

# CURRICULUM VITAE

**Rajeev R. Raje**

Professor

Department of Computer and Information Science

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## **Name**

Rajeev R. Raje

## **Education**

PhD in Computer Engineering, Syracuse University, Syracuse, NY, 1994

MS in Computer Engineering, Syracuse University, Syracuse, NY, 1994

BE in Electrical Engineering, University of Bombay, Bombay, India, 1984

## **Professional Appointments**

- July 2009 – Present, Professor, Department of Computer and Information Science, IUPUI, Indianapolis, IN
- September 2007 – Present, Associate Chair, Department of Computer and Information Science, Indiana University Purdue University Indianapolis (IUPUI), Indianapolis, IN
- September 2006 – August 2007, Interim Associate Chair, Department of Computer and Information Science, IUPUI, Indianapolis, IN
- Spring 2004 – Spring 2006, Adjunct Associate Professor (Courtesy Appointment), Department of Computer and Information Sciences, University of Alabama at Birmingham (UAB), Birmingham, AL
- August 2002 – June 2009, Associate Professor, Department of Computer and Information Science, IUPUI, Indianapolis, IN
- August 1996 – July 2002, Assistant Professor, Department of Computer and Information Science, IUPUI, Indianapolis, IN
- August 1994 – July 1996, Visiting Assistant Professor, Department of Computer and Information Science, IUPUI, Indianapolis, IN
- September 1988 – July 1994, Graduate Research Assistant, NY CASE Center & Department of Electrical and Computer Engineering, Syracuse University, Syracuse, NY
- May 1988 – August 1988, Graduate Research Assistant, Department of Electrical Engineering, University of Rhode Island, Kingston, RI
- January 1988 – August 1988, Graduate Assistant, Administrative Computer Center, University of Rhode Island, Kingston, RI
- June 1984 – August 1987, Project Engineer, Controls and Automation Systems Engineering Division, Siemens Limited, Bombay, India

## **Research Interests**

- Distributed Computing and Programming, Software Engineering, Component-based Systems, Service-oriented Computing

## Honors and Awards

- IUPUI *Trustees Teaching Award*, 2010 and 2001
- *Favorite Faculty Award*, Computer Science Club, IUPUI, 2007-08
- Co-author, *Top-10 Downloaded Paper*, *ACM Digital Library*, 2006
- Co-author, *One of the Top Bioinformatics paper*, *BRIC Bioinformatic Online Newsletter*, 2005
- *Recognition Plaque*, 12<sup>th</sup> IEEE International Conference on High-performance Computing, 2005
- *Certificate of Appreciation*, Department of the Information Systems and Operations Management, Ball State University, 2005
- Nominated to *Who's Who Among America's Teachers*, 2004
- *Certificate of Appreciation*, ACM SAC, 2003
- Nominated for the *Forty Under 40 Program* of the Indianapolis Business Journal, 2003-04
- *Certificate of Appreciation*, School of Science, IUPUI, 2002
- The IUPUI *School of Science Teaching Award*, 2000
- *Commendation for Technical Excellence in Reviewing*, Recognized by IEEE Computer, 1998-99
- Selected as *Level-3, Level-2, and Level-1 Mentor* by the Graduating Students at IUPUI School of Science, 1996, 1997, 1998, 1999, 2000, 2001, 2002, 2004, 2005, 2006, 2007, 2008, 2009, 2010, and 2011
- The *Teaching Excellence Recognition Award (TERA)*, Department of Computer and Information Science and the School of Science at IUPUI, 1998-99 and 1996-97
- *Excellence in Teaching*, Recognized by the IUPUI Intercollegiate Athletics Department, 1998-99
- The *Professor of the Year 1996-97*, Computer Science Club and the Department of Computer and Information Science at IUPUI
- The *Overall Professor of the Year 1995-96*, Computer Science Club and the Department of Computer and Information Science, IUPUI
- *Graduate Research Assistantship*, Syracuse University, NY CASE Center and University of Rhode Island, 1988-94
- *J. N. Tata Scholarship*, J. N. Tata Endowment, 1986
- *Anandrao Ganapat Pandit Scholarship* for achieving the 1<sup>st</sup> Rank, University of Bombay, 1982-83
- *Shekhar N. Naik Silver Medal for Science*, Indian Education Society, 1978

## Grants

1. Grants-in-Aid (Teaching), Faculty Development Office at IUPUI, \$3,000, 1996-1997, (PI)
2. Biomedical Tele-Visualization, Indiana University High Performance Network Applications Program, \$20,000, 1999-2000, (Co-PI)
3. Intelligent Software System for Bimolecular Database Access and Analysis, Eli Lilly & Company, \$22,200, 1999-2000, (Co-PI)
4. Indiana University SUR Proposal: Tightly integrated distributed supercomputing - the Indiana TeraCloud, IBM Corporation, \$1 Million (hardware), 2000-2001, (Co-PI)
5. Indiana University SUR Proposal: Information Technology Applications for the Life Sciences, IBM Corporation, \$1.2 Million (hardware), 2001, (Co-PI)
6. A Distributed Information Filtering System for Digital Libraries, National Science Foundation, \$315,386, 1999-2003, (Co-PI)
7. An Active, Personalized, Adaptive, Multi-format Biological Information Delivery System, National Science Foundation, \$494,297, 2000-2004, (Co-PI)
8. Test-assessment and Minimization for the Microsoft Windows NT Operating System, Microsoft Corporation, \$93,742, 2000-2002, (PI)
9. A Framework for Seamless Interoperation of Heterogeneous Distributed Software Components, US Office of Naval Research, \$1,558,803, 2001-2005, (PI)
10. An Environment for Distributed Component-based Software Development, Indigo Foundation, \$26,400, 2005-2006, (PI)
11. Signature Center for Bio-Computing, IUPUI, \$285,000, 2007-2009, (Co-PI)
12. Developing Fast and Accurate Embarrassingly Parallel Solver for Multi-Scale Chemically Reacting Systems, IUPUI, \$1500, 2008-09, (Co-PI)
13. Developing a Fast and Accurate Parallel Solver for Multi-scale Biochemical Reacting Systems, IUPUI, \$2000, 2009-10, (Co-PI)
14. International Travel Grant, Purdue Research Foundation, \$1,000, 2011.
15. Modeling, Specifying, Discovering, and Integrating Trust into Distributed Real-time and Embedded (DRE) Systems, *S<sup>2</sup>ERC* and Air Force Research Lab, \$79,000, 2011-13 (PI).

## Publications

### Books

1. Yuanshun Dai, Yi Pan, Rajeev R. Raje (Eds.), *Advanced Parallel And Distributed Computing: Evaluation, Improvement And Practice*, Nova Science Publishers, Inc., ISBN: 1-60021-202-6, 2007.

## Refereed Book Chapters

2. Rajeev R. Raje, Zhiqing Liu, Sivakumar Chinnasamy, Ming Zhong, Wilfred Mascarenhas, Joseph Williams, “Distributed-Object Computing”, in *High-performance Cluster Computing*, Vol.2, Pages: 249-273, 1999.
3. Rajeev R. Raje, Snehasis Mukhopadhyay, Michael Boyles, Nila Patel, Artur Papiez, Javed Mostafa, “On Designing and Implementing a Collaborative System Using the Distributed-Object Model of Java-RMI”, in *Progress in Computer Research*, Vol. 1, Pages: 123-134, 2001.
4. Rajeev R. Raje, Anantharaman Kalyanraman, Nanditha Nayani, “Distributed-Object Computing Tools”, *Tools and Environments for Parallel and Distributed Computing*, pp: 79-147, 2004.
5. Andrew M. Olson, Rajeev R. Raje, Barrett R. Bryant, Mikhail Auguston, Carol Burt, “UniFrame – A Unified Framework for Developing Service-oriented, Component-based Distributed Software Systems”, in *Service- Oriented Software System Engineering: Challenges and Practices*, pp: 68-87, 2005.
6. Andrew M. Olson, Rajeev R. Raje, Barrett R. Bryant, Mikhail Auguston, Carol Burt, “UniFrame - Automating the Construction of Large-Scale Distributed Systems”, in *Advanced Parallel And Distributed Computing: Evaluation, Improvement And Practice*, pp: 197-212, 2007.
7. Rajeev R. Raje, Jayasree Gandhamaneni, Andrew M. Olson, Barrett R. Bryant, “MURDS: A Mobile-Agent-based Distributed Discovery System”, *Encyclopedia of Mobile Computing and Commerce – Volume 1*, pp: 436-441, 2007.
8. Mihran Tuceryan, Rajeev R. Raje, “Distributed Heterogeneous Tracking for Augmented Reality Using Component-based Software Technologies”, *Encyclopedia of Mobile Computing and Commerce – Volume 2*, pp: 207-212, 2007.
9. Rajeev R. Raje, Sivakumar Chinnasamy, Andrew Olson, William Higdon, “The Application and Enhancement of LePUS for Specifying Design Patterns” in *Design Patterns Formalization Techniques*, pp: 236-257, 2007.
10. Rajeev R. Raje, Alex Crespi, Omkar J.Tilak, Andrew Olson, “An Access Control Model for the Components in a Distributed System” in *Handbook of Research on Information Assurance and Security*, pp. 254-265, 2008.
11. Omkar Tilak, Rajeev R. Raje, Andrew Olson, “Assurance for Temporal Compatibility Using Contracts” in *Handbook of Research on Information Assurance and Security*, pp. 360-371, 2008.

## Theses

12. “High-resolution Video Display Interface”, BE Group Project, University of Bombay, 1984.
13. “MVSU – MVS Windows”, MS Project, Syracuse University, 1994.
14. “Object-Flow – A Symbiosis of Object-oriented Design and Data-flow Computing”, PhD Thesis, Syracuse University, 1994.

## Journal Articles

15. Rajeev R. Raje, "SIMATIC S5-110S DIMOS - Diagnostics and Monitoring System", *Siemens Circuit*, Vol. XXII, 1-2/87 (January/April 1987), pp: 34-37.
16. Rajeev R. Raje, Joseph Williams, Michael Boyles, "An Asynchronous Remote Method Invocation (ARMI) Mechanism for Java", *Concurrency: Practice and Experience*, Vol. 9(11), pp: 1207-1211 (1997).
17. Rajeev R. Raje, Snehasis Mukhopadhyay, Michael Boyles, Artur Papiez, Nila Patel, Mathew Palakal, Javed Mostafa, "A Bidding Mechanism for Web-Based Agents Involved in Information Classification", *World Wide Web*, 1(1998), pp: 155-165.
18. Rajeev Raje, Michael Boyles, Shiaofen Fang, "CEV: Collaborative Environment for Visualization Using Java-RMI", *Concurrency: Practice and Experience*, Vol. 10(11-13), pp: 1079-1085, (1998).
19. Rajeev R. Raje, Snehasis Mukhopadhyay, Michael Boyles, Nila Patel, Javed Mostafa, "On Designing and Implementing a Collaborative System Using the Distributed-Object Model of Java-RMI", *Parallel and Distributed Computing Practices*, Vol. 1, No. 4, December 1998, pp: 3-13.
20. Rajeev R. Raje, Sivakumar Chinnasamy, "Designing a Distributed-object Computing Environment for Global-scale Systems – Challenges and Issues", (Invited) *ACM SIGAPP Applied Computing Review*, Vol. 7, No.1, pp: 25-30, Spring 1999.
21. Rajeev R. Raje, "Experiences in building Distributed-object Systems", (Invited) *Journal of Alabama Academy of Sciences*, Vol. 71, No. 2, pp: 57, April 2000.
22. Rajeev R. Raje, Ming Zhong, Tongyu Wang, Joseph Williams, "A Case Study: A Distributed Concurrent System with AspectJ", *ACM SIGAPP Applied Computing Review*, Vol. 9, No. 2, pp: 17-23, Summer 2001.
23. Rajeev R. Raje, Barrett Bryant, Mikhail Auguston, Andrew Olson, Carol Burt, "A QoS-based Framework for Creating Distributed and Heterogeneous Software Components", *Concurrency and Computation: Practice and Experience*:2002, 14, pp: 1009-1034.
24. Rajeev R. Raje, Mingyong Qiao, Snehasis Mukhopadhyay, Shengquan Peng, Mathew Palakal, Javed Mostafa, "Homogeneous Agent-based Distributed Information Filtering ", *Cluster Computing*, Vol. 5 (2002), No. 4, pp: 377-388.
25. Mathew Palakal, Snehasis Mukhopadhyay, Javed Mostafa, Rajeev Raje, Mathias N'Cho, Santosh K. Mishra, "An Intelligent Biological Information Management System" , *Bioinformatics Journal*, Vol. 18, No. 10, 2002, pp: 1283-1288.
26. Snehasis Mukhopadhyay, Shengquan Peng, Rajeev R. Raje, Mathew Palakal, Javed Mostafa, "Large-scale Multi-agent Information Classification Using Dynamic Acquaintance Lists", *Journal of the American Society for Information Science and Technology*, Vol. 54, No. 10, pp: 966-975, 2003.
27. Mathew Palakal, Matthew Stephens, Snehasis Mukhopadhyay, Rajeev Raje and Simon Rhodes, "Identification of Biological Relationships from text documents using efficient computational

- Methods”, *Journal of Bioinformatics and Computational Biology (JBCB)*, Vol. 1, No. 2 (2003), pp: 1-34.
28. Rajeev R. Raje, Daocheng Zhu, Snehasis Mukhopadhyay, Liying Tang, Mathew Palakal, Javed Mostafa, “COBioSIFTER - A CORBA-based Distributed Multi Agent Biological Information Management System”, *Cluster Computing*, Vol. 7, 373-389, 2004.
  29. Chunmin Yang, Barrett R. Bryant, Carol Burt, Rajeev R. Raje, Andrew M. Olson, Mikhail Auguston, “Formal Methods for Quality of Service Analysis in Component-based Distributed Computing”, *Journal of Design & Process Science: Transactions of the Society for Design and Process Science*, 8,2, 137-149, 2004.
  30. Fei Cao, Barrett Bryant, Rajeev R. Raje, Andrew Olson, Mikhail Auguston, Wei Zhao, Carol Burt, “A Component Assembly Approach Based on Aspect-oriented Generative Domain Modeling”, *Electronic Notes in Theoretical Computer Science (ENTCS)*, Elsevier Science, Vol. 114, pp. 119-136, 2005.
  31. Snehasis Mukhopadhyay, Shengquan Peng, Rajeev R. Raje, Mathew Palakal, Javed Mostafa, “Distributed Multi-Agent Information Filtering – A Comparative Study”, *Journal of the American Society for Information Science and Technology*, Vol. 56, No. 8, pp. 834-842, 2005.
  32. Fei Cao, Barrett Bryant, Rajeev R. Raje, Andrew Olson, Mikhail Auguston, Wei Zhao, Carol Burt, “Dynamic Composition Patterns for Distributed Components”, *Journal of Universal Computer Science*, Vol. 11, No. 10, pp. 1645-1675, 2005.
  33. Changlin Sun, Rajeev R. Raje, Barrett Bryant, Omkar Tilak, “Compositional Reasoning of Performance in Component-Based Distributed Systems”, *Cluster Computing*, 11(4): 331-340, 2008.
  34. Ketaki A. Pradhan, Lahiru Gallege, Alfredo Moreno, Rajeev R. Raje, “MDE-URDS . A Mobile Device Enabled Service Discovery System”, *International Journal on Advanced Computing and Communication Networks*, Vol. 3, No. 1 (2011): 33-37, 2011.
  35. Anjali Kumari, Ketaki A. Pradhan, Lahiru S. Gallege, Rajeev R. Raje, “Synchronization Level Specification and Matching of Software Components”, *Software Engineering: An International Journal*, Vol. 2, No. 1, 7-19, March 2012.

### **Journal Articles Under Review**

36. Andrew Olson, Rajeev Raje, Barun Devaraju, Lahiru Gallege, “Learning Improves Service Discovery”, *IEEE Transactions on Service Computing*, 2011.

### **Refereed Conference/Workshop Proceedings**

37. Daniel J. Pease, Rajeev R. Raje, “SHARADA - A Sharable HierARchical Architectural Database”, *Proceedings of International Conference on Advances in Data Management, COMAD'91*, pp: 261-275, Bombay, India, 1991.
38. Rajeev R. Raje, Daniel J. Pease, Zaide Liu, Neng T. Lin, “A Graphical Tool for Shared Data Analysis of Parallel Fortran Programs”, *Proceedings of European Simulation Symposium, ESS'93*, pp: 417-422, Delft, The Netherlands, 1993.

39. Rajeev R. Raje, Daniel J. Pease, Songqing Cai, Zaide Liu, Neng T. Lin, "MVSX - A Batch Job Submission Environment under AIX", *Proceedings of USING'93*, pp: 149-161, Atlanta, Georgia, 1993.
40. Rajeev R. Raje, Daniel J. Pease, Sanjay D. Jejurikar, Neng T. Lin, "A Graphical Hierarchical Flowchart Generator for Parallel Fortran Programs", *Proceedings of Computer Graphics International '93*, pp: 523, Lausanne, Switzerland, 1993.
41. Rajeev R. Raje, Daniel J. Pease, Edward T. Guy III, "Class Partitions - A New Approach to Sequential Object Oriented Programs", *Proceedings of 29th Hawaii International Conference on System Sciences (Organized by IEEE), HICSS-29*, pp: 616-625, Hawaii, 1996.
42. Rajeev R. Raje, Daniel J. Pease, Edward T. Guy III, "OFFERS - A Tool for Hierarchical Implicit Analysis of Sequential Object Oriented Programs", *Proceedings of ACM's Symposium on Applied Computing, SAC'96*, pp: 437-441, Philadelphia, Pennsylvania, 1996.
43. Rajeev R. Raje, Ramana Pidaparti, C. Yokomoto, "An Active Collaborative Environment for Engineering Applications/Education Using Java-RMI", *Proceedings of ASEE Illinois/Indiana Sectional Conference*, pp: 204-209, Indianapolis, Indiana, 1997.
44. Chihfeng Lin, Daniel Pease, Rajeev R. Raje, "An Optimal-Joint-Coordinate Block Matching Algorithm for Motion-Compensated Coding" *Proceedings of IEEE 1997 Data Compression Conference DCC '97*, pp: 450, Snowbird, Utah, 1997.
45. Rajeev R. Raje, Snehasis Mukhopadhyay, Michael Boyles, Nila Patel, Javed Mostafa, "D-SIFTER: A Collaborative Information Classifier", *Proceedings of the International Conference on Information, Communication and Signal Processing (organized by IEEE Singapore Section), ICICS'97*, pp: 820-824, Singapore, 1997.
46. Rajeev R. Raje, Dennis Gannon, "A Timing Experiment with Java-RMI, CORBA and C-RPC", *Proceedings of the Fifth International Conference on Advanced Computing (organized in-cooperation with IEEE Computer Society), ADCOMP'97*, pp: 396-403, Chennai, India, 1997.
47. Rajeev R. Raje, Snehasis Mukhopadhyay, Michael Boyles, Artur Papiez, "An Economic Framework for a Web-based Collaborative Information Classifier", *Proceedings of the International Association of Science and Technology for Development, SE'97 Conference*, pp: 362-366, San Francisco, California, 1997.
48. Rajeev R. Raje, Snehasis Mukhopadhyay, Michael Boyles, Nila Patel, Javed Mostafa, "On Designing and Implementing a Collaborative System Using Java-RMI", *Proceedings of the Fifth International Conference on Advanced Computing (organized in-cooperation with IEEE Computer Society), ADCOMP'97*, pp: 404-411, Chennai, India, 1997.
49. Rajeev R. Raje, Joseph Williams, Michael Boyles, "An Asynchronous Remote Method Invocation (ARMI) Mechanism for Java", *On-line Proceedings of the ACM 1997 Workshop on Java for Science and Engineering Computation*, Las Vegas, Nevada, 1997.
50. Rajeev R. Raje, Antony Teal, Joseph Coulson, Sihai Yao, William Winn, Edward Guy III, "CCASEE - A Collaborative Computer Assisted Software Engineering Environment", *Proceedings of the International Association of Science and Technology for Development (IASTED), SE'97 Conference*, pp: 367-371, San Francisco, California, 1997.

51. Chihfeng Lin, Daniel Pease, Rajeev R. Raje, "An Efficient Block Matching Algorithm Based on a Valid Assumption of the Convex Distortion", *Proceedings of IEEE International Conference on Image Processing, ICIP'97*, pp: 172-174, Washington, DC, 1997.
52. Michael Boyles, Rajeev Raje, Shiaofen Fang, "CEV: Collaborative Environment for Visualization Using Java-RMI", *Proceedings of the ACM 1998 Workshop on Java for High-Performance Network Computing*, pp: 203-207, Palo Alto, California, 1998.
53. Sivakumar Chinnasamy, Rajeev R. Raje, Zhiqing Liu, "Specification of Design Patterns: An Analysis", *Proceedings of the Seventh International Conference on Advanced Computing and Communications (Co-sponsored by IEEE Computer Society), ADCOM'99*, pp: 300-304, Roorkee, India, 1999.
54. Rajeev R. Raje, Snehasis Mukhopadhyay, Mingyong Qiao, Mathew Palakal, Javed Mostafa, "Experiments with a Distributed Information Filtering System", *Proceedings of the 4<sup>th</sup> World Multiconference on Systems, Cybernetics and Informatics, SCI-2000*, pp: 591-596, Orlando, Florida, 2000.
55. Rajeev R. Raje, "UMM: Unified Meta-object Model" – *Proceedings of 4<sup>th</sup> IEEE International Conference on Algorithms and Architecture for Parallel Processing, ICA3PP'2000*, pp: 454-465, Hongkong, 2000.
56. Mathew Stephens, Mathew Palakal, Snehasis Mukhopadhyay, Rajeev R. Raje, Javed Mostafa, "Detecting Gene Relationships From Medline Abstracts", *Proceedings of Pacific Symposium on Biocomputing 2001*, pp: 483-495, Honolulu, Hawaii, 2001.
57. Shengquan Peng, Snehasis Mukhopadhyay, Rajeev R. Raje, Mathew Palakal, Javed Mostafa, "A Comparison of Single-Agent and Multi-Agent Information Classification" – *CD-ROM Proceedings of 10<sup>th</sup> IEEE Heterogeneous Computing Workshop, HCW 2001*, pp: 10 pages, San Francisco, California, 2001.
58. Rajeev R. Raje, Mingyong Qiao, Snehasis Mukhopadhyay, Mathew Palakal, Javed Mostafa, "SIFTER-II: A Heterogeneous Agent Society for Information Filtering" – *Proceedings of ACM Symposium on Applied Computing, SAC'01*, pp: 121-123, Las Vegas, Nevada, 2001.
59. Rajeev R. Raje, Sivakumar Chinnasamy, "eLePUS – A Language for Specification of Software Design Patterns" – *Proceedings of ACM Symposium on Applied Computing, SAC'01*, pp: 600-604, Las Vegas, Nevada, 2001.
60. Rajeev R. Raje, Barrett Bryant, Mikhail Auguston, Andrew Olson, Carol Burt, "A Unified Approach for the Integration of Distributed Heterogeneous Software Components" – *Proceedings of the 2001 Monterey Workshop (Sponsored by DARPA, ONR, ARO and AFOSR)*, pp: 109-119, Monterey, California, 2001.
61. Mathew Palakal, Snehasis Mukhopadhyay, Javed Mostafa, Rajeev Raje, Mathias N'Cho, Santosh K. Mishra, "An Intelligent Biological Information Management System", *Proceedings of ACM Symposium on Applied Computing, SAC'02*, pp: 159-163, Madrid, Spain, 2002.
62. Girish Brahmamath, Rajeev R. Raje, Andrew Olson, Barrett Bryant, Mikhail Auguston, Carol Burt, "A Quality of Service Catalog for Software Components", *Proceedings of the Southeastern Software Engineering Conference*, Huntsville, Alabama, 2002.

63. Carol Burt, Rajeev R. Raje, Mikhail Auguston, Barrett Bryant, Andrew Olson, "Quality of Service (QoS) Standards for Model Driven Architecture", *Proceedings of the Southeastern Software Engineering Conference*, Huntsville, Alabama, 2002.
64. Chunmin Yang, Barrett Bryant, Rajeev Raje, Mikhail Auguston, Andrew Olson, Carol Burt, "Formal Specification in Heterogeneous Distributed Software Integration", *Proceedings of the 40<sup>th</sup> Annual ACM Southeast Conference*, Raleigh, North Carolina, 2002.
65. Fei Cao, Barrett Bryant, Rajeev Raje, Mikhail Auguston, Andrew Olson, Carol Burt, "Specifying Heterogeneous Distributed Components", *Proceedings of the 40<sup>th</sup> Annual ACM Southeast Conference*, Raleigh, North Carolina, 2002.
66. Wei Zhao, Barrett Bryant, Rajeev Raje, Mikhail Auguston, Andrew Olson, Carol Burt, "A Unified Approach to Component Assembly Based on Generative Programming", *Proceedings of GP 2002, 2002 Workshop on Generative Programming*, Austin, Texas, 2002.
67. Wei Zhao, Barrett Bryant, Rajeev Raje, Mikhail Auguston, Andrew Olson, Carol Burt, "Generative Composition of Distributed and Heterogeneous Components", *Proceedings of the 40<sup>th</sup> Annual ACM Southeast Conference*, Raleigh, North Carolina, 2002.
68. Nanditha Siram, Rajeev Raje, Barrett Bryant, Andrew Olson, Mikhail Auguston, Carol Burt, "An Architecture for the UniFrame Resource Discovery Service", *Proceedings of the 3<sup>rd</sup> International Workshop on Software Engineering and Middleware*, Orlando, Florida, 2002.
69. Mathew Palakal, Mathew Stephens, Snehasis Mukhopadhyay, Rajeev Raje, Simon Rhodes, "A Multi-level Text Mining Method to Extract Biological Relationships", *Proceedings of the IEEE Computer Society Bioinformatics Conference, CSB2002*, Palo Alto, California, 2002.
70. Barrett Bryant, Mikhail Auguston, Rajeev Raje, Andrew Olson, Carol Burt, "Formal Specification of Generative Component Assembly Using Two-Level Grammar", *Proceedings of the SEKE 2002, Fourteenth International Conference on Software Engineering and Knowledge Engineering*, Ischia, Italy, 2002.
71. Carol C. Burt, Barrett R. Bryant, Rajeev R. Raje, Andrew Olson, Mikhail Auguston, "Quality of Service Issues Related to Transforming Platform Independent Models to Platform Specific Models", *Proceedings of the 6<sup>th</sup> IEEE International Enterprise Distributed Object Computing Conference*, Lausanne, Switzerland, 2002.
72. Changlin Sun, Rajeev Raje, Andrew Olson, Barrett Bryant, Mikhail Auguston, Carol Burt, Zhisheng Huang, "Composition and Decomposition of Quality of Service Parameters in Distributed Component-Based Systems", *Proceedings of the IEEE Fifth International Conference on Algorithms and Architectures for Parallel Processing*, Beijing, China, 2002.
73. Zhisheng Huang, Rajeev Raje, Andrew Olson, Barrett Bryant, Mikhail Auguston, Carol Burt, Changlin Sun, "System-Level Generative Programming of Unified Approach Based on UMM for the Integration of Distributed Software Components", *Proceedings of the IEEE Fifth International Conference on Algorithms and Architectures for Parallel Processing*, Beijing, China, 2002.
74. Fei Cao, Barrett Bryant, Rajeev Raje, Mikhail Auguston, Andrew Olson, Carol Burt, "Component Specification and Wrapper/Glue Code Generation with Two-Level Grammar using Domain Specific Knowledge", *Proceedings of the Proceedings of ICFEM 2002, 4<sup>th</sup> International Conference on Formal Engineering Methods*, Shanghai, China, 2002.

75. Chunmin Yang, Beum-Seuk Lee, Barrett Bryant, Carol Burt, Rajeev Raje, Andrew Olson, "Formal Specification of Non-Functional Aspects in Two-Level Grammar", *Proceedings of the UML 2002 Workshop on Component-Based Software Engineering and Modeling Non-Functional Aspects*, Dresden, Germany, 2002.
76. Wei Zhao, Barrett R. Bryant, Rajeev R. Raje, Mikhail Auguston, Andrew M. Olson, Carol C. Burt, "A Component Assembly Architecture with Two-Level Grammar Infrastructure", *Proceedings of the OOPSLA'2002 Workshop on Generative Techniques in the context of MDA*, Seattle, Washington, 2002.
77. Purvi Shah, Barrett R. Bryant, Rajeev R. Raje, Carol Burt, Andrew Olson, Mikhail Auguston, "Interoperability between Mobile Distributed Components using the UniFrame Approach", *Proceedings of the 41<sup>st</sup> Annual ACM South East Conference*, Savannah, GA, 2003.
78. Natasha Gupta, Rajeev R. Raje, Andrew Olson, Barrett Bryant, Mikhail Auguston, Carol Burt, "Analyzing the Web Services and UniFrame Paradigms", *Proceedings of the Southeastern Software Engineering Conference*, Huntsville, Alabama, 2003.
79. Carol C. Burt, Rajeev R. Raje, Barrett R. Bryant, Andrew Olson, Mikhail Auguston, "Model Driven Security: Unification of Authorization Models for Fine-Grain Access Control", *Proceedings of the 7th IEEE International Enterprise Distributed Object Computing Conference EDOC 2003*, Brisbane, Australia, 2003.
80. Wei Zhao, Barrett R. Bryant, Jeff Gray, Carol C. Burt, Rajeev R. Raje, Mikhail Auguston, Andrew M. Olson, "A Generative and Model Driven Framework for Automated Software Product Generation", *Proceedings of the 6th Workshop on Component-Based Software Engineering: Automated Reasoning and Prediction*, Portland, Oregon, 2003.
81. Snehasis Mukhopadhyay, Mathew Palakal, Daocheng Zhu and Rajeev Raje, "Intelligent Information Management in Bioinformatics", *Proceedings of the Twelfth Yale Workshop on Adaptive and Learning Systems*, New Heaven, Connecticut, 2003.
82. Fei Cao, Barrett Bryant, Carol Burt, Jeffrey Gray, Rajeev Raje, Andrew Olson, Mikhail Auguston, "Modeling Web Services: Towards System Integration in UniFrame", *Proceedings of the 7<sup>th</sup> World Conference on Integrated Design and Process technology (IDPT 2003)*, Austin, Texas, 2003.
83. Chunmin Yang, Barrett Bryant, Carol Burt, Rajeev R. Raje, Andrew Olson, Mikhail Auguston, "Formal Methods for Quality of Service Analysis in Component-Based Distributed Computing", *Proceedings of the 7<sup>th</sup> World Conference on Integrated Design and Process technology (IDPT 2003)*, Austin, Texas, 2003.
84. Fei Cao, Barrett R. Bryant, Carol C. Burt, Zhisheng Huang, Rajeev R. Raje, Andrew M. Olson, Mikhail Auguston, "Automating Feature-Oriented Domain Analysis", *Proceedings of the International Conference on Software Engineering Research and Practice (SERP'03)*, Las Vegas, Nevada, 2003.
85. Barrett Bryant, Beum-Seuk Lee, Fei Cao, Wei Zhao, Carol Burt, Rajeev Raje, Andrew Olson, Mikhail Auguston, "From Natural Language Requirements to Executable Models of Software Components", *Proceedings of the 2003 Monterey Workshop*, Chicago, Illinois, 2003.

86. Fei Cao, Barrett Bryant, Rajeev Raje, Mikhail Auguston, Andrew Olson, Carol Burt, "Assembling Components with Aspect-oriented Modeling/Specification", *Proceedings of UML Workshop Workshop in Software Model Engineering WiSE@UML'2003*, San Francisco, California, 2003.
87. Snehasis Mukhopadhyay, Mathew Palakal, Vijay Kodiripaka, Rajeev R. Raje, Javed Mostafa, "Managing Information Flow for Complex, Dynamic Tasks Using Multi-agent Collaboration", *Proceedings of the 2003 IEEE International Symposium on Intelligent Control, ISIC'03*, Houston, TX, 2003.
88. Fei Cao, Barrett Bryant, Rajeev R. Raje, Mikhail Auguston, Andrew Olson, Carol Burt, "A Component Assembly Approach Based on Aspect-Oriented Generative Domain Modeling", *Proceedings of SC'04, Software Composition Workshop affiliated with ETAPS 2004*, Barcelona, Spain, 2004.
89. Wei Zhao, Barrett R. Bryant, Rajeev R. Raje, Mikhail Auguston, Carol C. Burt, Andrew M. Olson, "Grammatically Interpreting Feature Compositions", *Proceedings of the 16th International Conference on Software Engineering and Knowledge Engineering (SEKE'04)*, Banff, Canada, 2004.
90. Fei Cao, Barrett Bryant, Carol Burt, Rajeev R. Raje, Andrew Olson, Mikhail Auguston, "A Meta-modeling Approach to Web Services", *Proceedings of ICWS04, IEEE International Conference on Web Services*, San Diego, California, 2004.
91. Wei Zhao, Barrett R. Bryant, Rajeev R. Raje, Mikhail Auguston, Carol C. Burt, Andrew M. Olson, "Automated Glue/Wrapper Code Generation in Integration of Distributed and Heterogeneous Software Components", *Proceedings of the 8th IEEE Enterprise Distributed Computing Systems Conference (EDOC'04)*, Monterey, California, 2004.
92. Pradeep Mysore, Rajeev R. Raje, Purushotham Bangalore, Barrett Bryant, "GridFrame – A Framework for Building Component-based Grid Systems", *12th International Conference on Advanced Computing & Communication (ADCOM '04)*, Ahmedabad, India, 2004.
93. Fei Cao, Barrett Bryant, Wei Zhao, Carol Burt, Rajeev R. Raje, Andrew Olson, Mikhail Auguston, "Marshaling and Unmarshaling Models Using Entity-Relationship Model", *Proceedings of ACM SAC'05, ACM Symposium on Applied Computing*, Santa Fe, New Mexico, 2005.
94. Shih-hsi Liu, Barrett Bryant, Jeffrey Gray, Rajeev R. Raje, Andrew Olson, Mikhail Auguston, "Two-level Assurance of QoS Requirements for Distributed Real-time and Embedded Systems", *ACM Symposium on Applied Computing, SAC'05*, Santa Fe, New Mexico, 2005.
95. Shih-hsi Liu, Barrett Bryant, Jeffrey Gray, Rajeev R. Raje, Andrew Olson, Mikhail Auguston, "QoS-UniFrame: A Petri Net-based Approach to Assure QoS Requirements of Distributed Real-time and Embedded Systems", *12<sup>th</sup> Annual IEEE International Conference and Workshop on the Engineering of Computer-based Systems (ECBS'05)*, Greenbelt, Maryland, 2005.
96. Shih-hsi Liu, Fei Cao, Barrett Bryant, Jeffrey Gray, Rajeev R. Raje, Andrew Olson, Mikhail Auguston, "Quality of Service Requirement Analyses for Component Composition: A Two-level Grammar Approach", *17<sup>th</sup> International Conference on Software Engineering and Knowledge Engineering (SEKE'05)*, Taipei, Taiwan, 2005.

97. Shih-hsi Liu, Barrett Bryant, Jeffrey Gray, Rajeev R. Raje, Mihran Tuceryan, Andrew Olson, Mikhail Auguston, "QoSPL: A QoS-driven Software Product Line Engineering Framework for Distributed Real-time and Embedded Systems", *18<sup>th</sup> International Conference on Software Engineering and Knowledge Engineering (SEKE'06)*, San Francisco, California, 2006.
98. Omkar J. Tilak, Rajeev R. Raje, Xukai Zou, "Composing Access Control Policies of Distributed Components", *The 2<sup>nd</sup> IEEE International Symposium on Dependable, Autonomic and Secure Computing*, Indianapolis, Indiana, 2006.
99. Shih-Hsi Liu, Barrett R. Bryant, Mikhail Auguston, Jeff Gray, Rajeev Raje and Mihran Tuceryan, "A Component-Based Approach for Constructing High-Confidence Distributed Embedded Systems", *The Monterey Workshop Series, 2005 Theme: Workshop on Networked Systems: Realization of Reliable Systems on Top of Unreliable Networked Platforms*, Laguna Beach, California, 2006.
100. Omkar Tilak, Rajeev R. Raje, "Temporal Interaction Contracts for Components in a Distributed System", *Proceedings of the 11th IEEE International Enterprise Distributed Object Computing Conference EDOC 2007*, Annapolis, Maryland, 2007.
101. Girish Joshi, Rajeev Raje, Mihran Tuceryan, "Designing and Experimenting with a Distributed Tracking System", *Proceedings of the 14th IEEE International Conference on Parallel and Distributed Systems*, Melbourne, Australia, 2008.
102. Rajeev R. Raje, Pratibha Katuri, Anjali Kumari, Omkar Tilak, "Multi-level Matching of Distributed Software Components", *Proceedings of the International Conference on Computer, Communication, and Instrumentation*, Mumbai, India, 2009.
103. Snehasis Mukhopadhyay, Shengquan Peng, Rajeev R. Raje, Mathew Palakal, Javed Mostafa, "Performance and Processing Time of Some Information Filtering Systems on a Benchmark Text Data Set", *Proceedings of the 21st International Conference on Software Engineering and Knowledge Engineering*, Boston, MA, 2009.
104. Ketaki A. Pradhan, Lahiru Gallege, Alfredo Moreno, Rajeev R. Raje, "MDE-URDS: A Mobile Device Enabled Service Discovery System", *Proceedings of the International Conference on Recent trends in Computing and Communications*, Chennai, India, 2009.
105. Omkar J. Tilak, Snehasis Mukhopadhyay, Rajeev R. Raje, Mihran Tuceryan, "A Novel Reinforcement Learning Framework for Sensor Subset Selection", *Proceedings of 2010 IEEE International Conference on Networking, Sensing, and Control*, Chicago, IL, 2010.
106. Rajeev R. Raje, Snehasis Mukhopadhyay, Sucheta Phatak, Rashmi Shastri, Lahiru Gallege, "Software Service Selection by Multi-Level Matching and Reinforcement Learning", *Proceedings of the 5th International ICST Conference on Bio-Inspired Models of Network, Information, and Computing Systems (in Cooperation with ACM SIGSIM)*, Boston, MA, 2010.
107. Ryan Rybarczyk, Rajeev R. Raje, Mihran Tuceryan, "A Next-generation of a Distributed Tracking System", *Proceedings of the International Conference On Demand Computing*, Bangalore, India, 2010.
108. Lahiru Gallege, Ketaki Pradhan, Rajeev R. Raje, "Experiments with a Multi-level Discovery System", *Proceedings of the 1st International Conference on Computing*, New Delhi, India, 2010.

109. Ryan Rybarczyk, Rajeev R. Raje, Mihran Tuceryan, “Enhancing a Distributed Tracking System”, *Proceedings of the 3rd International Joint Conference on Information and Communication Technology*, Mumbai, India, 2011.
110. Lahiru S. Gallege, Dimuthu U. Gamage, James H. Hill, Rajeev R. Raje, “Towards a Comprehensive Method for Integrating Trust into Enterprise DRE Systems”, *Proceedings of the 17th IEEE International Conference on Embedded and Real-Time Computing Systems and Applications, Work-in-Progress Session*, Toyoma, Japan, 2011.
111. Lahiru S. Gallege, Dimuthu U. Gamage, James H. Hill, Rajeev R. Raje, “A Case Study in Composing a Trusted Distributed Real-time and Embedded (DRE) System”, *Proceedings of the International Conference On Network Infrastructure Management Systems*, Mumbai, India, 2011.
112. Dimuthu U. Gamage, Zhisheng Huang, Andrew Olson, Rajeev R. Raje, “Creating QoS-aware Distributed Computing Systems Using UniFrame Approach”, *Proceedings of the 2nd International Conference on Computing*, New Delhi, India, 2011.

### Conference Articles Under Review

113. Lahiru S. Gallege, Rajeev R. Raje, Meghna Babbar-Sebens, “Cloud Service Selection – A Case Study”, *International Conference on Communication, Information and Computing Technology*, 2012.

### Other Publications

#### Editorial Comments

114. Rajeev R. Raje, “Distributed Computing: A Choice of the Present and the Future!”, Guest Editor’s Introduction, *ACM SIGAPP Applied Computing Review*, Vol. 7, No.1, Page: 4, Spring 1999.
115. Chang-Hyun Jo, Rajeev R. Raje, “Editorial Message: Special Track on Programming Languages and Object Technologies”, *Proceedings of ACM Symposium on Applied Computing, SAC’02*, 2002.
116. Rajeev R. Raje, Barrett R. Bryant, “Object-based Cluster Computing”, Guest Editor’s Introduction, *ACM SIGAPP Applied Computing Review*, 2002.
117. Barrett R. Bryant, Rajeev R. Raje, “Distributed Object and Component-based Software Systems”, Mini-track Introduction, *Thirty-sixth Annual Hawaii International Conference on System Sciences, HICSS-36*, 2003.
118. Chang-Hyun Jo, Rajeev R. Raje, “Editorial Message: Special Track on Programming Languages and Object Technologies”, *Proceedings of ACM Symposium on Applied Computing, SAC’03*, 2003.
119. Barrett R. Bryant, Rajeev R. Raje, “Distributed Object and Component-based Software Systems”, Mini-track Introduction, *Thirty-seventh Annual Hawaii International Conference on System Sciences, HICSS-37*, 2004.
120. Davide Ancona, Rajeev R. Raje, Mirko Viroli, “Editorial Message: Special Track on Object-oriented Programming Languages and Systems”, *Proceedings of ACM Symposium on Applied Computing, SAC’04, and SAC’05*, 2004 and 2005.

121. Barrett R. Bryant, Rajeev R. Raje, Vana Kalogeraki, “Distributed Object and Component-based Software Systems”, Mini-track Introduction, *Thirty-seventh Annual Hawaii International Conference on System Sciences, HICSS-37*, 2004.

### Abstracts

122. Michael Boyles, Nila Patel, Snehasis Mukhopadhyay, Rajeev Raje, “A Collaborative Approach to Information Filtering”, *Proceedings of Argonne Symposium for Undergraduates*, pp: 33, 1996.
123. Michael Boyles, Nila Patel, Snehasis Mukhopadhyay, Rajeev Raje, “A Distributed Environment For Collaborative Information Filtering”, *Proceedings of Second Indiana University Undergraduate Research Conference*, 1996.
124. Michael Boyles, Nila Patel, Snehasis Mukhopadhyay, Rajeev Raje, “The Effects of a “Timeout” Period for a Distributed Information Filtering System”, *Proceedings of Butler University Undergraduate Research Conference*, pp: 38, 1997.

### Posters

125. Sivakumar Chinnasamy, Rajeev R. Raje, “Formal Specification of Software Design Patterns”, Poster at *Spring SERC Showcase*, 2000.
126. Rajeev R. Raje, Snehasis Mukhopadhyay, Mathew Palakal, Javed Mostafa, “SIFTER”, (Virtual Poster) at *Supercomputing*, 2000.
127. Rajeev R. Raje, Andrew Olson, Barrett Bryant, Mikhail Auguston, Carol Burt, “UniFrame”, at *Indiana SERC Fall showcase*, 2001.
128. Rajeev R. Raje, Natasha Gupta, Andrew Olson, Barrett Bryant, Mikhail Auguston, Carol Burt, “Encompassing .Net into UniFrame”, at *SERC Spring showcase*, 2002.
129. Rajeev R. Raje, Girish Brahmamath, Natasha Gupta, Andrew Olson, Barrett Bryant, Mikhail Auguston, Carol Burt, “QoS Framework of UniFrame”, at *SERC Fall showcase*, 2002.
130. Rajeev R. Raje, Andrew Olson, Barrett Bryant, Mikhail Auguston, Carol Burt, “UniFrame”, at *SERC Spring and Fall showcases*, 2003.
131. Pradeep Mysore, Rajeev R. Raje, Barrett Bryant, Purushotham Bangalore, “GridFrame”, at *SIGSOFT’04*, 2004.
132. Rajeev R. Raje, Amruta Jejurikar, Saurabh Agrawal, Pratibha Katuri, Andrew Olson, “Experimenting with Multi-level Matching of Software Components”, at *SERC Fall showcase*, 2006.
133. Subir K. Chakrabarti, Rajeev R. Raje, “Cloud Computing, Information Flow and Markets”, NSF PI Meeting: The Science of Cloud, Arlington, VA, March 2011.
134. Lahiru Gallege, Dimuthu Gamage, James Hill, Rajeev Raje, “Modeling, Specifying, Discovering, and Integrating Trust into Distributed Real-time and Embedded (DRE) Systems – Preliminary Outcomes” S<sup>2</sup>ERC Showcase, Ames, IA, November 2011 and Arlington, VA, May 2012.

135. Ryan Rybarczyk, Rajeev R. Raje, Mihran Tuceryan, "e-DOT: An Indoor Distributed Tracking System", S<sup>2</sup>ERC Showcase, Ames, IA, November 2011, and Arlington, VA, May 2012.

### **Technical Reports**

136. Rajeev R. Raje, Daniel J. Pease, "A Class Algebra - A New Approach to Class Analysis", NY CASE Center, No. 9309, pp: 1-45, 1993.
137. Sivakumar Chinnasamy, Yi Dai, Rajeev R. Raje, "Formalization of Design Pattern Specifications: A Survey", Department of Computer and Information Science Technical Report, TR-CIS-0799-14, 1999.
138. Girish Brahmamath, Rajeev R. Raje, Andrew Olson, Changlin Sun, "Quality of Service Catalog for Software Components", Technical Report (TR-CIS-0219-01), Department of Computer and Information Science, Indiana University Purdue University Indianapolis, 2001.
139. Carol Burt, Barrett R. Bryant, Rajeev R. Raje, Andrew Olson, Mikhail Auguston, "An analysis of Distributed Component Architectures Standards and the QOS standards Needed to Progress Unification", Technical Report (CIS-TR-2001-11), Department of Computer and Information Sciences, University of Alabama at Birmingham, 2001.

### **Faculty Mentor for Abstracts**

140. Joseph Williams, "An Implicit Object Oriented Programming Environment Based on OFFERS" – Proceedings of First Indiana University Undergraduate Research Conference, 1995.
141. Sivakumar Chinnasamy, "Analysis of Design Patterns", *IUPUI School of Science Graduate Research Symposium*, 1999.

### **Presentations**

#### **Tutorials**

1. "Distributed-Object Computing – An Overview of Java-RMI and CORBA" – At the Fifth International Conference on Advanced Computing, organized in-cooperation with IEEE Computer Society, ADCOMP'97 – December 1997.
2. "Multi-agent Systems" – In the Spring 2000 Meeting of the Institute for Operation Research and the Management Sciences (INFORMS) Computing Society, May 2000.

#### **Invited Talks**

1. "The applications of VISRAM/DIMOS to Industrial Automation", Industrial Workshop in Siemens Limited, Bombay, India, June 1987.
2. "Object-Flow - A Symbiosis of Object Oriented Design and Data-Flow Analysis", Minnowbrook Workshop on *Software Engineering for Parallel Computing*, New York, August 1992.
3. "Can Object-Oriented Design and Data-Flow Computation Complement Each Other Well?", At Victoria Jubilee Technical Institute, Bombay, India, September 1992.
4. "Object-Oriented Program Partitions", United Technologies Research Center, Hartford, Connecticut, January 1994.

5. "A Boolean Algebra of Classes", Tektronix Laboratories, Hillsboro, Oregon, February 1994.
6. "Object-Flow - A Symbiosis of Object Oriented Design and Data-Flow Analysis", Department of Computer and Information Science, Indiana University Purdue University Indianapolis, Indianapolis, IN, May 1994.
7. "HPJava - A Solution to Meta-Challenges", Department of Computer and Information Science, Indiana University Purdue University Indianapolis, Indianapolis, IN, April 1996.
8. "Computer Science – What is it Exactly?", To Ben Davis High School Students, Indianapolis, IN, May 1996.
9. "Collaborative Visualization", Partners of IU's Virtual Reality Initiative, Indianapolis, IN, May 1997.
10. "Principles of Distributed-Object Computing and their relation to PLC Programming", Concept Engineers Incorporated, Mumbai, India, December 1997.
11. "Experiences with the Java-RMI Paradigm for Distributed Computing" – Software Technology Committee of the Indiana Business Modernization & Technology Corporation, Indianapolis, IN, March 1998.
12. "Experiments with Distributed-Object Systems", At Delco Electronics Incorporated, Kokomo, IN, April 1998.
13. "Knowledge Sharing and Collaboration: Applications in Bioinformatics Research, (joint), Eli Lilly & Company, Indianapolis, IN, September 1998.
14. "Distributed-object Computing using Java-RMI", 1998 Indianapolis Client/Server and Internet Developer's Conference, Indianapolis, IN, October 1998.
15. "Distributed Computing with Java-RMI", Indianapolis Java User's Group, Indianapolis, IN, May 1999.
16. "Distributed Software Systems – Development, Testing and Reliability" (joint), at Microsoft Corporation, Redmond, WA, June 1999.
17. "Knowledge Sharing and Collaboration: Applications in Bioinformatics Research", Software Technology Committee of the Indiana Business Modernization & Technology Corporation, Indianapolis, IN, September 1999.
18. "An Intelligent Information Filtering System for Digital Libraries", (joint), NSF Digital Libraries Initiative All-Projects Meeting, Ithaca, NY, October 1999.
19. "On Designing a Multi-Agent System for Distributed Information Filtering", Fall 1999 Meeting of the Institute for Operation Research and the Management Sciences Computing Society, Philadelphia, PA, November 1999.
20. "UMM: Unified Meta-object Model and Global Systems", Department of Computer and Information Sciences, University of Alabama, Birmingham, AL, January 2000.
21. "Experiences in Building Distributed-object Systems" – *Plenary Speaker* – Symposium on Object-oriented Distributed Computing at the 77<sup>th</sup> Annual Meeting of the Alabama Academy of Science, Birmingham, AL, March 2000.

22. "D-SIFTER: A Case Study in Designing a Multi-Agent System", Spring 2000 Meeting of the Institute for Operation Research and the Management Sciences Computing Society, Salt Lake City, UT, May 2000.
23. "Distributed-object Systems", IBM Watson Research Center, Hawthorne, NY, May 2000.
24. "SIFTER: A Content-based Information Filtering System" (joint), NSF Digital Libraries Initiative All-Projects Meeting, Stratford-upon-Avon, England, June 2000.
25. "D-SIFTER: A Distributed Information Filtering System", NSF Digital Libraries Initiative All-Projects Meeting, Stratford-upon-Avon, England, June 2000.
26. "Distributed-object Systems", NiSys Corporation, Indianapolis, IN, July 2000.
27. "Heterogeneous Distributed-object Computing", Indiana SERC Showcase, Indianapolis, IN, June 2001.
28. "A Framework for Seamless Integration of Distributed Heterogeneous Software Components", ONR CIP/SW URI Meeting, Arlington, VA, July 2001.
29. "UniFrame" (joint), OMG Technical Meeting, Toronto, Canada, September 2001.
30. "UniFrame" (joint), Indiana SERC Fall Showcase, Ball State University, Muncie, IN, December 2001.
31. "UniFrame" (joint), OMG Technical Meeting, Anaheim, CA, February 2002.
32. "Encompassing .Net into UniFrame" (joint), SERC Spring Showcase, University of West Virginia, Morgantown, WV, May 2002.
33. "UniFrame", Office of Naval Research, London, England, May 2002.
34. "UniFrame", (joint), University of Edinburgh, Edinburgh, Scotland, May 2002.
35. "UniFrame", (joint), Lancaster University, Lancaster, England, May 2002.
36. "UniFrame", NSF US-EU Workshop, Landsdowne, VA, September 2002.
37. "QoS Framework of UniFrame" (joint), SERC Fall Showcase, Ball State University, Muncie, IN, December 2002.
38. "UniFrame", VJTI, University of Mumbai, Mumbai, India, December 2002.
39. "UniFrame", ONR, Harpers Ferry, VA, May 2003.
40. "UniFrame", ONR CIP/SW Review, Annapolis Junction, MD, November 2003.
41. "Model-driven Security: Unification of the Authorization Models for Fine-grain Access Control" (joint), SERC Fall Showcase, Ball State University, Muncie, IN, December 2003.
42. "Modeling Component Quality of Service" (joint), SERC Spring Showcase, West Virginia University, Morgantown, WV, May 2004.
43. "Experiments with the UniFrame Resource Discovery System", CS Department, University of Alabama at Birmingham and IEEE Computer Society Chapter, Birmingham, AL, July 2005.

44. “UniFrame: An Exercise in Developing Distributed Software Systems”, Department of Information Systems and Operations Management, Ball State University, Muncie, IN, November 2005.
45. “Computer Science at IUPUI”, Department of Computer Science, Ball State University, Muncie, IN, October 2006.
46. “Experimenting with Multi-level Matching of Software Components” (joint), *SERC Fall showcase*, Muncie, IN December 2006.
47. “Computer Science at IUPUI”, Ruparel College, Mumbai, India, January 2008.
48. “Computer Science at IUPUI”, SIES College, Mumbai, India, January 2008.
49. “Computer Science at IUPUI”, Vivekanand College, Mumbai, India, January 2008.
50. “Computer Science at IUPUI”, Xavier Institute of Engineering, Mumbai, India, January 2008.
51. “Computer Science at IUPUI”, Kelkar College, Mumbai, India, January 2008.
52. “Computer Science at IUPUI”, Somaiya College, Mumbai, India, January 2008.
53. “Computer Science at IUPUI”, VPM Polytechnic College, Thane, India, January 2008.
54. “Computer Science at IUPUI”, Sathye College, Mumbai, India, January 2008.
55. “Experiments with Multi-level Contracts and Matching in Distributed Systems – The UniFrame Way”, Department of Electrical and Computer Engineering, IUPUI, Indianapolis, IN, February 2008.
56. “UniFrame”, Research Day, IUPUI, Indianapolis, IN, March 2009.
57. “S<sup>2</sup>ERC Research at IUPUI”, SERC Showcase, Indianapolis, IN, September 2009.
58. “MDE-URDS”, VJTI, Mumbai, India, April 2011.
59. “MDE-URDS”, VESIT, Mumbai, India, April 2011.
60. “Modeling, Specifying, Discovering, and Integrating Trust into Distributed Real-time and Embedded (DRE) Systems” (joint), S<sup>2</sup>ERC Showcase, Ames, IA, November 2011.
61. “A Case Study in Composing a Trusted Distributed Real-time and Embedded (DRE) System”, INTERFACE, Mumbai, India, December 2011.
62. “A Distributed Framework for Location Tracking” (joint), S<sup>2</sup>ERC Showcase, Arlington, VA, May 2012.
63. “Modeling, Specifying, Discovering, and Integrating Trust into Distributed Real-time and Embedded (DRE) Systems” (joint), S<sup>2</sup>ERC Showcase, Arlington, VA, May 2012.

## Professional Service

- Guest Editor – *ACM SIGAPP Computing Review – A Special Issue on Distributed Computing – Spring 1999*

- Guest Co-Editor – *ACM SIGAPP Computing Review – A Special Issue on Object and Component Technologies for Cluster Computing – 2001/2002*
- Workshop Co-chair – *IEEE International Workshop on Object and Component Technologies for Cluster Computing – at the IEEE International Symposium on Cluster Computing and the Grid, CCGRID 2001.*
- Mini-track Chair – *Distributed Objects and Components – at the ACM Symposium on Applied Computing, SAC 2001.*
- Track Co-chair – *Programming Languages and Object Technology – at the ACM Symposium on Applied Computing, SAC 2002, SAC 2003.*
- Track Co-chair – *Object Oriented Programming and Systems – at the ACM Symposium on Applied Computing, SAC 2004, SAC 2005.*
- Mini-Track Co-Chair – *Distributed Object and Component-based Software Systems – at the Annual Hawaii International Conferences on System Sciences, HICSS-36 (2003), HICSS-37 (2004), HICSS-38 (2005).*
- Publicity Chair of *Euro-PADS 1998, HiPC 2005-07.*
- Program Vice-Chair – *The IEEE International Conference on High Performance Computing and Communications (HPCC 2008 and 2010)*
- Program Vice-Chair – *The 14th IEEE International Conference on Parallel and Distributed Systems (ICPADS 2008)*
- Member of the Editorial Board – *International Journal of E-adoption – 2008-Present*
- Track Co-Organizer – *Model-Based Software Engineering Track – at the Twentieth International Conference on Software Engineering and Knowledge Engineering, SEKE 2008*
- Member of the Editorial Board – *International Journal of Information Technology, Communications and Convergence – 2009-Present*
- Member of the Editorial Board – *CSI Transactions on ICT – 2011-Present,*
- Member of the Editorial Board – *Software Engineering: An International Journal – 2011-Present,*
- Track Chair – *Networked Based Information Systems (NBIS), 2009*
- Member of the Advisory Board – *The 1st International Conference On Computer, Communication And Instrumentation (ICCCI 2009)*
- Session Chair: ADCOMP'97, Spring 2000 INFORMS, HICSS-36, ICICI-09, NBIS'09.
- Program Committee Member:
  - International Conference on Software and Knowledge Engineering (2008-12), HiPC Student Symposium (2009-10), IEEE International Conference on Algorithms and Architecture for Parallel Processing (ICA3PP 2000, 2002, 2005, 2007-09, 2012), IEEE Enterprise Distributed Object Computing Conference (EDOC 2003-12), International Conference on Soft Computing

as Transdisciplinary Science and Technology (CSTST'08), International Conference on Digital Information Management (ICDIM 2007-08), Generative Programming and Component Engineering for QoS Provisioning in Distributed Systems (GPCE4QoS 2006), IEEE International Conference on Digital Information Management (ICDIM 2006-07), IEEE International Workshop on Trusted and Autonomic Computing Systems (TACS 2006), High Performance Computing Symposium (HPC 2004), 2nd International Conference on Web-based Learning (ICWL 2003), IEEE Advances in Digital Libraries (ADL 2000), First IEEE Computer Society International Workshop on Cluster Computing (IWCC 1999), Sixth International Conference on Advanced Computing (ADCOMP 1998).

- Memberships: ACM and IEEE
- Reviewer: National Science Foundation, Kansas State University, Naval Post-graduate School, University of Colorado at Denver, University of Washington at Tacoma, University of UAE, IEEE Transactions on Software Engineering, IEEE Computer, IEEE Intelligent Systems, Journal of Parallel and Distributed Computing, Parallel and Distributed Computing Practice Journal, Cluster Computing, Concurrency and Computation: Practice and Experience, ACTA International Journal of Computers and Applications, IPSI Journal, Electronics and Telecommunications Research Institute Journal, Data and Knowledge Engineering Journal, IEEE Enterprise Distributed Computing Conference (EDOC'03-11), Hawaii International Conference On System Sciences (HICSS'05, 06), IEEE International Conference on Algorithms and Architecture for Parallel Processing (ICA3PP 2000, 2002, 2005, 2007, 2008), ACM Symposium on Applied Computing (SAC'00, SAC'04, SAC'05), IEEE Advances in Digital Libraries (ADL'2000), European Conference on Parallel Computing (Euro-Par 2000), Parallel and Distributed Computing Systems Conference, John Wiley and Sons, Inc., GRID 2002, Prentice-Hall, Inc., Scott-Jones Publishing Company, Morgan-Kaufman Publishing Company.

## Service

- Campus Tenure and Promotion Committee, IUPUI
- Centrality Study Group, IUPUI
- Volunteer, Science Olympiad, IUPUI
- Chair and Member, Nomination and Awards Committee, School of Science
- Mentor, Windows on Science Program, School of Science
- Learning and Assessment Committee, School of Science
- Dean Search Committee, School of Science
- Associate Dean Search Committee, School of Science
- Academic Appeals Committee, School of Science
- Graduate Affairs Committee, School of Science
- Research Committee, School of Science
- Unit Committee, School of Science

- Ad-Hoc Committee for P & T Document, School of Science
- Associate Chair, CIS Department
- Faculty Search Committee, CIS Department
- Chairman Selection Committee, CIS Department
- Research & Infrastructure Committee, CIS Department,
- Graduate Committee Chair, CIS Department
- Undergraduate Committee Chair, CIS Department
- Undergraduate Committee, CIS Department
- Seminar and Colloquia Committee Chair, CIS Department
- Primary Committee Chair, CIS Department

### **Courses Taught**

- Graduate Courses: Distributed-object Computing, Object-oriented Design and Programming, Programming Languages, Operating Systems, Introduction to Distributed Computing, Advanced Distributed Computing
- Undergraduate Courses: Operating Systems, Exploration in Computing, High Performance Computing, Programming Languages, Systems Programming, Advanced Programming, Computing I, Computing II, Problem Solving Using C++

### **Graduate Student Supervision**

- PhD: Lahiru Gallege, Dimuthu Gamage, Ryan Rybarczyk, Fei Cao (joint-UAB), Wei Zhao (joint-UAB), Alex Liu (joint-UAB)
- MS: Sivakumar Chinnasamy, Mingyong Qiao, Nanditha Nayani, Girish Brahmamath, Zhisheng Huang, Changlin Sun, Natasha Gupta, Praveen Gopalkrishna, Pradeep Mysore, Anjali Kumari, Barun Devaraju, Alex Crespi, Srikanth Reddy, Zhun Li, Liying Tang, William Higdon, Robert Berbeco, Kalpana Tummala, Jayasree Gandhamaneni, Padma Kambhupati, Ravi Bulusu, Richard Neidermyer, Pratibha Katuri, Omkar Tilak, Amruta Jejurikar, Girish Joshi, Sucheta Phatak, Neha Talavdekar, Ketaki Pradhan, Ryan Rybarczyk, Sonali Sharma, Aboli Phadke, Tammy Dugan
- Thesis/Project Committee Member: Serena Gong, Tanumoy Pati, Venkatesh Bharadwaj, Mohit Sachan, Darshan Puranik, Omkar Tilak, Manjula Peiris, Harold Owens, Ashhar Madni, Xiang Ran, Yogesh Karandikar, Nikesh Patel, Kumar Abhishek, Joby Varghese, Shengquan Peng, Mathew Stephens, Michael Boyles, Srinivasan Sikkupparbathyam, Peng Zhang, Patrick Kennedy, Anthony Wagner, Wilfred Mascarenhas, Ming Zhong, Chih-feng Lin
- External Examiner: The Chinese University of Hong Kong, The Hong Kong Polytechnic University, RMIT Australia, Deakin University – Australia, Tezpur University – India

## **Undergraduate Student Supervision**

- Research Assistants: Michael Boyles, Nila Patel, Joseph Williams, Muris Ridzal, James Freeman, Joseph Hansome, Ravi Patel.
- Joseph Williams, Michael Boyles, Nila Patel and Muris Ridzal were awarded IUPUI UROP Scholarships.