policy Language and Engine  
Agent collaboration environment in GENOA II program: The Rei language is being used in a multiagent system for policies regarding team formation, information sharing, and team collaboration.  
Global Infotek  
Project Manager: Dr. James Just
- Rei Policy Language and Engine  
Task Computing (A pervasive environment that uses semantic web technologies): The Rei language is being used to describe public and private policies of clients and services to provide policy based access control for entities in pervasive environments.  
Fujitsu Labs, College Park  
Project Manager: Dr. Ryusuke Masuoka

## REFEREED PUBLICATIONS

*JOURNALS*

1. H. Chen, T. Finin, A. Joshi, F. Perich, D. Chakraborty, and **L. Kagal**, "Intelligent Agents Meet the Semantic Web in Smart Spaces", IEEE Internet Computing, November 2004.
2. J. Undercoffer, F. Perich, A. Cedilnik, **L. Kagal**, and A. Joshi, "A Secure Infrastructure for Service Discovery and Access in Pervasive Computing", ACM Monet: Special Issue on Security in Mobile Computing Environments, Volume 8, No 2, October 2003.
3. T. Finin, A. Joshi, **L. Kagal**, O. Ratsimor, S. Avancha, V. Korolev, H. Chen, F. Perich, and R. Cost, "Intelligent Agents for Mobile and Embedded Devices", International Journal of Cooperative Information Systems, December 2002.
4. **L. Kagal**, V. Korolev, S. Avancha, A. Joshi, T. Finin, and Y. Yesha, "Centaurus : An Infrastructure for Service Management in Ubiquitous Computing", ACM Wireless Networks Journal, November 2002.

*CONFERENCES*

5. P. Kolari, L. Ding, S. Ganjugunte, **L. Kagal**, A. Joshi, and T. Finin "Enhancing Web Privacy Protection through Declarative Policies", IEEE Workshop on Policy for Distributed Systems and Networks (POLICY 2005), June 2005.
6. A. Patwardhan, V. Korolev, **L. Kagal**, and A. Joshi, "Enforcing Policies in Pervasive Environments", International Conference on Mobile and Ubiquitous Systems: Networking and Services, August 2004.
7. F. Perich, J. Undercoffer, **L. Kagal**, A. Joshi, T. Finin, and Y. Yesha, "In Reputation We Believe: Query Processing in Mobile Ad-Hoc Networks", International Conference on Mobile and Ubiquitous Systems: Networking and Services, August 2004.
8. M. Cornwell, J. E. Just, **L. Kagal**, and T. Finin, "A Policy Based Collaboration Infrastructure for P2P Networking", Twelfth International Conference on Telecommunication Systems, Modeling and Analysis, July 2004.
9. **L. Kagal**, T. Finin, and A. Joshi, "A Policy Based Approach to Security to the Semantic Web", 2<sup>nd</sup> International Semantic Web Conference (ISWC), October 2003.
10. G. Denker, **L. Kagal**, T. Finin, M. Paolucci, and K. Sycara, "Security for DAML Web Services: Annotation and Matchmaking", 2<sup>nd</sup> International Semantic Web Conference (ISWC), October 2003.
11. **L. Kagal**, V. Korolev, S. Avancha, A. Joshi, and T. Finin, "An Approach to Dynamic Service Management in Pervasive Computing", Grace Hopper Celebration of Women in Computing, October 2002.
12. **L. Kagal**, J. Undercoffer, F. Perich, A. Joshi, and T. Finin, "A Security Architecture Based on Trust Management for Pervasive Computing Systems", Grace Hopper Celebration of Women in Computing, October 2002.
13. R. Scott Cost, T. Finin, A. Joshi, Y. Peng, C. Nicholas, H. Chen, **L. Kagal**, F. Perich, Y. Zou, and S. Tolia, "ITTALKS: A Case Study in the Semantic Web and DAML", International Semantic Web Working Symposium (SWWS 2001), July 2001.

*WORKSHOPS*

14. **L. Kagal**, T. Finin, and A. Joshi, "Declarative Policies for Describing Web Service Capabilities and Constraints", W3C Workshop on Constraints and Capabilities for Web Services, October 2004.
15. **L. Kagal** and T. Finin, "Modeling Conversation Policies using Permissions and Obligations", AAMAS 2004 Workshop on Agent Communication (AC2004), July 2004.
16. **L. Kagal**, T. Finin, M. Paolucci, Naveen Srinivasan, Grit Denker, T. Finin, and K. Sycara, "Towards Authorization, Confidentiality, and Privacy for Semantic Web Services", AAAI 2004 Spring Symposium on Semantic Web Services, March 2004.
17. **L. Kagal**, T. Finin, and A. Joshi, "A Policy Language for A Pervasive Computing Environment", IEEE 4th International Workshop on Policies for Distributed Systems and Networks, Lake Como, Italy, June 2003.

18. A. Choudhri, **L. Kagal**, A. Joshi, T. Finin, and Y. Yesha, "PatientService : Electronic Patient Record Redaction and Delivery in Pervasive Environments", Fifth International Workshop on Enterprise Networking and Computing in Healthcare Industry (Healthcom 2003), Santa Monica, June 2003.
19. **L. Kagal**, "An Agent Approach to Security for Pervasive Computing Environments", The Eighteenth National Conference on Artificial Intelligence (AAAI 02), Doctoral Consortium, July 2002.
20. **L. Kagal**, T. Finin, and A. Joshi, "Developing Secure Agent Systems Using Delegation Based Trust Management", Security of Mobile Multi-Agent Systems Workshop, Autonomous Agents and Multi-agent Systems (AAMAS 2002), July 2002.
21. **L. Kagal**, F. Perich, H. Chen, S. Tolia, Y. Zou, T. Finin, A. Joshi, Y. Peng, R. Cost, and C. Nicholas, "Agents Making Sense of the Semantic Web", First GSFC/JPL Workshop on Radical Agent Concepts (WRAC), January 2002.
22. S. Avancha, D. Chakraborty, H. Chen, **L. Kagal**, F. Perich, T. Finin, and A. Joshi, "Issues in Data Management for Pervasive Environments", NSF Workshop on Context-Aware Mobile Database Management, January 2002.
23. F. Perich, R. Cost, T. Finin, A. Joshi, Y. Peng, C. Nicholas, H. Chen, **L. Kagal**, Y. Zou, and S. Tolia, "ITTALKS: An Application of Agents in the Semantic Web", Engineering Societies in the Agents World (ESAW 2001), December 2001.
24. T. Finin, A. Joshi, **L. Kagal**, O. Ratsimor, S. Avancha, V. Korolev, H. Chen, F. Perich, and R. Cost, "Information Agents for Mobile and Embedded Devices", Proceedings of the Fifth International Workshop Cooperative Information Agents, September 2001.
25. **L. Kagal**, T. Finin, and Y. Peng, "A Delegation Based Model for Distributed Trust", Workshop on Autonomy, Delegation, and Control: Interacting with Autonomous Agents, International Joint Conferences on Artificial Intelligence, August 2001.
26. **L. Kagal**, T. Finin, R. Scott Cost, and Y. Peng, "A Framework for Distributed Trust Management", Second Workshop on Norms and Institutions in MAS, Autonomous Agents, May 2001.
27. **L. Kagal**, V. Korolev, H. Chen, A. Joshi, and T. Finin, "Centaurus: A Framework for Intelligent Services in a Mobile Environment", International Workshop of Smart Appliances and Wearable Computing at the 21st International Conference of Distributed Computing Systems, April 2001.

*INVITED/MAGAZINES*

28. **L. Kagal** and T. Finin, "Modeling Communicative Behavior Using Permissions and Obligations", Developments in Agent Communication, Eds. Frank Dignum, Rogier van Eijk, Marc-Philippe Huget, Springer-verlag LNCS, January 2005
29. **L. Kagal**, M. Paolucci, Naveen Srinivasan, Grit Denker, T. Finin, and K. Sycara, "Authorization, and Privacy for Semantic Web Services", IEEE Intelligent Systems (Special Issue on Semantic Web Services), 2004.
30. **L. Kagal**, J. Parker, H. Chen, A. Joshi, and T. Finin, "Security, Privacy and Trust in Mobile Computing Environments", Handbook of Mobile Computing, CRC Press, Editors Imad Mahgoub and Mohammad Ilyas, December 2003.
31. R. Cost, T. Finin, A. Joshi, Y. Peng, C. Nicholas, I. Soboroff, H. Chen, **L. Kagal**, F. Perich, Y. Zou, and S. Tolia, "ITTalks: A Case Study in the Semantic Web and DAML+OIL", IEEE Intelligent Systems Special Issue, January 2002.
32. **L. Kagal**, T. Finin, and A. Joshi, "Trust-Based Security in Pervasive Computing Environments", IEEE Computer, December 2001.

## NON-REFEREED PUBLICATIONS

1. **L. Kagal**, "Rei: A Policy Language for the Me-Centric Project", HP Labs, September 2002.
2. **L. Kagal**, J. Undercoffer, F. Perich, A. Joshi, T. Finin, and Ye. Yesha, "Vigil: Providing Trust for Enhanced Security in Pervasive Systems", CSEE UMBC, 2002.

3. A. Cedilnik, **L. Kagal**, F. Perich, J. Undercoffer, and A. Joshi, "A Secure Infrastructure for Service Discovery and Access in Pervasive Computing", Technical Report, CSEE UMBC, August 2001.

## AWARDS

1. Scholarship for American Association for Artificial Intelligence (AAAI), Edmonton, Canada, 2002
2. Travel award for Grace Hopper Celebration of Women in Computing, Vancouver, Canada, 2002
3. CRA Award for CRA Academic Careers Workshop, Washington D.C., USA, 2002
4. NSF travel award for 2<sup>nd</sup> European Agent Systems Summer School, Saarbrucken, Germany, 2000

## REFERENCES

Available on request