Dr. Rajiv Ramnath
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Summary:

- 18+ years' experience in computer science research, education and service.
- 3+ years' experience as a Program Director at the National Science Foundation, directing federal research programs, managing and co-managing five programs, $140M in ongoing awards, providing program oversight on large-scale institutes and centers.
- 17+ years' experience in building and leading an industry-university collaborative program that integrates applied research in large-scale systems into technology-transfer, professional practice, software engineering education, innovation, and entrepreneurship education.
- 12 years' industry experience in software product development and deployment of enterprise-level technology, work-management systems, Internet and Web-based, E-commerce and distributed information systems, and research and development of advanced software technologies. This includes:
    - 11 years' experience in delivering on inter-company software projects and customer deployments with globally located software teams and partner organizations.
    - 11 years' experience leading federally and commercially funded, advanced technology application R&D projects.
- 17+ years of management and software development consulting experience in information technology.
- 17+ years' experience in software engineering education.
- 109 peer-reviewed publications (19 in journals, 90 in conferences), 3 best paper awards, 3 books, 7 book chapters.
- 68 MS theses, 11 PhD dissertations, 2 MFA theses, 60 MS projects and 4 senior honors theses advised and co-advised.
- Established and expanded the Computer Science and Engineering Capstone program to where this Capstone program is one of the largest computing-oriented programs in the country.
- Established a 5 course "professional spine" within the computer science program at OSU. These courses continue to be among the most widely taken courses in the curriculum.
- Service to Computer Science and Engineering graduate admissions, graduate studies, outreach and engagement, promotion and tenure committees, College of Engineering promotion and tenure committees, research committees, University Senate and Senate Research Subcommittee.
- 2 teaching awards:
    - Department of Computer Science and Engineering Faculty Teaching Award in 2007.
    - College of Engineering Charles E. MacQuigg Award for Outstanding Teaching in 2010.
- Developed and delivered several executive education workshops and industry talks.
- Doctorate in Computer Science, specialization in Programming Environments for Distributed Systems.

Federal Agency Experience and Employment History:

- January 2015 – September 2018. Program Director, National Science Foundation, Office of Advanced Cyberinfrastructure (OAC), Software Cluster. Part-time appointment (20%) from January 2018 onwards.

  Manage a portfolio of $140M in awards in the following programs:
  o Software Infrastructure for Sustained Innovation (SI2), see: https://www.nsf.gov/pubs/2016/nsf16532/nsf16532.htm.
  o Exploiting Parallelism and Scalability (XPS), see: https://www.nsf.gov/pubs/2016/nsf16507/nsf16507.htm.
  o Scalable Parallelism at the eXtreme (SPX), see: https://www.nsf.gov/pubs/2016/nsf16605/nsf16605.htm.
  o Critical, Resilient, Interdependent, Systems and Processes (CRISP), see: https://www.nsf.gov/pubs/2016/nsf16519/nsf16519.htm.
  o Designing Materials to Revolutionize and Engineer our Future (DMREF), see: https://www.nsf.gov/pubs/2016/nsf16613/nsf16613.htm.

  Provide program oversight to the following large awards ($15M-$23M):
  o The Science Gateway Community Institute (sciencegateways.org)
  o The Molecular Sciences Software Institute (molssi.org)
  o The Network for Computational Nano Technology (nanoHub.om)
- September 2014 – January 2015. Expert, National Science Foundation, Advanced Cyberinfrastructure (ACI) Program.

Academic Experience and Employment History:
- September 2016 – present: Professor of Practice, Dept. of Computer Science and Engineering, The Ohio State University.
- January 2020 – present: Co-Director, Smart and Connected Communities and Distributed Sensing Community of Practice, Translational Data Analytics Institute (TDAI), The Ohio State University.
  o Member of the TDAI leadership team.
- September 2002 – present: Co-Director, Collaborative for Enterprise Transformation and Innovation (CETI, http://www.ceti.cse.ohio-state.edu), Dept. of Computer Science and Engineering, The Ohio State University (OSU), Columbus, Ohio.
  o Established industry-university collaborative programs and partnerships in IT enabled services with the National Science Foundation and Ohio-located companies. Developed interdisciplinary research collaborations with the Departments of Industrial and Systems Engineering, Education, Sociology, and Design, the John Glenn School of Public Affairs, Dept. of The OSU Office of Information Technology, the OSU Medical Center, Dept. of Accounting and MIS and the Center for Entrepreneurship.
  o Established strategic partnerships with local industry through CETI as an Industry-University Collaborative Research Center (IUCRC) Site affiliated with the Georgia Institute of Technology Center for Experimental Research in Computing (CERCS). The CETI IUCRC was in existence from 2008-2013.
  o CETI interactions resulted in JP Morgan Chase and Nationwide Insurance becoming one of the largest recruiters of CSE graduates.
  o Generated $5.1M in external funding for CETI, out of $8.7M in total external funding.

- o Directed over 50 industry-university collaborative projects with local industry partners (Nationwide Insurance, SafeAuto, State Auto, City of Columbus, JPM Chase, McGraw-Hill Companies, the Ohio Department of Job and Family Services, Astute Technologies, Rosetta Inc., IBM, The Columbus Dispatch, OCLC and others). These projects delivered strategic value to local industry, contributed to best practices in information technology management, IT strategic planning, technology selection, Service-Oriented Architecture and Enterprise Architecture, and delivered advanced educational experiences to graduate, undergraduate and K-12 students.
  - o Managed the DARPA-funded, OSU-led multi-industry-university ExScal project that deployed the largest wireless sensor and 802.11 long-line intrusion detection networks at the Avon Park Air Force base in Florida.
  - o Established the CETI CIO Forum on Enterprise Architecture to enable peer-based learning among local industry on EA roles, governance, EA-tailored innovation, SOA, enterprise knowledge management, the impact of the Sarbanes-Oxley Act on EA, EA and acquisitions and Agile Practices in EA.
  - o Developed workshop-based offerings for local area professionals in Enterprise Architecture, Enterprise Software Engineering, Product Management, Software Quality Assurance, Software Testing, Agile Methodologies and Innovation.
- October 2013 – December 2014 AweSIM Evangelist, Ohio Supercomputer Center, OH-Tech. The AweSIM initiative (http://www.awesim.org) is an initiative funded by the 3rd Frontier Program of the State of Ohio. AweSIM seeks to use modelling and simulation supported by high-performance computing to bring a sustainable competitive advantage to small and medium manufacturers. In the Evangelist role, I supported and advised business development, software architecture and training and workforce development.
- September 2008 – September 2012: Associate Director, Institute for Sensing Systems, College of Engineering (http://www.iss.osu.edu), The Ohio State University. Charged with fiscal management of the Institute, developing industry affiliate program and engineering curriculum around integrated sensing, establishing inter-disciplinary initiatives, leading grant proposals, and project and program management. This Institute currently serves as an umbrella organization for $37M in on-going grant funding. Duties involve strategic planning, financial planning, implementing and evaluating initiatives (e.g. industrial advisory board, orchestrating integrative projects, and educational and multiple levels of community involvement efforts), guiding research proposal development, implementing seed initiatives, marketing, and day-to-day operational management.
- September 2010 – August 2016: Associate Professor of Practice, Dept. of Computer Science and Engineering, The Ohio State University.
  - o As part of the Dean's committee for establishing the Masters' of Engineering Leadership degree program, developed the Enterprise Architecture and Systems track (in collaboration with CETI member companies).
  - o Enhanced the software engineering course to include enterprise-relevant components – enterprise technologies, software and system architecture, integration patterns, risk management and business-IT alignment.
  - o Developed an advanced course on mobile computing.
  - o In collaboration with Syracuse University and JP Morgan Chase incorporated the Global Enterprise Technologies (GET) program (http://globaltech.syr.edu/) into the Computer Science and Engineering program at OSU.

- o Developing a certificate program on the Foundations of Software Development offered by the Computer Science and Engineering department to Nationwide Insurance. 52 students successfully completed this program.
  - o Courtesy appointment in Electrical and Computer Engineering.
  - o Member University Ad- Hoc committee on Faculty Rewards.
- September 2007 – September 2010: Assistant Professor of Practice, Dept. of Computer Science and Engineering, The Ohio State University.
  - o Helped found, develop and direct the NSF-funded NEWPATH entrepreneurship program for students in the College of Engineering and College of Business at the Ohio State University.
  - o Redeveloped the Distributed Enterprise Computing course to include project-based modules on XML, AJAX, the Google toolkit, Enterprise Java (including Enterprise Java Beans, Java Server Faces) and the Enterprise Service Bus.
  - o Established and expanded the Computer Science and Engineering Capstone Program through industry-sponsored projects with large industry and government organizations, non-profit agencies and technology entrepreneurs. This Capstone program is extremely well regarded and the most popular segments within the Computer Science and Engineering curriculum. So far, 200+ projects have been completed. Several projects result in software incorporated in products or in applications or commercial use. This course plays a key role in the ABET accreditation of the CSE program.
- July 2007 – September 2007: Senior Lecturer, Dept. of Computer Science and Engineering, The Ohio State University (bridge appointment). Duties overlapped with the above professor of practice appointments.
- September 2002 – June 2007: Visiting Assistant Professor, Dept. of Computer Science and Engineering, The Ohio State University.
  - o Established CETI (see above) and began engagement with industry. Taught the junior keystone project course and the senior Software Engineering Capstone course.
- 1999-2002: Senior Lecturer (adjunct faculty), Department of Computer and Information Science, The Ohio State University. Taught the Software Engineering Capstone course.

Industry Experience and Employment History

- April 1998 – June 2002: Vice President, Concentus Technology Corp., Officer of the company. Technical and managerial responsibility over the development and competitive positioning of the Concentus line of work-management products. Established and integrated offshore teams in Bangalore, India, Pune, India and Toronto, Canada. This workflow technology enabled CTC to receive $6M in venture capital funding.
- December 1999 – June 2000, interim Chief Technology Officer, Concentus Technology Corp., responsible for setting enterprise technology direction for Concentus product suite.
- May 1997 - June 2002: Director, Product Development, Concentus Technology Corp.[1], Complete technical responsibility over global product development. Managerial responsibility over Concentus' US-based team, including project management, team structure and responsibilities, hiring, and salary structure, personnel management, review and development. Chief Architect of the Concentus suite of workflow products. Led

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[1] Until April 1998 Concentus Technology Corp. was a wholly-owned subsidiary of ComputerVision Inc., Boston, Massachusetts.

engagements on Concentus workflow deployments at Lockheed-Martin, Caterpillar Inc., Boeing (Rocketdyne division), MCI-WorldCom (and others). Internal project manager for the Solutions for MES-Adaptable Replicable Technology (SMART) project of the National Information Infrastructure Integration Protocols (NIIIP) consortium. The goal of this IBM-led, multi-company Government ATP-funded R&D project was to showcase the use of advanced technologies (Work-management, Business Rules, Intelligent Agents, ERP) in solving virtual enterprise (VE) problems spanning the engineering and manufacturing domains. Also developed a lightweight XML-based WfMC standards-compliant in-memory workflow engine that became one of the key deliverables of the SMART project.

- September 1989 - May 1997: Senior Systems Analyst, Knowledge Integration Center, Concentus Technology Corp. (formerly UES Inc.). Played various software development roles, including team lead on several projects.

Consulting Experience and History:

- Product development, software architecture and project management services: For a local e-commerce company providing kiosk-based e-commerce products to the underserved and unbanked market.
- Advisory Board Member services: For a local high-technology software startup specializing in augmented-reality products for the retail market.
- Advisory Board Member services: For a local high-technology software startup that provides information security services.
- Software architect services: For a local software consulting company, helped design the architecture of an engineer's workbench for the US Air Force.
- Software engineering services: For a local high-volume law firm, helped develop the architecture for their custom ERP application, provided IV&V services during development and evaluated talent to staff their application development and their IT operations.
- Advanced technology evaluation services: For an international steel processing company, evaluated the value of RFID technology.
- Expertise evaluation services: In support of H-1 and Permanent Residency applications to the Immigration and Naturalization Services.
- Expert witness services: For (a) an international parcel and package delivery company, (b) a talent management, leadership development, and sales improvement corporation providing personnel assessment and research services, (c) a state university and (d) a building temperature monitoring company.

Professional Expertise and Interests:

- Enterprise architecture, enterprise technologies, enterprise software engineering and computer science education
- Autonomic systems.
- Model-driven integration environments for service-oriented architectures.
- Wireless sensor network, mobile and pervasive computing applications in the enterprise,
- Alignment of business strategy, innovation and processes with information technology.
- E-Government, cyber-infrastructures, collaborative environments, configurable enterprise systems, workflow and work-management systems, information modeling, enterprise rules, intelligent agent, MES and ERP systems.
- Standards development in workflow, product data management and enterprise resource planning.

- Object-oriented software development and methodologies. Global enterprise system and software development.
- Innovation and entrepreneurship.

Academic Qualifications:

- Ph.D., Computer and Information Science, The Ohio State University, September 1988.
- M.S., Computer and Information Science, The Ohio State University, August 1983.
- Bachelor of Technology, Electrical Engineering, Indian Institute of Technology, New Delhi, India, 1981.

Journal Publications:

1. "Tweets can tell: activity recognition using hybrid gated recurrent neural networks", Renhao Cui, Gagan Agrawal, Rajiv Ramnath, Social Network Analysis and Mining (2020) 10:16 https://doi.org/10.1007/s13278-020-0628-0, Springer Nature, 2020.
2. "Hierarchical categorization of big content using concept topology", Andrew Yates, Daniel Dotson, Stephanie Schulte, Rajiv Ramnath, Taylor and Francis Journal of Library Metadata, 2019.
3. "Second-Grade Urban Learners: Preliminary Findings for a Computer-Assisted, Culturally Relevant, Repeated Reading Intervention", Jessica G. Bennett, Ralph Gardner III, Gwendolyn Cartledge, Rajiv Ramnath, Education and Treatment of Children, Vol. 40, No. 2, 2017.
4. "NEWPATH: An innovative program to nurture IT entrepreneurs", Soundarajan, N., Ramnath, R., Weide, B., Lee, D., Camp, M., Advances in Engineering Education's Special Issue on Entrepreneurship, 2015.
5. "Culturally Relevant Literature: What Matters Most to Primary-Age Urban Learners", Gwen Cartledge, Susan Keesey, Jessica Bennett, Rajiv Ramnath, Morris Council, Reading & Writing Quarterly, pp. 1-28 | DOI: 10.1080/10573569.2014.955225, January 2015.
6. "Effects of Culturally Relevant Materials on the Reading Performance of Second-Grade African Americans with Reading/Special Education Risk", Cartledge, G., Keesey, S., Bennett, J., Gallant, D., & Ramnath, R. *Multiple Voices*, 2015.
7. "Identifying Knowledge Brokers and Their Role in Enterprise Research through Social Media", Xu Zhe, Jayashree Ramanathan, Rajiv Ramnath, IEEE Computer, Special Issue on Collaborative Information Seeking, March 2014.
8. "VDC-Analyst: Design and verification of virtual desktop cloud resource allocations", Prasad Calyam, Sripriya Seetharam, Khaled Salah, Rajiv Ramnath, Special issue on cloud networking and communications Computer Networks, 2014.
9. "Topology-Aware Correlated Network Anomaly Event Detection and Diagnosis", Prasad Calyam, Manojprasadh Dhanapalan, Mukundan Sridharan, Ashok Krishnamurthy, Rajiv Ramnath, Springer Journal of Network and Systems Management, September 2013.
10. "VDPilot: Feasibility Study of Hosting Virtual Desktops for Classroom Labs within a Federated University System", Prasad Calyam, Alex Berryman, David Welling, Saravanan Mohan, Rajiv Ramnath, Jay Ramanathan, International Journal of Cloud Computing (IJCC), Inderscience Publications, 2013.
11. "Stakeholder Ontology and Mining for Improving Complex Services", Ramanathan, J., Ramnath, R., International Journal of Information Systems in the Service Sector, 5(2), 65-79, April-June 2013.

12. "Human-centric Composite Quality Modeling and Assessment for Virtual Desktop Clouds", Yingxiao Xu, Prasad Calyam, David Welling, Saravanan Mohan, Alex Berryman, and Rajiv Ramnath, International Journal on ZTE Communications, 2013.

13. "Simulation as a Service (SMaaS): A Cloud-Based Framework to Support the Educational Use of Scientific Software", David E. Hudak, Thomas Bitterman, Rajiv Ramnath, Prasad Calyam, Jay Ramanathan, Da Zhang, Da Cai, International Journal of Cloud Computing (IJCC), Inderscience Publications, 2013.

14. "Multi-Resolution Multimedia QoE Models for IPTV Applications", Calyam, P., Chandrasekaran, P., Trueb, G., Howes, N., Ramnath, R., Yu, D., Liu, Y., Xiong, L., Yang, D, International Journal of Digital Multimedia Broadcasting, vol. 2012, Article ID 904072, 13 pages, 2012.

15. "Utility-Directed Resource Allocation in Virtual Desktop Clouds", Calyam, P., Patali, R., Berryman, A, Lai, A. M., Ramnath, R., The International Journal of Computer and Telecommunications Networking (COMNET), July 2011.

16. "Kansei: A high-fidelity sensing testbed", Arora, A., Ertin, E., Ramnath, R., Nesterenko, M., Leal, W., Internet Computing, Special Issue on Large-Scale Sensor Networks, March 2006.

17. "Strategic Planning and Execution for Information-Technology Enabled Sense-and-Respond in Complex Public Organizations", Ramnath, R., Landsbergen, D., Communications of the ACM, special issue on Complex Adaptive Systems, 2005.

18. "Database design for real-time adaptations," Gopinath, P.S., Ramnath, R. and Schwan, K., Journal of Systems and Software, Volume 17, Issue 2, February 1992, Pages 155-167

19. "A Language and System for Parallel Programming," Schwan, K., Ramnath, R., Vasudevan S., and Ogle, D., IEEE Transactions on Software Engineering, April 1988.

Conference publications (Refereed):

1. "Accident Risk Prediction based on Heterogeneous Sparse Data: New Dataset and Insights", Sobhan Moosavi, Mohammad Hossein Samavatian, Srinivasan Parthasarathy, Radu Teodorescu and Rajiv Ramnath, 27th ACM SIGSPATIAL International Conference on Advances in Geographic Information Systems, Chicago, Illinois, 5-8 November, 2019.

2. "Tweets Can Tell: Activity Recognition using Hybrid Long Short-Term Memory Model", Renhao Cui, Gagan Agrawal, Rajiv Ramnath, 2019 IEEE/ACM International Conference on Advances in Social Networks Analysis and Mining (ASONAM), Vancouver, Canada, 27-30 August, 2019.

3. "Short and Long-term Pattern Discovery Over Large-Scale Geo-Spatiotemporal Data", Sobhan Moosavi, Mohammad Hossein Samavatian, Arnab Nandi, Srinivasan Parthasarathy and Rajiv Ramnath, KDD 2019, Anchorage, Alaska, August 2019. Best Poster Award.

4. "SmartDashCam: Automatic Live Calibration for DashCams", Gopi Krishna Tummala, Tanmoy Das, Prasun Sinha, Rajiv Ramnath, International, Conference on Information Processing in Sensor Networks (IPSN), Montreal, Canada, April 16th-18th, 2019.

5. "QDEE: Question Difficulty and Expertise Estimation in Community Question Answering Sites", Jiankai Sun, Sobhan Moosavi, Rajiv Ramnath, Srinivasan Parthasarathy, 12th International AAAI Conference On Web and Social Media (ICWSM-18), Stanford, California, June 25-28, 2018.

6. "Trajectory Annotation by Discovering Driving Patterns", S. Moosavi, B. Omidvar-Tehrani, and R. Ramnath, 3rd ACM SIGSPATIAL Workshop on Smart Cities and Urban Analytics (UrbanGIS), Los Angeles, USA, November 2017.

7. "Characterizing Driving Context from Driver Behavior", S. Moosavi, B. Omidvar-Tehrani, R. B. Craig, A. Nandi, and R. Ramnath, 25th ACM SIGSPATIAL, Los Angeles, USA, November 2017.

8. "Motivating dynamic features for resolution time estimation within IT operations management", Kayhan Moharreri, Jayashree Ramanathan, Rajiv Ramnath, Proceedings - 2016 IEEE International Conference on Big Data, Big Data 2016. 2103-2108. 02 Feb 2017.

9. "Ensemble of Heterogeneous Classifiers for Improving Automated Tweet Classification", Renhao Cui, Gagan Agrawal, Rajiv Ramnath, Vin Khuc, IEEE International Conference on Data Mining Workshops, ICDMW. 1045-1052. 30 Jan 2017.

10. "Novel Probability Based Ensemble Method for Improving Automated Tweet Classification", Renhao Cui, Gagan Agrawal, Vinh Khuc, Rajiv Ramnath, 2nd International Workshop on Data Science for Social Media and Risk, Barcelona, Spain, December 12, 2016.

11. "Vision-track: vision based indoor tracking in anchor-free regions", Gopi Krishna Tummala, Rupam Kundu, Prasun Sinha, Rajiv Ramnath, HotWireless '16 Proceedings of the 3rd Workshop on Hot Topics in Wireless, Pages 49-53, New York City, New York — October 03 - 07, 2016.

12. "Soft-swipe: enabling high-accuracy pairing of vehicles to lanes using COTS technology", Gopi Krishna Tummala, Derrick Cobb, Prasun Sinha, Rajiv Ramnath, CarSys '16 Proceedings of the First ACM International Workshop on Smart, Autonomous, and Connected Vehicular Systems and Services, Pages 62-63, New York City, New York — October 03 - 07, 2016.

13. "Probabilistic Sequence Model for Trustworthy IT Servicing by Collective Expert Networks", Kayhan Moharreri, Jayashree Ramanathan, Rajiv Ramnath, 2016 IEEE Computer Software and Applications Conference (COMPSAC), Atlanta, Georgia, USA June 10-14, 2016.

14. "Text-based Supervised Learning Models for Software Effort Estimation in Agile Environments", Kayhan Moharreri, Alhad Sapre, Jayashree Ramanathan, Rajiv Ramnath, Workshop on Quality Oriented Reuse of Software (QUORS), 2016 IEEE Computer Software and Applications Conference (COMPSAC), Atlanta, Georgia, USA June 10-14, 2016.

15. "Recommendations for Achieving Service Levels within Large-scale Resolution Service Networks", Kayhan Moharreri, Jayashree Ramanathan, Rajiv Ramnath, Compute '15: Proceedings of the 8th Annual ACM India Conference, October 2015.

16. "Towards methods for systematic research on big data", Manirupa Das, Renhao Cui, David R. Campbell, Gagan Agrawal, Rajiv Ramnath, 2015 IEEE International Conference on Big Data (BIGDATA), Oct. 29-Nov. 1, 2015.

17. "TopChurn: Maximum Entropy Churn Prediction Using Topic Models Over Heterogeneous Data Sources", Manirupa Das, Micha Elsner, Arnab Nandi, Rajiv Ramnath, World-Wide Web (WWW) Conference 2015, WebScience track, Florence, Italy, May 16th-24th 2015.

18. "Collaborative and Cooperative-Learning in Software Engineering Courses", Swaroop Joshi, Neelam Soundarajan, Rajiv Ramnath, Joint Software Engineering Education and Training (JSEET) conference, Florence, Italy, May 16th-24th 2015.

19. "Conflict-Driven Cooperative-Learning in Computing Courses", Swaroop Joshi, Neelam Soundarajan, Rajiv Ramnath, Poster Paper, ACM-SIGCSE, Kansas City, March 4th-7th, 2015.

20. "Social Network Observatory for Innovation in Enterprise-Employee Engagement", Jayashree Ramanathan, Zhe Xu, Ramiya Venkatachalam, Rajiv Ramnath, Bruce Craig, Tara Paider, 7th International IEEE Social Computing & Networking, Sydney, Australia, 3-5 December, 2014.

21. "Pulsed Doppler Radar Target Recognition Based on Micro-Doppler Signatures Using Wavelet Analysis", Vinit Kizhakkel, Rajiv Ramnath, Anish Arora, Ashok Krishnamurthy, Kenneth Parker, 2014 IEEE High Performance Extreme Computing Conference (HPEC '14) Eighteenth Annual HPEC Conference Waltham, MA., 9 - 11 September, 2014.

22. "Online Map Games – playful interaction with complex real-world issues", Ola Ahlqvist, Zhaoyi Chen, Peixuan Jiang, Rajiv Ramnath, AGILE Conference on Geographic Information Science, Castellon, Spain, June 3, 2014.

23. "Enterprise Architecture Content Model Applied to Complexity Management while Delivering IT Services", Heesung Lee, Jay Ramanathan, Benjamin Wierwille, Rajiv Ramnath, Zahid Hossain, Praveen Kumar, 11th IEEE International Conference on Services Computing, Anchorage, Alaska, June 27 - July 2, 2014.

24. "Work-in-Progress: A Novel Approach to Collaborative Learning in the Flipped Classroom", Neelam Soundarajan, Swaroop Joshi, Rajiv Ramnath, 121st ASEE Annual Conference and Exposition, June 15th-18th 2014.

25. "Managing Tiny Tasks for Efficient, Data-Parallel Subsampling", Sundeep Kambhampati, Christopher Stewart, William C.L. Stewart, Jaimie Kelley, Rajiv Ramnath, 2nd IEEE Conference on Cloud Engineering (IC2E 2014), 2014.

26. "A Synergistic Framework for Geographic Question Answering", Chen, W., Fosler-Lussier, E., Xiao, N., Raje, S., Ramnath, R., Sui, D., 7th IEEE International Conference on Semantic Computing (ICSC), September 2013.

27. "An Agile Translation Process for Complex Innovations: an Industry/University Cooperative Research Center Case Study", Ramanathan, J., Ramnath, R., Herold, M., Wierwille, B., Frontiers in Education Conference (FIE 2013), October 2013.

28. "Innovation-Directed Experiential Learning Using Service Blueprints", Ramanathan, J., Ramnath, R., Herold, M., Wierwille, B., Frontiers in Education Conference (FIE 2013), October 2013.

29. "OnTimeSecure: Secure Middleware for Federated Network Performance Monitoring", Calyam, P., Kulkarni, S., Berryman, A., Zhu, K., Sridharan, M., Ramnath, R., Springer, G., IEEE Conf. on Network and Service Management (CNSM) (Short Paper), 2013.

30. "Impact Driven Regression Test Selection for Mainframes", Dharmapurikar, A., Wierwille, B., Ramanathan, J., Ramnath, R., 1st International Workshop in Software Evolution and Modernization - SEM 2013, July, 2013 - Angers, France, 2013.

31. "A multi-pronged approach to nurturing IT entrepreneurs", Soundarajan, N., Ramnath, R., Weide, B., Camp, M., 120th ASEE Annual Conference and Education, June 23-26, Atlanta, Georgia, 2013.

32. "Assisted Human-in-the-Loop Adaptation of Web Pages for Mobile Devices", Wei, C., Lee, H., Ramnath, R., Ramanathan, J., short paper, IEEE Computer Software and Applications Conference (COMPSAC), Kyoto, Japan, July 16-20, 2013.

33. "Implementation Considerations in Enabling Visually Impaired Musicians to Read Sheet Music Using a Tablet", Lynch, T., Housley, L., Ramnath, R., Ramanathan, J., short paper,

IEEE Computer Software and Applications Conference (COMPSAC), Kyoto, Japan, July 16-20, 2013.

34. "Online Map Games – Playful Interaction with Geographical Science Tools" Ahlqvist, O., Benkar, R., Ramnath, R., Vatev, K., Heckler, A., Mikula, B., Games+Learning+Society Conference 9.0, Madison, Wisconsin, June, 2013.

35. *"GeoGame: An Online Geography Game for Learning about the Green Revolution"*, Mikula, B., Heckler, A, Ahlqvist, O., Benkar, R., Ramnath, R, Vatev, K., Poster Paper, Games+Learning+Society Conference 2013, Memorial Union, Madison, Wisconsin, June, 2013.

36. "Leveraging OpenFlow for Resource Placement of Virtual Desktop Cloud Applications", Calyam, P., Rajagopalan, S., Selvadhurai, A., Mohan, S., Venkataraman, A., Berryman, A., Ramnath, R., IFIP/IEEE International Symposium on Integrated Network Management, Ghent, Belgium, May 2013.

37. "Applying Software Product Line Engineering in Building Web Portals for Supercomputing Services," Diwan, P., Carey, P., Franz, E., Li, Y., Bitterman, T., Hudak, D., Ramnath, R, 28th ACM Symposium On Applied Computing (SAC) 2013, Coimbra, Portugal, March 2013.

38. "Human-Matcher-in-the-Loop Model for Facilitating Future Collaborations," Xu, Z., Ramanathan, J., Ramnath, R., 2nd International Conference on Computer and Software Modeling (ICCSM 2012), October 21-22, Cochin, India, October 2012.

39. "Student and Instructor Experiences in the Inverted Classroom", Herold, M., Lynch, T., Ramnath, R., Ramanathan, J., Frontiers in Education Conference (FIE 2012), Seattle, Washington, October 2012.

40. "Using Semantic Web Technologies for RBAC in Project Oriented Environments", Raje, S., Davuluri, C., Freitas, M., Ramnath, R., Ramanathan, J., IEEE Computer Software and Applications Conference (COMPSAC), July 16-20, Izmir, Turkey, 2012.

41. "Implementation and Evaluation of Commodity Hardware and Software in an Open World Spoken Dialog Framework", Manuru, M., Sasidharan, A., Vasudevan, R., Lynch, T., Darbyshire, S., Ramnath, R., Ramanathan, J., Poster Paper, IEEE Computer Software and Applications Conference (COMPSAC), July 16-20, Izmir, Turkey, 2012.

42. "Simulation as a Service: A Cloud-Based Framework to Support the Educational Use of Scientific Software", David E. Hudak, Thomas Bitterman, Rajiv Ramnath, Prasad Calyam, Jay Ramanathan, Da Zhang, Da Cai, 1st International IBM Cloud Academy Conference, ICA CON 2012, Research Triangle Park, North Carolina, USA, April 19-20, 2012. (extended and submitted by invitation to the International Journal of Cloud Computing)

43. "Feasibility Study of Hosting Virtual Desktops for Classroom Labs within a Federated University System", Prasad Calyam, Alex Berryman, David Welling, Saravanan Mohan, Rajiv Ramnath, Jay Ramanathan, 1st International IBM Cloud Academy Conference, ICA CON 2012, Research Triangle Park, North Carolina, USA, April 19-20, 2012. (extended and submitted by invitation to the International Journal of Cloud Computing)

44. "Examining the Practical Challenges of an Augmented Reality Cyber-Infrastructure Framework", Wei, C., Wang, C, Ramnath, R., Ramanathan, J., 27th Symposium On Applied Computing, Riva del Garda (Trento), Italy, March 26-30, 2012.

45. "Towards Building Large-Scale Distributed Systems for Twitter Sentiment Analysis", Khuc, V., Shivade, C., Ramnath R., and Ramanathan, J., 27th Symposium On Applied Computing, Riva del Garda (Trento), Italy, March 26-30, 2012.

46. "Using Ontology-Based Methods for Implementing Role-Based Access Control in Cooperative Systems", Raje, S., Davuluri, C., Freitas, M., Ramnath, R., Ramanathan, J., Poster Paper, 27th Symposium On Applied Computing, Riva del Garda (Trento), Italy, March 26-30, 2012.

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22. "ACE Student Tracker", Ma, C., lead advisor: Furrukh Khan, June 2011.
23. "Utility-Directed Resource Allocation in Virtual Desktop Clouds", Patali, R., lead-advisor: Prasad Calyam, co-advisor: Gagan Agrawal, June 2011.
24. "Knowledge-Based Performance Management Framework", Datta, R., lead advisor: Ramanathan, J., December 2010.
25. "A Shared Vocabulary for Efficient decision making for Software Development Organizations", Nagarajan, P., lead advisor: Ramanathan, J., co-advisor: Parthasarathy, S., August 2010.

26. "Agility Performance Framework for Education and Quicker Adoption," Harbhajanka, V., co-advisors: Ramanathan, J., Sivilotti. P., June 2010.
27. "Exploring a Framework for Goal-Driven Collaboration through Serious Gaming," Loffing, T., lead advisor: Ramanathan, J., Ahlqvist, O., June 2010.
28. "Sense Respond Environment for Adaptive Participatory Services," Singh, N., lead advisor: Ramanathan, J., Ahlqvist, O., June 2010.
29. "Collaborative Spaces for Increased Traceability in Knowledge-Intensive Document-Based Processes", Masters' Thesis, Horvath, G., lead advisor: Ramanathan, J., co-advisor: Weide, B., August 2009
30. "Business-IT Traceability for Complex System Improvement," Masters' Thesis, Mukri F., lead advisor: Ramanathan, J., co-advisor: Desai, A., August 2009

Masters Projects Advised and Co-advised:

1. "Maintenance Invoice Decision Support System", Breckenridge, D., lead advisor Jeremy Morris, May 2020.
2. "Intent Identification and Slot-Filling, Focal Map Upload Tool", Mathiazhagan, S., co-Advisor David Ogle, May 2020.
3. "Sensor Integration into Web Application", Deo, A., lead advisor Thomas Bihari.
4. "Email Virtual Assistant", Chattopadhyay, M., co-advisor David Ogle, May 2020.
5. "CETI Commons Infrastructure", Sharma, A., co-advisor Thomas Bihari, May 2020.
6. "Fleet Lifecycle Cost and Parts Prediction using Machine Learning", Kumar, M., ECE, co-advisor Thomas Bihari. May 2020.
7. "Intent Detection And Slot Filling", Pujar, K., co-advisor Thomas Bihari May 2020.
8. "Klarite Application", lead advisor Leon Madrid, May 2020.
9. "Deployment of CETI Infrastructure–A High Performance Computing Cluster", Achyutha Rami Reddy, co-advisor Thomas Bihari, May 2020.
10. "Automatic Medical Reimbursement Adjudication", Zhou, M., co-advisor David Ogle, April 2019.
11. "Photo Damage Assessment", Joshi, A., co-advisor David Ogle, May 2019.
12. "Reading RACES: A browser enabled Speech Recognizer meant to help kids improve their reading skills", Burujapalli, L., co-advisor Jeremy Morris, May 2019.
13. "Paraphrase Generation of Commercial Tweets", Sunil, S., co-advisor Gagan Agrawal, May 2019.
14. "Survival Analysis – Annuity Profitability", Thoom, S., co-advisor, David Ogle, April 2019.
15. "Application of Deep Learning Providing Decision Support to Aircraft Maintenance", Saraf, M., co-advisor David Ogle, May 2019.
16. "Application of Machine Learning to perform Task Standardization", Modi, S., co-advisor David Ogle, May 2019.
17. "Traffic Incident Visualization" Mingxin Lu, co-advisor David Ogle, May, 2019.
18. "SANG Project", Devi Mithra Jainendra Kumar, advisor David Ogle, December 2018.
19. "SANG Project", Yihang Du, advisor David Ogle, December 2018.
20. "School2Biz: A Social Network for Educators and the Community", Campbell, D., co-adviser: Jeremy Morris, May 2016.
21. "Scheduling Optimizer", Narasimhan, J., co-adviser: Jeremy Morris, January 2016.
22. "Service Metrics Generation for the Office of the CIO", Srikanth, A. co-advisers Jayashree Ramanathan, Paul Sivilotti, Janette Ashcraft, December 2015.
23. "Geogame function extension design and Implementation", Jiang, P. adviser: Ola Ahqvist, December 2015.

24. "System Dynamics Model for Medicaid Eligibility Evaluation", Shah, G. advisor: Anand Desai, May 2015.
25. "Study and Analysis of Modeling Techniques", Chandra, Jigar, advisor: Anand Desai, May 2015.
26. "OPD Web Portal", Sonawane, Abhang, co-advisor: Jay Ramanathan, sponsor: John Thomas, May 2015.
27. "OARnet Internal Management Tools", Kuriakose, Ajay, supervisor: Mark Fullmer, committee member: Gagan Agrawal, May 2015.
28. "Geogame Water Model and Student Testing", Tantri, Aneesh, committee member: Gagan Agrawal, sponsor: Ola Ahlqvist May 2015.
29. "SoberTool Android Application", Krishnamurthy, Aneeth, committee member: Gagan Agrawal, project sponsor: Paul Caimi, May 2015.
30. "NoAlert", Ganesh, Asvin Vaidyanathan, committee member: Gagan Agrawal, May 2015.
31. "Application Error Reporting with Incident Management Framework", Jeyaram, Bhilanan, co-advisor: Jay Ramanathan, May 2015.
32. "Demographics of Twitter Users using First-Name Priors", DaSilva, Cajetan, co-advisor: Jay Ramanathan, supervisors: Luke Molnar, Vinh Khuc, May 2015.
33. "CONSIDER in GeoGame", Karan Tilak Kumar, co-advisor: Neelam Soundarajan, May 2015.
34. "AIML Based Chatbot as a Service in Android", Sundarajan, Mukundan, co-advisor: Jay Ramanathan, May 2015.
35. "Persuasion API", Nagarithnam, Naveenraj, co-advisor: Jay Ramanathan, May 2015.
36. "Geogame Data Analytics as a prerequisite for ABM",,Khodke, Nayan, co-advisor: Ola Ahlqvist, committee member: Gagan Agrawal, May 2015.
37. "Persuasive Recommendation Engine", Choudhary, Neha, co-advisor: Jay Ramanathan, May 2015.
38. "PEV Communication Infrastructure Standards", Dasari, Raghuram, supervisor: B.J. Yurkovich, co-advisor: Jay Ramanathan, May 2015.
39. "Classifier Based Defect Prediction Using Defect and Log Data", Dorairaj, Sham Sunder, supervisor: N.B. Murthy, co-advisor: Jay Ramanathan, May 2015.
40. "Designing a Scalable Containerized Architecture for the Open Access Corpus", Agarwal, Shashank, co-advisor: Jay Ramanathan, May 2015.
41. "Utility Meter Reader Android Application", Sreethar, Sreeram, committee member: Gagan Agrawal, May 2015.
42. "Cube4 Software for ACA and IRS", Shankar, Swapna, co-advisor: Jay Ramanathan, project sponsor: Louise Stonehouse, May 2015.
43. "Comparing two .NET projects with respect to configurability", Chen, Zhaoyi, co-advisor: Jay Ramanathan, May 2014.
44. "Extracting and Visualizing Code Complexity on Enterprise Applications", Ye, S., co-advisor: Jay Ramanathan, supervisor: N.B. Murthy, May 2014.
45. "Registry of Organic Operations Tracking System", Li, H., co-advisor: Jay Ramanathan, May 2014.
46. "Unique Words Analysis based on LDA model", Qiu, X., advisor: Chris Stewart, May 2014.
47. "Implementation of a GIS-based Geographic Question Answering System", Chen, W., co-advisors: Jay Ramanathan, Ningchuan Chao, December 2013.

48. "Automatic Mapping of EDI documents", Singh, A., co-advisor: Jay Ramanathan, May 2013.
49. "Drupal Portal Development at the Ohio Supercomputer Center", Li, Y., co-advisors Thomas Bitterman, Jay Ramanathan, May 2013.
50. "Software Instrumentation for Speech Applications", Srivathsan, A., co-advisor, Jay Ramanathan, May 2013.
51. "Analysis of software development practices followed in some of the projects that I have been part of", Navaneethakrishnan, K., co-advisor: Jay Ramanathan, May 2013.
52. "Intelligent Dashboard for Network Performance Monitoring and Diagnosis", Tayal, C., lead advisor: Prasad Calyam, co-advisor: Jay Ramanathan, May 2013.
53. "Master Genome Tracking System", Xie, R., co-advisor: Jay Ramanathan, May 2013.
54. "Typing Tutor Application Project Report", Lu, Y., co-advisor: Jay Ramanathan, May 2013.
55. "Drupal Portal Development at the Ohio Supercomputer Center", Li, Yixue, co-advisors: David Hudak, Thomas Bitterman, Jay Ramanathan. May 2013.
56. "Project Report: Using Openflow To Adaptively Manage Network Traffic In A Wide-Area Open-Access Network", Dodalingappa-Nagarathna, P., lead advisor: Prasad Calyam, co-advisor: Jay Ramanathan, May 2013.
57. "Where to Eat: Location-Based Mobile App for Android Platform", Zhao, G., co-advisor: Steven Bibyk, May 2013.
58. "Multi-touch Gesture Recognition", Gunturi, A., co-advisor: Steven Bibyk, Spring 2013.
59. "An Image Analysis of Indoor Self-Localization", Palaniswamy, B., co-advisor: Jay Ramanathan, December, 2012.
60. "Project Report: A Detailed Summary of Projects Done at The Ohio State University Health Plan Inc. (OSUHP)", Patil, R., December 2012.
61. "Project Report: Memory Access Characterization of TinyOS Applications on TOSSIM", Rudramuni, C, co-advisor: Anish Arora, co-advisor: Jay Ramanathan, December 2012.
62. "Openflow Controller Design and Implementation", Zhang, D., lead advisor: Prasad Calyam, co-advisor: Jay Ramanathan, December 2012.
63. "FSS Cash Reconciliation System Enhancement Project", Surana, A., June 2012.
64. "PFast Secondary Development and its Application", Wang, M., lead advisor: Irani, S., June 2012.
65. "Low-Cost Targeting System", Chima, K., co-advisor: Jay Ramanathan, Spring 2012.
66. "3D Gesture Recognition using Hidden Markov Models", Manuru, H, lead advisor: Bibyk, S., March 2012.
67. "Face Recognition For An Open World Spoken Dialog System", Vasudevan, R, lead advisor: Bibyk, S., March 2012.
68. "Person tracking using Kalman Filtering", Sasidharan, A., lead advisor: Bibyk, S., March 2012.

Undergraduate Honors Theses Advised and Co-Advised:
1. "Relational Databases and SQL", Shen, J., co-advisor Thomas Bihari, May 2020.
2. "The Development and Effect of Serious Games", Burl, D., co-advisor Ramanathan, J., May 2013.
3. "Connecting People and Events: Multi-Modal Routing and Dynamic User-Generated Content", Chawla, P., lead advisor Sivilotti, P., June 2009.
4. "Song Identification Using the Numenta Platform for Intelligent Computing," Schey, N., co-advisor Belkin, M., May 2008.

5. "A Mobile Real Time Data Collection and Analysis System for Farm Management," Larusso, N., co-advisor Boyles, S., May 2006

Technical Reports:

1. "Human Computation Recommender for Inter-Enterprise Data Sharing and ETL Processes", Michael J. Herold, Satyajeet Raje, Jay Ramanathan, Rajiv Ramnath, and Zhe Xu, OSU-CISRC-5/12-TR08
2. "Agent-managed Interaction Recommendation for Effective Large-Scale Collaboration", Xu Zhe, Jay Ramanathan, Rajiv Ramnath, OSU-CISRC-5/12-TR07
3. "Deriving Service Principles Relating Lean in-the-large Systems to Autonomous in-the-small Entities," Jay Ramanathan, Rajiv Ramnath, and Randall Glassgow, 13 pp. OSU-CISRC-5/07-TR37.
4. "Practice Relevant Pedagogy for Mining Software Engineering Curricula Assets," Rajiv Ramnath, Jay Ramanathan, and Umesh Bellur, 25 pp. OSU-CISRC-5/07-TR36.
5. "Using the NFR Framework in the context of the Balanced Scorecard: The Strategic Engineering of Public IT," Rajiv Ramnath, Anand Desai, Paul Carlson, 7 pp. OSU-CISRC- 11/06-TR78. Electronic report under 2006/TR78.pdf OSU-CISRC-11/06--TR78
6. "Enterprise Capacity Management -- Assessment of Related Best Practices and Research", Jay Ramanathan, Rajiv Ramnath, Chris Newland, John Northland, Jason McKitrick, Aaron C. Roberts, Brett Gerke, Joe Bolinger, and John Pan.. Sponsored by Nationwide Insurance. 29 pp. ed. Columbus. (Report No. OSU-CISRC-5/07-TR38, Jan 2007). ftp://ftp.cse.ohio-state.edu/pub/tech-report/2007/TR38.pdf. (Published).
7. "Using XML as a Work Management command language," Rajiv Ramnath, Charles E. Meier and Venugopal Vasudevan, Concentus Technical Report and SBIR Phase 1 Proposal to the National Institute of Standards, January 1999.
8. "Work Fabrics – Matching and Managing Vendors and Suppliers in Internet-based E-Commerce," Rajiv Ramnath, Charles E. Meier and Venugopal Vasudevan – Concentus Technical Report and Proposal for the 1999 NIST ATP Competition, February 1999.
9. "Using an Active Database to Integrate a Parallel Programming Environment," Rajiv Ramnath, Karsten Schwan, OSU Technical Report, OSU-CISRC-5/88-TR16, 1988.

Courses Taught:

1. Requirements Analysis: Information systems analysis; object-oriented analysis models and tools; use cases, system modeling using UML; requirements specification development; term project. Also course coordinator.
2. Distributed Enterprise Computing: Course description: Characteristics, and functional and non-functional requirements of large-scale enterprise systems. The technologies used in enterprise systems. Application of XML toolkits, AJAX, Enterprise Java (Enterprise Java Beans, Java Server Faces and Java Server Pages), the Google Web Toolkit and the Enterprise Services Bus, to build elements of an enterprise scale application. Also course coordinator.
3. Mobile Application Development: Course description: Mobile application development frameworks; Architecture, design and engineering issues, techniques, and methodologies for mobile application development. Also course coordinator.
4. Research Topics in Enterprise Architectures and Systems and CETI Colloquium.
5. Systems Software: This is the "keystone" course in the CSE undergraduate program. Learning outcomes are an understanding of (a) systems software, (b) software design, implementation and testing (c) team-working (d) professional writing. 2002-2005.
6. Software Engineering: Learning outcomes are: understanding of frameworks – i.e. tools, techniques and processes for (a) the business context of enterprise software engineering (b) the software development lifecycle, (c) enterprise software architecture (d) software project

management (e) enterprise software design, (f) infrastructure management of enterprise systems. Also course coordinator.

7. Software Engineering Capstone: Students applied the tools and techniques learned in their CSE program in the context of an industry-sponsored enterprise-scale project.

Research and Development Projects (note: some projects span multiple years):

2015:

1. Sentosa Tech, Utoqa: Research in persuasive systems. Team: Naveenraj, Nagarithnam, Neha Choudhary, Rajiv Ramnath.
2. OCLC: Indexing and ranking open-access journals. Team: Shashank Agrawal, Andrew Yates, Manirupa Das, Rajiv Ramnath.
3. Institute of Education Sciences: Computer-aided reduction of special education/reading risk through a voice-recognition-based oral reading fluency intervention for urban learners. Team: Tom Lynch, Jessica Bennett, Morris Council, DeLayna Green, Gwendolyn Cartledge, Ralph Gardner, Rajiv Ramnath.
4. Columbus Dispatch: Data driven trend and demand analysis from server logs and clickstream data. Team: Manirupa Das, Arnab Nandi, Rajiv Ramnath.
5. Astute Technologies: Research in Data Mining and Information Retrieval. Team: Renhao Cui, Gagan Agrawal, Rajiv Ramnath
6. Honda: Bluetooth-based positioning system, Team: Gopi Tummalla, Derrick Cobb (Honda), Prasun Sinha, Rajiv Ramnath
7. EdGeo, Vector Arithmetic STEM Apps. Team: Brendon Mikula, Krishna Tumalapalli, Sivashankari Ganesan, Niveda Kalaiselvan, Ajay Kuriakose, Dean Cristol, Andrew Heckler, Rajiv Ramnath.

2014:

1. OCLC: Indexing and ranking open-access journals. Team: Andrew Yates, Shashank Agrawal, Ravi Kumar, Rajiv Ramnath.
2. Columbus Dispatch: Data driven trend and demand analysis from server logs and clickstream data. Team: Manirupa Das, Arnab Nandi, Rajiv Ramnath.
3. Institute of Education Sciences: Computer-aided reduction of special education/reading risk through a voice-recognition-based oral reading fluency intervention for urban learners. Team: Tom Lynch, Jessica Bennett, Morris Council, DeLayna Green, Gwendolyn Cartledge, Ralph Gardner, Rajiv Ramnath.
4. US Army: Web-based applications for STI prevention education delivery methods for military women. Team: Zhaoyi Chen, Maria Palazzi, Victoria vonSadowski, Rajiv Ramnath.
5. National Science Foundation: GeoGame, an online gaming environment for raising student awareness in geography. Team: Zhaoyi Chen, Brendon Mikula, Peixuan Chen, James Baginski, Ola Ahlqvist, Andrew Heckler, Rajiv Ramnath.
6. EdGeo, Vector Arithmetic STEM Apps. Team: Brendon Mikula, Krishna Tumalapalli, Sivashankari Ganesan, Niveda Kalaiselvan, Ajay Kuriakose, Dean Cristol, Andrew Heckler, Rajiv Ramnath.
7. Minimally invasive indoor location. Team: Branai Ramu, Sham Dorairaj, Rajiv Ramnath.

2013:

1. Institute of Education Sciences: Computer-aided reduction of special education/reading risk through a voice-recognition-based oral reading fluency intervention for urban learners. Team: Tom Lynch, Atreya Srivathsan, Jessica Bennett, Gwendolyn Cartledge, Rajiv Ramnath.

2. Ohio Department of Health: Apps for Asthma: Persuasive mobile applications for asthma prevention in young adults, Team: Hyunjeong Yoo, Heesung Lee, Aditya Prabhune, Michael Herold, Rajiv Ramnath.
3. US Army: Web-based applications for STI prevention education delivery methods for military women. Team: Saranyadevi Ganesan, Michael Herold, Rajiv Ramnath.
4. National Science Foundation: GeoGame, an online gaming environment for raising student awareness in geography. Team: Ola Ahlqvist, Andrew Heckler, Kathryn Plank (2011-2012), Rohan Benkar, Kiril Vatev, Rajiv Ramnath.
5. Yale University: HeartStudy: a survey- and data-analysis system to study recovery and other outcomes from cardiac arrest events. Team: Rajiv Ramnath.
6. MicroIndustries Inc.: Framework for gesture-based applications. Team: Aditi Singhal, Anoop Gunturi, Thomas Lynch, Steve Bibyk, Rajiv Ramnath.
7. Ohio Supercomputer Center: Integrated architecture for rapid portal development and rollout. Team: David Hudak, Thomas Bitterman, Yixue Li, Piyush Dewan, Rajiv Ramnath.
8. Samraksh Inc.: Analysis of Flash-based memory models for resource-constrained devices. Team: Ananth Mahadevan Muralidharan, Rajiv Ramnath.
9. Samraksh Inc.: Using wavelet transform based micro-Doppler signal processing for object recognition. Team: Vinit Kizhakkel, Rajiv Ramnath.
10. OCLC: Automating library inventory management using multi-modal techniques - image-processing, optical character recognition and information retrieval techniaues. Team: Sudheer Tumu, Rajiv Ramnath.

2012:
1. Samraksh Inc.: Analysis of Flash-based memory models for resource-constrained devices. Team: Ananth Mahadevan Muralidharan, Chethan Rudramuni, Rajiv Ramnath.
2. Samraksh Inc.: Using wavelet transform based micro-Doppler signal processing for object recognition. Team: Vinit Kizhakkel, Rajiv Ramnath.
3. Institute of Education Sciences: Computer-aided reduction of special education/reading risk through a voice-recognition-based oral reading fluency intervention for urban learners. Team: Tom Lynch, Atreya Srivathsan, Gwendolyn Cartledge, Rajiv Ramnath.
4. Ohio Department of Health: Persuasive mobile applications for asthma prevention in young adults, Team: Heesung Lee, Aditya Prabhune, Michael Herold.
5. US Army: Web-based applications for STI prevention education delivery methods for military women. Team: Saranyadevi Ganesan, Michael Herold.
6. Nationwide Insurance: Effective Agile development practices, Team: Rachit Sood, Abhijit Shirke, Ritu Singh, Alhad Sapre, Jay Ramanathan, Rajiv Ramnath.
7. JPMorgan Chase: Enterprise Architecture Evaluation of High-Transaction Systems: Subha Balaraman, Rajiv Ramnath.
8. Institute for Sensing Systems, The Ohio State University: iBrutus, and open-world, spoken dialog system. Team: Thomas Lynch, Hareendra Manuru, Ashok Sasidharan, Rajagopal Vasudevan, Seth Darbyshire, Rajiv Ramnath.
9. The Ohio State University Office of Student Life: SHIFT, a P4 Wellness application for college campuses. Team: Michael Herold, Shweta Kulkarni, Saranya Devi, Rajiv Ramnath. Project terminated after initiation phase.
10. National Science Foundation: GeoGame, an online gaming environment for raising student awareness in geography. Team: Ola Ahlqvist, Kathryn Plank, Andrew Heckler, Rohan Benkar, Kiril Vatev, Rajiv Ramnath.

11. Yale University: HeartStudy: a survey- and data-analysis system to study recovery and other outcomes from cardiac arrest events. Team: Jithendra Rangaraj, Thomas Lynch, Abhijit Shirke, Rajiv Ramnath.
12. Tony Wells Foundation: SeeSharp, a music player for musicians with visual impairments. Team: Peter Rogers, Carrie Phllips, Laura Housley, Rajiv Ramnath.
13. OSU Medical Center: Portals for semantic search. Team: Po-Yin Yang, Omkar Lele, Ankush Srivastava, Satyajeet Raje, Jay Ramanathan, Rajiv Ramnath.
14. Ohio Supercomputer Center: Integrated architecture for rapid portal development and rollout. Team: David Hudak, Thomas Bitterman, Da Zhang, Da Cai, Yixue Li, Piyush Dewan, Rajiv Ramnath.
15. Ohio Supercomputer Center: Monitoring, management and resource allocation for clouds. Team: Aishwarya Venkatraman, Manojprasadh Dhanapalan, Prasad Calyam, Rajiv Ramnath.
16. NSF GENI: BAK-PAK, sensor based educational toolkits for STEM. Team: Anish Arora, Michael McGrath, Wenjie Zeng, Rajiv Ramnath.

2011:
1. Institute for Sensing Systems, The Ohio State University: iShoe, an integrated suite of mobile applications for an enhanced stadium experience. Team: Thomas Lynch, Chris Dean, Arathi Mani, Brian Alberta, Adam Zink, Rajiv Ramnath.
2. Ohio Board of Regents: Mobile eReader and browser for subjects with visual impairments. Team: Carolyn Sommerich, Sanghyun Park, Steve Jacobs (IDEAL Group), Hyunjeong Yoo, Christopher Fenner.
3. Samraksh Inc.: Implementing the .NET micro-framework on a sensor platform, tools for integration of sensor platforms with the cloud. Team: Nived Sivadas, Karthik Natarajan, Rajiv Ramnath.
4. Ohio Supercomputer Center: Integrated architecture for rapid portal development and rollout. Team: David Hudak, Thomas Bitterman, Changpil Lee, Arun Chockalingam, Rajiv Ramnath.
5. TechColumbus,1492 Program: myLee, integrated calendaring. Team: Joe Bolinger, Shweta Deshpande, Rajiv Ramnath.

2010:
1. Nationwide Insurance: Enterprise Architecture Evaluation for Document Management. Team: Rajiv Ramnath, Jay Ramanathan, Jaspreet Oberoi, Shweta Deshpande, Anand Bernard-Selvaraj.
2. Abercrombie and Fitch Inc., The Gap Inc. and Thoughtworks Inc.: Projects around deployment of Agile practices within organizations, Agile education and training. Team: Rajiv Ramnath, Jay Ramanathan, Aman Kumar, Oleg Mischenko, Vineet Harbhajanka.
3. Ohio Department of Job and Family Services, Enterprise and Organizational Architecture Evaluation. Team: Rajiv Ramnath, Jay Ramanathan, Praveen Nagarajan, Roshni Datta.
4. Brulant Inc.: Portable application development for Smartphones. Team: Jay Ramanathan, Rajiv Ramnath, Neeraj Gupta, Yuri Shelke, Avijeet Sahoo.
5. Strategic Thinking Industries: Developing customized integration of health care services using an enterprise service bus. Team: Rajiv Ramnath, Jay Ramanathan, Ketaki Koppal, Rahul Mukhedkar.
6. Business Higher Education Forum, Systems Dynamic Framework for STEM education. Team: Jay Ramanathan, Rajiv Ramnath, Shubhanan Deshpande, Joseph Fiksel, Kathy Sullivan.
7. Ohio Department of Health: Evaluation of Pandemic Flu contingency plans and training, Rajiv Ramnath, Anand Desai

8. Nationwide Insurance, the Ohio Supercomputer Center and OSU Office of Information Technology: Green Data Centers. Team: Rajiv Ramnath, Jay Ramanathan, Ralston DaSilva, Michael Green, Rajesh Nandagiri.
9. City of Columbus: E-Government Portal Systems Analysis Framework, Jay Ramanathan, Ola Ahlqvist, Rajiv Ramnath, Kelly Yackovich, Vasudha Gupta, Farha Mukri, Shubhanan Deshpande, Thomas Loffing.

2009:
1. TDCI Inc.: Hybrid configuration. Rajiv Ramnath, Jay Ramanathan, Vasudha Gupta, Nisheet Singh

2008:
1. Nationwide Insurance: Framework for evaluating collaborative technologies. Team: Jay Ramanathan, Rajiv Ramnath, Joe Bolinger, and Gregory Horvath.
2. OSC: Effective software development processes for supercomputing cyberinfrastructures. Team: Rajiv Ramnath, Tom Lynch.
3. Ecelucom: Evaluating software and organizational architecture using ATAM and ACE. Team: Rajiv Ramnath, Farha Mukri, Aman Kumar.
4. Ontology Works Inc., and Matt Wald Consulting: Commercialization evaluation of ontology-based information retrieval technology. Team: Jay Ramanathan, Rajiv Ramnath, Joe Bolinger.
5. SID: Re-architecture of the Ohio State University Course Integration Platform. Team: Rajiv Ramnath, Aaron Roberts, Kelly Yackovich.

2007:
1. City of Columbus: Evaluation for the Department of Justice of the City's 3-1-1 system for use in crises-management situations. Team: Rajiv Ramnath, Anand Desai, Jay Ramanathan.
2. McGraw-Hill Education: Enterprise Architecture Pattern Mining. Team: Jay Ramanathan, Rajiv Ramnath, Joe Bolinger, Jared Zelek.

2006:
1. City of Columbus: Independent Validation and Verification of the City's 3-1-1 architecture. Team: Rajiv Ramnath, Yevgeniy Razevayev, John Coursen.

2005:
1. DARPA: Deployment and experimentation with the ExScal extreme-scale sensor network. Anish Arora, Rajiv Ramnath, 15 students.
2. Kansei: Development and deployment of the Kansei testbed for sensing at scale.

2004:
1. City of Columbus, Department of Technology, Information Technology Strategic Plan. Team: Rajiv Ramnath, Jay Ramanathan.
2. Central Ohio Transit Authority, Services Architecture Validation. Team: Rajiv Ramnath, Bettina Bair.

2003:
1. Migration Technologies, Legacy to three-tier migration.. Team: Rajiv Ramnath, Brian Adams, Rameez Rana.

Software Systems Implemented:
- 2013: GeoGame: Geogame is a .NET based cyber-game for teaching spatial and geographical concepts.
- 2013: SMART: SMART is a.NET-based framework for storyboard-like web education applications. SMART is currently being used to deliver behavioral education to women in the U.S. military.

- 2013: Apps for Asthma: Apps for Asthma is a cross-platform Titanium-based framework for health-related mobile applications.
- 2013: GeoGame: GeoGame is a web-based geospatial educational game framework for developing on-line games that have a Geography focus.
- 2012: SeeSharp: SeeSharp is an Android music reader application for visually impaired musicians.
- 2010: iShoe: iShoe is an stadium-centric "infotainment" iPhone as well as web application.
- 2009: MetaDB: MetaDB is a J2EE-based system for metadata based data management. The first release of MetaDB (implemented through a Masters' Thesis project) provides tag-based meta-data specification, and role-based access control. 2010.
- 2007: Ignis: Ignis is an Eclipse-based agent-based simulation framework. The first release of Ignis (implemented through a Masters' Thesis project) provides an agent and event framework, mobility models and simple visualization capabilities. 2007.
- 2007: Psife: Psife is an Eclipse-based environment for integrating manufacturing-planning and optimization tools. The first release of Psife (implemented through a Masters' Thesis project) provides an integrating offering of the PFAST suite of facility planning tools. 2006.
- 2006: Kansei: Kansei is an indoor sensor-network testbed consisting of multiple mote-scale devices and gateway devices, and provides an infrastructure for at-scale experimentation on sensor networks. It was initially conceived to test the middleware services for the Tier-2 network of the Extreme Scale (ExScal) project funded by DARPA.
- 1999: JD150: JD150 was developed for Concentus Technology Corp. as part of the NIIIP initiative (see above). JD150 is an XML-based lightweight WfMC standards-compliant workflow engine. JD150 has a footprint less than 50KB and is designed to be a workflow engine embeddable in pervasive devices. JD150 is also jointly licensed by IBM Corp. (also as part of the NIIIP Consortium) and supported a set of workflow applications for the chip-manufacturing and shipbuilding industries. 2001.
- 1998: WorkBridge: WorkBridge was developed for Concentus Technology Corp. as part of its workflow product suite. WorkBridge is layered on the MetaExpress workflow engine (see below) and extended MetaExpress to provide (a) a CORBA-compliant OMG standards-compliant workflow toolkit and (b) a Web-based workflow application. 1998.
- 1996: MetaExpress: MetaExpress was developed for Concentus Technology Corp. as part of its workflow product suite, and jointly licensed as Optegra Workflow to ComputerVision Inc. as part of their Optegra suite of engineering support products. MetaExpress consists of an extensible workflow engine and a general-purpose client-server workflow application. 1996.
- 1989: KI-Shell: KI Shell was developed for UES Inc. as an engineering workflow framework. Major KI Shell deployments were at Washington Mutual Bank ($1.2M in license revenue), Caterpillar Inc. ($600,000 in license revenue). 1990.

External Funding:
1. 2020-2021: NSF-EAGER: Bridging the last mile; Towards an assistive cyberinfrastructure for accelerating computationally driven science, 01/01/2020 - 12/31/2021, PI: Ramnath, co-PI: Jian Chen, Bryan Carstens, $299,687.
2. 2020-2020: NSF-SHF: Small: Techniques and frameworks for exploiting recent SIMD architectural advances, 07/01/2015- 06/30/2020, PI: Ramnath, $449,999 (took over as PI from Dr. Gagan Agrawal).
3. 2020-2020: Astute Solutions, Information retrieval techniques for social customer relationship management (CRM) systems, 01/01/2020- 12/31/2020, PI: Ramnath, $127,143.

4. 2019-2024: NSF-NRT-HDR: Convergent Graduate Training and EmPOWERment for a Sustainable Energy Future," PI: Sioshansi, Co-PI: Ramnath, Irwin, Mayhew, Bielicki, $2,980,383
5. 2019-2021: NSF EAGER: A framework for economical cyber security Inspection and assurance, 03/15/2019 - 02/28/2021, PI: Allen, Co-PI: Ramnath, $300,000
6. 2019-2019: Nationwide Integrating telematics data with other data sources to develop models of driver risk 01/01/2019- 12/31/2019, PI: Ramnath, $55,313
7. 2019-2019: Astute Solutions, Information retrieval techniques for social customer relationship management (CRM) systems, 01/01/2019- 12/31/2019, PI: Ramnath, $122,398
8. 2019-2019: Safe Auto Group Agency, Inc. Analyzing call center voice communications for business insights 0/501/2019- 05/01/2020, PI: Ramnath, $59,639
9. 2018-2018: Integrating telematics data with other data sources to develop models of driver risk, Nationwide Insurance, $60,881.
10. 2018-2018: Information retrieval techniques for social customer relationship management (CRM) systems, Astute Solutions, $54,431 (co-PI: Gagan Agrawal)
11. 2017-2018: Improving service quality with translational data analytics, Haier Group, $15,000
12. 2017-2017: Integrating telematics data with other data sources to develop models of driver risk, Nationwide Insurance, $47,746.
13. 2017-2017: Information retrieval techniques for social customer relationship management (CRM) systems, Astute Solutions, $47,746 (co-PI: Gagan Agrawal)
14. 2016-2016: Integrating telematics data with other data sources to develop models of driver risk, Nationwide Insurance, $54,740
15. 2015-2018, Intergovernmental Personnel Act Appointment, National Science Foundation, $649,334.
16. 2016-2016: Information retrieval techniques for social customer relationship management (CRM) systems, Astute Solutions, $45,141 (co-PI: Gagan Agrawal)
17. 2015-2018: Bridging the gap in e-capacity for global health research and training in eastern Africa, John E Fogarty International Center, $215,754 (PI: Gebreyes, Co-PIs: Bisesi, Gorgas, Menon, Schopis, Xiao)
18. 2015-2016: Help Desk Service Improvement, Nationwide Insurance, $55,000 (co-PI Jay Ramanathan)
19. 2015-2016: Integrating telematics data with other data sources to develop models of driver risk, Nationwide Insurance, $55,000 (co-PI Jay Ramanathan)
20. 2015-2016: Information retrieval techniques for social customer relationship management (CRM) systems, Astute Technologies, $42,000 (co-PIs Gagan Agrawal, Jay Ramanathan)
21. 2014-2015: Bluetooth and wifi proximity and positioning study, Honda of America, $35,693 (co-PI Prasun Sinha)
22. 2014-2015: Introduction to Java for the non-Java programmer, Nationwide Insurance, $33,000 (co-PI Jeremy Morris).
23. 2014-2014: Data and analytics R&D in telematics, Nationwide Insurance, $54,000. (PI: Jay Ramanathan)
24. 2014-2017: NSF-SBE: TTP Option: Medium: Data-Driven Cyber Vulnerability Maintenance, $632,297 (PI: Theodore Allen)
25. 2014-2018: Let's BRAG (Bring Robust Achievement Gains) about our Schools!, Delphos City Schools, Subcontract to State of Ohio Straight-A grant, $154,589 (includes $15,000 add on in 2016). On no-cost-extension through 2018.
26. 2013-2014: Evaluating quality of open access journals, OCLC Inc., $45,000.
27. 2014-2014: Research in Data Mining and Information Retrieval, Astute Technologies, $42,000.

28. 2013-2014: EXP: GeoGames - online map games for teaching and learning through a real-world spatial perspective, $249,999. (PI: Ola Ahlqvist)
29. 2013-2014: Information retrieval tools for gathering insights from help desk information, Nationwide Insurance, $52,000 (PI: Jay Ramanathan).
30. 2013-2014: Data mining, information retrieval from unstructured data streams, Nationwide Insurance, $200,000.
31. 2012-2013: Enterprise Architecture Research, NSF IUCRC-supported project, Nationwide Insurance, $100,000.
32. 2012-2013: Enterprise Architecture Research, NSF IUCRC-supported project, CloudMaarg Inc., $14,500. Unrestricted Gift.
33. 2012-2015: Reducing special education/reading risk through an oral reading fluency intervention for urban learners, $479,053.
34. 2012-2013: Mobile Applications and Application Framework for Asthma Prevention, Ohio Department of Health, $48,000.
35. 2012-2013: Enterprise Architecture Research, NSF IUCRC-supported project, OCLC, $45,000.
36. 2012-2013: Enterprise Architecture Research, NSF IUCRC-supported project, Ohio State University Medical Center, $25,000. (PI: Jay Ramanathan)
37. 2012-2013: Enterprise Architecture Research, NSF IUCRC-supported project, Samraksh Inc., $44,500.
38. 2012-2015: Effectiveness and benefit of two STI prevention delivery methods for military women, Sponsor: Uniformed Services University Health Sciences, $660,959.00. (PI: Maria Palazzi)
39. 2011-2012: Enterprise Architecture Research, NSF IUCRC-supported project, Astute Technologies, $27,000.
40. 2011-2012: Enterprise Architecture Research, NSF IUCRC-supported project, Nationwide Insurance, $69,000.
41. 2011-2012: Capstone Sponsorships (Lexmark, Eaton Corp., Cardinal Industries, Transmap, Haugland Learning Centers and other sponsors), $30,500.
42. 2011-2012: IBM Shared University Research Award (Equipment Grant) $22,035 (estimated value).
43. 2011-2012: Enterprise Architecture Research, NSF IUCRC-supported project, JP Morgan Chase, $32,000.
44. 2011-2013: EXP: GeoGames - A virtual simulation workbench for teaching and learning through a real-world spatial perspective, Sponsor: NSF Social, Behavioral & Economic Res (35000801): IIS-1124037, $349,114. (PI: Ola Ahlqvist)
45. 2011-2012: Enterprise Architecture Research, NSF IUCRC-supported project, Ohio State University Medical Center, $42,000.
46. 2011-2012: Enterprise Architecture Research, NSF IUCRC-supported project, Samraksh Inc., $28,000.
47. 2011-2012: Enterprise Architecture Research, NSF IUCRC-supported project, Ohio Supercomputer Center, $57,000.
48. 2011-2011: IDEAL Group. Gift, $5000.
49. 2011-2012: Enterprise Architecture Research, NSF IUCRC-supported project, Micro Industries, $45,000.
50. 2011-2012: Enterprise Architecture Research, NSF IUCRC-supported project, Astute Technologies, $21,000. Provided as unrestricted gift.
51. 2010-2011: Enterprise Architecture Research, NSF IUCRC-supported project, Songwhale Inc., $19,000.

52. 2010-2011: Open-Source Talking eBook Reader, OH Rehabilitation Services Commission, $65,443. .
53. 2010-2011: Accessible Mobile Web Browser, OH Rehabilitation Services Commission, $65,443.
54. 2010-2011: Enterprise Architecture Research, NSF IUCRC-supported project, Nationwide Insurance, $45,000.
55. 2010-2011: Enterprise Architecture Research, NSF IUCRC-supported project, Ohio Supercomputer Center, $18,000.
56. 2010-2011: Enterprise Architecture Research, NSF IUCRC-supported project, Samraksh Inc., $42,000.
57. 2010-2011: Enterprise Architecture Research, NSF IUCRC-supported project, Ohio Supercomputer Center, $36,000.
58. 2010-2011: Enterprise Architecture Research, NSF IUCRC-supported project, Grange Insurance, $24,000.
59. 2010-2011: Enterprise Architecture Research, NSF IUCRC-supported project, Juice Technologies, $13,200.
60. 2010-2011: Enterprise Architecture Research, NSF IUCRC-supported project, Cable Television Labs Inc., $5.591.
61. 2010-2011: Enterprise Architecture Research, NSF IUCRC-supported project, Nationwide Inc., $45,000.
62. 2009-2010: Enterprise Architecture Research, NSF IUCRC-supported project, TechColumbus 1492 Program, $12,470.
63. 2009-2009: SentosaTech Inc. Gift, $1000.
64. 2009-2009: Pandemic influenza program initiative B-project 6 program: Addressing vulnerabilities in populations, $30,000, (PI: Anand Desai).
65. 2008-2011: GENI-fying and Federating Autonomous Kansei Wireless Sensor Networks, BBN Technologies, $166,667 (first year funding) (PI: Anish Arora).
66. 2009-2011: Curriculum for Accelerated Services Engineering (CASE), NSF Program: Course, Curriculum and Laboratory Improvement Program: Phase 1 (Exploratory Projects), $149,981, (co-PI: Jay Ramanathan, Neelam Soundarajan, Jerome D'Agostino).
67. 2008-2009: Evaluating Feasibility of the Distribution and Dispensing of Antiviral Drugs to Self-Isolated or Self-Quarantined Persons as Part of a Community Containment Strategy in Ohio, Cuyahoga County Board District of Health, $20,000. (PI: Anand Desai).
68. 2008-2009: Business Higher Education Forum (BHEF), STEM Modeling and Management Project, $61,942. (PI: Kathy Sullivan, Glenn Institute of Public Affairs).
69. 2008-2009: Enterprise Architecture Research, NSF IUCRC-supported project, Context Knowledge Group LLC, $5,000.
70. 2007-2008: Enterprise Architecture Research, NSF IUCRC-supported project, TDCI Inc., $6634.
71. 2007-2008: Enterprise Architecture Research, NSF IUCRC-supported project, TDCI Inc., $11,000. Provided as gift.
72. 2007-2008: Enterprise Architecture Research, NSF IUCRC-supported project, ST Industries, $16,000.
73. 2008-2009: Enterprise Architecture Research, NSF IUCRC-supported project, Nationwide Insurance, $45,000. (Co-PI Jay Ramanathan)
74. 2008-2013: Center for Experimental Research in Computer Systems - Research Site Ohio State University, $250,000.00. (PI Jay Ramanathan)
75. 2008-2009: Training of Public Health Personnel and Public Health Partners in the "Planning P Process" for a Type 3 Incident, $108,228.12. (PI: Anand Desai)

76. 2008-2009: Enterprise Architecture Research, NSF IUCRC-supported project, Ohio Department of Job and Family Services, $45,000. (Co-PI Jay Ramanathan)
77. 2008-2009: Bringing the crowds to the battleground: How newsrooms can deepen and improve their election coverage by involving citizens and using open-source analysis tools. Battelle Endowment for Technology and Human Affairs (BETHA) Grant. $56,285. Role: Co-PI (PI: Trevor Brown, John Glenn School for Public Affairs).
78. 2008-2009: NSF CI-Team: Improving American Competitiveness through Workforce Education in Cyberinfrastructure Applications. Role: Senior Personnel. $999,942. Role: Senior Personnel (PI: Steven Gordon, Ohio Supercomputer Center).
79. 2007-2008: IBM Shared University Research Award (Equipment Grant). $85,398 (estimated).
80. 2007-2008: Enterprise Architecture Research, NSF IUCRC-supported project, Nationwide Insurance, $45,000. (Co-PI Jay Ramanathan)
81. 2007-2008: Enterprise Architecture Research, NSF IUCRC-supported project, City of Columbus, $50,000. (PI Jay Ramanathan)
82. 2007-2012: NSF Creative Pathways to Undergraduate Education (CPATH): Nurturing through Entrepreneurship IT World Leaders (NEWPATH). National Science Foundation Grant #0722287. $539,000. (PI: David Lee)
83. 2007-2008: Enterprise Systems Workshops for the Securities Exchange of China. , curriculum development, instruction and coordination. (Other instructors and collaborators: Jay Ramanathan, Greg Hines. Coordination through Fisher College of Business, Department of Executive Education.)
84. 2006-2008: SID: Re-architecture of the Ohio State University Integration Platform. NSF IUCRC-supported project, Ohio State University, Office of Information Technology, $47,500.
85. 2007-2013: Acute coronary syndrome and care-seeking delay: a web based behavioral study, National Heart, Lung, and Blood Institute, $509,660. (PI: Angelo Alonzo, Yale University)
86. 2006-2007: National Science Foundation IUCRC Planning Grant, $10,000. (PI: Jay Ramanathan).
87. 2006-2007: IBM Faculty Award. $40,000. (Co-PI Jay Ramanathan)
88. 2006-2007: Enterprise Architecture Research, NSF IUCRC-supported project, Nationwide Insurance, $45,000. (Co-PI Jay Ramanathan)
89. 2006-2007: McGraw-Hill Education, Enterprise Architecture Pattern Mining, $12,517. (PI: Jay Ramanathan)
90. 2006-2007: Enterprise Software Engineering and J2EE Workshops, Nationwide Insurance $34,350. Program development, curriculum development, instruction and coordination. (Collaborators: Alan Cline, Robert Mathis, Paul Sivilotti, and John Thomas. Coordination through Fisher College of Business, Department of Executive Education.)
91. 2006-2007: City of Columbus, Department of Technology, DOJ-311 Evaluation, $29,877. Role PI (Co-PI Jay Ramanathan, Anand Desai).
92. 2005-2006: City of Columbus, Department of Technology, 311 Architecture Validation, $87,000. (Co-PI Jay Ramanathan)
93. 2005-2006: Motorola Gift. $10,000.
94. 2003-2005: Project management services for Defense Advanced Research Projects Agency (DARPA), Network Embedded Systems Technology, $81,000. (PI Anish Arora).
95. 2004-2005: Ohio Aerospace Institute, Data compression, formatting, and management of real-time meteorological data. $51,711. (PI Hakan Ferhatosmanoglu)

96. 2003-2004: City of Columbus, Department of Technology, Information Technology Strategic Plan. $19,600.
97. 2003-2004: Central Ohio Transit Authority, Services Architecture Validation. $10,952.
98. 2002-2003: Migration Technologies, Legacy to three-tier migration. $8500.

University, College and Departmental Committee Memberships:
- 2019: Graduate studies, graduate admissions, outreach and engagement committees, College Promotion and Tenure, Research Strategy Committee.
- 2018: CSE Chair Search Committee.
- 2010-2012: CSE representative on the University Senate and Faculty Council.
- 2011: Member of the Council for Academic Freedom.
- 2011-2014: Member of the University Research Council.
- 2002-2011: Member CSE Curriculum Committee, Undergraduate Studies Committee.
- 2005: Director Search Committee, Ohio State University Digital Union.

Service to Computer Science and Engineering, Editorial and other Boards, Program Committee, Panel and Reviewer Activities:
- NSF Review Panelist joint NSF/MPS and NASA program, 2020.
- NSF Review Panelist OAC Core program, 2020.
- NSF Review Panelist Quantum Leap program, 2020.
- NSF Review Panelist OAC Core program, 2020.
- NSF Site Reviewer Engineering Research Centers Program, 2020.
- NSF Review Panelist OAC programs, 2019.
- NSF Review Panelist Quantum Leap program, 2019.
- NSF Site Reviewer Engineering Research Centers Program, 2019.
- Committee Member Graduate Studies, Department of Computer Science and Engineering, 2018-
- Committee Member, Graduate Admissions, Department of Computer Science and Engineering, 2018-
- Reviewer, IEEE Computing in Science and Engineering, 2018.
- Co-chair, The Networking and Information Technology Research and Development (NITRD) Program, coordination area on Middleware And Grid Interagency Coordination (MAGIC, https://www.nitrd.gov/nitrdgroups/index.php?title=Middleware_And_Grid_Interagency_Coordination_(MAGIC)), 2016-2017.
- Reviewer, Database Management & Information Retrieval, 2017.
- Reviewer, Journal of Systems and Software, 2017.
- Reviewer, 30th IEEE International Parallel & Distributed Processing Symposium, 2016.
- Editorial Board Member and Associate Editor Professional Practice (http://www.computer.org/web/computingnow/software/edboard), IEEE Software, 2015-current.
- Reviewer, ICTIEE-2015, Second International Conference on Transformations in Engineering Education, 2015.
- Proposal review panelist, NSF Cyberlearning Program, Information & Intelligent Systems Division (IIS), 2014.
- Reviewer, 47th Hawaiian International Conference on System Sciences (HICSS), 2013.
- Reviewer, Society of Computer Science in India (CSI) Transactions on ICT, 2013.
- Co-Chair, Cloud Computing Track, ACM Symposium for Applied Computing (SAC) 2014.
- Reviewer, Frontiers In Education (FIE) Conference, 2013.

- Reviewer, Future Generation Computer Systems (FGCS), Elsevier Publications, 2013.
- Reviewer, ACM Transactions on Speech and Language Processing, 2013.
- Co-Chair, Cloud Computing Track, ACM Symposium for Applied Computing (SAC) 2013.
- Program Committee Member, Enterprise Engineering Track, ACM Symposium for Applied Computing (SAC) 2013.
- Reviewer, Future Generation Computer Systems (FGCS), Elsevier Publications, 2012.
- Reviewer, Frontiers In Education (FIE) Conference, 2012.
- Reviewer, Journal of Data Mining and Knowledge Discovery (DAMI), 2012
- Co-Chair, Cloud Computing Track, ACM Symposium for Applied Computing (SAC) 2012.
- Program Committee Member, Enterprise Engineering Track, ACM Symposium for Applied Computing (SAC) 2012.
- Reviewer, Frontiers In Education (FIE) Conference, 2011.
- Reviewer, Transactions in Knowledge and Data Engineering (TKDE), 2011.
- Co-Chair, Cloud Computing Track, ACM Symposium for Applied Computing (SAC) 2011.
- Program Committee Member, Enterprise Engineering Track, ACM Symposium for Applied Computing (SAC) 2011.
- Panelist, FIE 2010 Workshop on Integrated Models of Entrepreneurship Education, Frontiers in Education Conference, Washington, D.C., October 2010.
- Reviewer, ACM/IEEE International Conference on Information Processing in Sensor Networks, 2010.
- Reviewer, IEEE Transactions on Parallel and Distributed Systems, 2010.
- Co-Chair, WETICE '09 International Workshop on Integrating the Edge with the Enterprise for Planning and Management, 18th IEEE International Workshops on Enabling Technologies: Infrastructures for Collaborative Enterprises, Groningen (The Netherlands), June 29 - July 1, 2009.
- Reviewer, IEEE 3rd International Workshop on Web and Pervasive Security, 2009.
- Reviewer, Springer Journal of Telecommunication Systems, Special Issue on Security for Multimedia and Ubiquitous Applications, 2009.
- Chair, Autonomic and Cloud Computing Track, Symposium for Applied Computing (SAC) 2008, March 2009.
- Reviewer, 42nd Hawaiian International Conference on System Sciences (HICSS), 2008.
- Reviewer, MODUS Workshop, IPSN 08, International Conference on Information Processing in Sensor Networks 2008, St. Louis, Missouri, USA, April 22-24, 2008.
- Program Committee Member, 3rd IEEE International Workshop on Security, Trust, and Privacy for Software Applications (STPSA 2008), COMPSAC 2008, July 2008.
- Program Committee Member, First International Workshop on Mobile Device and Urban Sensing (MODUS), April 2008.
- Co-Chair, Autonomic Computing Track, Symposium for Applied Computing (SAC) 2008, March 2008
- Session Chair, Middleware Engineering Track, Symposium for Applied Computing (SAC) 2008, March 2008
- Program Committee Member, Symposium for Applied Computing (SAC), Autonomic Computing Track, March 2007.
- Program Committee Member, 9th International Conference on Enterprise Information Systems (ICEIS'2007), 4th International Workshop on Ubiquitous Computing (IWUC'2007). http://www.iceis.org/workshops/iwuc/iwuc2007-cfp.html, 2007.

- Panelist, Panel on Global Software Development, IEEE Computer Society Signature Conference on Software Technology and Applications (COMPSAC), Chicago, Illinois, September 2006.
- Reviewer, International Journal of Distributed Sensor Networks, http://www.tandf.co.uk/journals/titles/15501329.asp, 2006-2007.
- Editorial Board Member, I/S: A Journal of Law and Policy for the Information Society, http://www.is-journal.org, 2004 – present.
- Reviewer, 26th Annual ACM SIGACT-SIGOPS Symposium on Principles of Distributed Computing (PODC 2007), 2007.

Workshops and Invited Talks:

- "Academia-Industry Collaborations: Research Outcomes, Lessons Learned and Opportunities", invited talk, Department of Computer Science, University of Western Florida, 2019
- "Writing NSF proposals", invited talk, Department of Computer Science, University of Western Florida, 2019
- "Ten Years of Academia-Industry Collaborations: Research Outcomes, Lessons Learned and Opportunities", invited talk, Department of Electrical and Computer Engineering, University of Delaware, 2019.
- "The Evolving Role of NSF Software Programs and Software Gateways in a National Cyberinfrastructure Ecosystem", keynote talk, Gateways 2016 Conference, San Diego, CA, November 2016, https://www.youtube.com/watch?v=pEgR2hgJkp8.
- "The Evolving Role of NSF Software Programs in a National Geospatial Cyberinfrastructure Ecosystem", keynote talk, 2016 CyberGIS Workshop, Urbana-Champaign, IL, July 2016.
- "The Evolving Role of NSF Software Programs and Campus Cyberinfrastructures in a National Cyberinfrastructure Ecosystem", keynote talk, Advancing Research Computing on Campuses: Best Practices Workshop (ARC '16), National Center for Supercomputing Applications (NCSA), Illinois, March 2016.
- "The Role of Cyberinfrastructure" Case-Western Reserve University Cyberinfrastructure Days, March 15th, 2015, https://www.youtube.com/watch?v=V_6Do94lhPI.
- "Virtual Academy: Creating a CS professional: Complementing the Classroom in Computer Science Education with Real-World Projects", IUCEE Webinar, http://youtu.be/qWNzOtNpJ7M, May 2014.
- "Enhancing Computer Science Education with Real-World App Development Projects", Invited Talk, Apple AcademiX 2011, http://education.apple.com/academix/ and http://education.apple.com/academix/videos/Rajiv_Ramnath.mov, May 2011.
- "Industry-Relevant Software Engineering", Indo US Collaboration for Engineering Education (IUCEE) Workshop, Thiagarajar College of Engineering, Madurai, India, June 2010.
- "Complex Systems Integration", Fisher College of Business Executive Education Workshop, Air Force Institute of Technology, Dayton, Ohio, USA, April 2010.
- "Building an Integrative Curriculum for Services Engineering through Industry-University Collaborations", Invited Talk, Inaugural Symposium on Computer Science Education, Academic Panel, Franklin University, Columbus, Ohio, April 2009.
- "Technology Enablement of Virtual Manufacturing Cells in Job-shops," Job-Shop Lean Conference, Columbus, Ohio, 2008.
- "IT-enabled Innovation," Workshop for Nationwide Services Company, 2008
- "CETI Enterprise Architecture Forum: Impact of Mergers and Acquisitions on Enterprise Architecture," Columbus, Ohio 2007

- "IT-enabled Innovation," Qwest Billing Managers' Retreat, Qwest Ltd., November 2007.
- "Developing the Next-Generation Workforce," Ohio Digital Summit, Panel on Next-Generation Workforce, October 2007.
- "Employee Retention and Training" TechColumbus TechTalk, Panel on Employee Retention and Training, November 2006
- "How IT can Really Matter: Driving Innovation from Internal Information Technology Organizations," Invited Talk, Central Ohio Chapter of the ACM, May 2006.
- TechColumbus TechTalk, Moderator, Panel on Six-Sigma, March 2006.
- "People, Process and Technology in Enterprise Architecture Integration," TechColumbus TechTalk Panel on Enterprise Architecture Integration, October 2002.

Press Coverage:
- https://news.osu.edu/ohio-state-interns-help-build-smart-columbus-operating-system/
- https://www.hpcwire.com/off-the-wire/nsf-awards-15m-create-science-gateways-community-institute/
- https://www.nsf.gov/news/news_summ.jsp?preview=y&cntn_id=189347
- http://insidehpc.com/2015/10/agave-platform-provides-science-as-a-service/
- http://circlcenter.org/meet-rajiv-ramnath/
- http://thelantern.com/2013/11/video-game-learning-research-program-granted-nearly-250k/
- http://www.seemoreinteractive.com/news/detail/1
- http://engineering.osu.edu/news/2012/08/students-win-stem-app-challenge-mobile-application-%E2%80%9Creal-ball%E2%80%9D
- http://digitalfirst.osu.edu/news/71
- http://www.usnews.com/education/blogs/college-cash-101/2008/11/17/is-a-college-degree-really-worth-the-cost
- http://www.bizjournals.com/columbus/stories/2008/03/24/daily30.html?jst=b_ln_hl
- http://bostechcorp.absolutebica.com/?/news/details/the-ohio-state-university-leverages-bostech-chainbuilder-esb-open-source-so/

Awards:
- Charles E. MacQuigg Teaching Award, College of Engineering, OSU, 2010.
- Department of Computer Science and Engineering Faculty Teaching Award 2007.

Professional Organizations:
- Member, Association of Computing Machinery (ACM) since 1989