

CURRICULUM VITAE

Prof. KRISHNA MOORTHY SIVALINGAM, Ph.D.

Updated: January 5, 2012

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Education

Ph.D.	1994	State University of New York (SUNY), Buffalo, NY, USA	Computer Science
M.S.	1990	State University of New York (SUNY), Buffalo, NY, USA	Computer Science
B.E.	1988	College of Engineering Guindy Anna University, MADRAS (now Chennai), India	Computer Science & Engineering

Experience in Higher Education

2007 – present	Dept. of CSE, Indian Institute of Technology (IIT) Madras, INDIA	Professor (3/2009 –); Associate Professor (7/2007 – 3/2009)	Computer Science & Engineering
2002 – 2009	Dept. of CSEE, University of Maryland, Baltimore County (UMBC), USA	Professor (July 2006 – Aug. 2009); Associate Professor (8/2002 – 6/2006)	Computer Science
1997 – 2002	School of EECS, Washington State University (WSU), Pullman, USA	Associate Professor (8/2000 – 8/2002) Assistant Professor (8/1997 - 8/2000)	Computer Science
1994 – 1997	University of North Carolina at Greensboro (UNCG), USA	Assistant Professor	Computer Science
1988 – 1994	SUNY Buffalo, USA	TA/RA	Computer Science

Visiting

Summers of 2005, 2006, 2008, 2010, 2011	Sri Sathya Sai Institute of Higher Learning (SSSIHL), Puttaparthi, INDIA		Depts. of Math. & CS (DMACS); Physics (DPHY)
May 2000	McMaster University, Hamilton, Canada		ECE Dept.

Experience in Other than Higher Education

July 2009	IBM India Research Labs, Delhi	<i>Visiting Professor</i>
Feb. – May 2001	Jasmine Networks, San Jose, CA	<i>Principal Network Architect</i>
July 2000	DoD Laboratory for Telecomm. Sciences	<i>Visiting Scientist</i>
Mar 1997 – Dec 1997	AT&T Labs, Whippany, NJ	<i>Consultant</i>
Summer 1997	AT&T Labs, Whippany, NJ	<i>Visiting Member of Technical Staff</i>
Summer 1996	Lucent Tech. Bell Labs, Murray Hill, NJ	<i>Visiting Member of Technical Staff</i>

Honors and Awards

- ▷ Elected **SENIOR MEMBER** of IEEE, Oct. 2000
- ▷ **BEST PAPER AWARD** at IEEE International Conference on Networks (ICON), Singapore, Sep. 2000. (Co-Authors: M. Mishra and E. Johnson)
- ▷ **Presidential Fellowship**, SUNY Buffalo, 1988–1991

- ▷ **FIRST IN STATE**, State of Tamil Nadu (INDIA), Engineering Entrance Examination, Aug. 1984
- ▷ **FIFTH IN STATE**, State of Tamil Nadu (INDIA), Matriculation Examination, June 1982

External Research Support

Sep. 2010 - Sep. 2012, “Networking Technologies for the Smart Grid”, IBM Open Collaborative Research (OCR) Project, US\$30,000, PI.

June 2009 - June 2012, INR 93 Lakhs, Indian Department of Science & Technology (DST), “India-UK Advanced Technology Centre (IU-ATC) of Excellence in Next Generation Networks Systems and Services – Theme 5: Converged Networks QoS Frameworks”, Co-PI. (UK Part funded by EPSRC; Project PIs: Prof. Ashok Jhunjunwalla of IIT Madras, India and Prof. Gerard Parr of Univ. of Ulster, UK).

Jan. 2009 - June 2011, INR 33 Lakhs, Tata Power Company, “Tactical Field Wireless System”, Co-PI.

Feb. 2006 - Nov. 2008, \$450,183 (UMBC: \$236,140), Air Force Office of Scientific Research (AFOSR), “Ultra-Wideband Communications based Sensor Networks”, PI; (Co-PI: Prof. Prathima Agrawal, Auburn University).

Sep. 2004 - Aug. 2005, \$15,000, National Science Foundation (NSF), “IEEE SECON Conference 2004: Travel Grant Awards”, PI.

Sep. 2004 - Aug. 2005, \$30,000, National Science Foundation (NSF), “First Annual International Conference on Network Security for Mobile, Wireless and Ubiquitous Systems: Travel Grant Awards”, PI.

Sep. 2003 – Aug. 2006, \$366,000 (UMBC: \$174,201), National Science Foundation (NSF), “Wavelength Sharing Mesh-Restorable Optical Networks”, Co-PI; The support includes a Research Experience for Undergraduates (REU) supplement of \$6,000.

Sep. 2003 - Aug. 2004, \$10,000, NSF, “OptiComm 2003: Student Travel Grants”, PI.

Jan. 2003 – Dec. 2003, \$88,000, Cisco Systems University Research Program (URP), “Provisioning, Protection and Restoration Mechanisms for Tunable Laser-based Optical Wavelength Division Multiplexed (WDM) Networks”, PI.

Aug. 2002 – Jul. 2004, \$100,001 (UMBC: \$18,245), NSF, “Configurable and Composable Systems Mechanisms for Supporting Multi-Property Quality of Service in Memory and Power Constrained Embedded Systems”, Co-PI.

Aug. 2002 – Jul. 2004, \$152,000, Intel Research Council grant, “Protection and Traffic Grooming in Optical SONET/G.709 and Wavelength Division Multiplexed (WDM) Networks”, PI.

Jan. 2001 – May 2002, \$98,451, Cisco Systems University Research Program (URP), “Routing, QoS, and Virtual Private Networks for Optical Wavelength Division Multiplexed (WDM) Networks”, PI.

Jan. 2001 – Dec. 2001, \$70,302, Cisco Systems University Research Program (URP), “Network Simulator for Optical Wavelength Division Multiplexed (WDM) Networks”, PI.

Feb. 1999 – Dec. 2001, \$176,631, Air Force Office of Scientific Research (AFOSR), “Energy efficient network protocols for wireless and mobile networks”, PI.

Apr. 2000 – Oct. 2000, \$40,923, Air Force Office of Scientific Research (AFOSR), “MAC and Routing Protocol Research in Self-Organizing Wireless Networks”, PI.

Sep. 2000 – May 2001, \$19,400, Alcatel, “Optical Burst Switching Networks”, PI.

Apr. 1999 – Dec. 2000, \$101,420, Cisco Systems University Research Program (URP) grant, “Routing, QoS support, and Multicasting in Optical Wavelength Division Multiplexed (WDM) Networks”, PI.

Aug. 2000 - Aug 2001, \$10,096, Intel Corporation, “Research in Optical and Wireless Networks”, PI.

Jul. 1998 – Jun. 2000, \$138,335, Washington Technology Center and Packet Engines, Inc., “Network Performance and QoS Management for Gigabit Networks”, Co-PI; Additional equipment from Packet Engines worth \$114,865.

Dec. 1998 – Oct. 1999, \$32,967, Washington Tech. Center and Cascade Scientific Software, Inc., “Software development for Beowulf computer clusters”, PI.

Jul. 1997 – Jun 1999, \$114,367 (including \$57,183 in matching funds), NSF Instrumentation Laboratory Improvement (ILI) grant, “Next generation ATM and wireless network laboratory”, Co-PI.

Aug. 1997 – Aug. 1998, \$50,000, Air Force Office of Scientific Research (AFOSR), “Wireless connectivity to ATM communication grid”, Co-PI.

Jan. 1999 – Dec. 1999, \$3,000, Bellcore, “Architecture and design of routing IP over optical WDM networks”, PI.

Mar. 1997 – Dec. 1997, \$14,830, AT&T research grant, “Architecture and design of MAC layer protocols for next-generation local access communication networks”, PI.

Mar. 1996 – Dec. 1998, \$15,000, Xerox Corporation, “Network interoperability in a heterogeneous environment with isotropic resources”, PI.

Equipment and Software Grants:

Intel Corporation, “Optical WDM Networks Research”, \$15,839, Aug. 2002 and June 2003.

Microsoft Software Donation, \$9,285, Aug. 2002.

Hewlett-Packard equipment grant (co-PI with D. Bakken), “Distributed Quality of Service for E-Commerce”, \$236,555, June 2000.

Cisco equipment grant, “Instructional Facility for Next Generation Networking and Distributed Computing”, \$165,335, Oct. 1999.

Intel Corporation equipment grant (co-PI with D. Bakken), “Instructional Facility for Next Generation Networking and Distributed Computing”, \$22,598, Aug. 1999.

Microsoft Software Donation, \$2,400, Jan. 1999.

Internal Grants Received

Dec. 2007 - Nov. 2010, Indian Rs. 500,000 (US \$12,500), IIT Madras New Faculty Grant, “ Ultra Wide Band Communications Based Wireless Sensor Networks”, PI.

Aug. 2003 - July 2004, \$8,250, UMBC Special Research Initiative Support (SRIS) grant, “Ultra-wide band networking for wireless multi-hop infrastructure networks”, PI.

Spring 1996, \$12,000, UNCG Equipment Fund (Team grant with Bruce Landman, Sue Lea, Fred Sadri, and Jie Wang), “Mathematical Sciences Computer Laboratory”.

May 1996 – June 1997, \$6,000, UNCG Regular Faculty Grant, “A Coherent Interoperable Framework for Integration of Network Information Sources”, Co-PI.

Summer 1996, \$4,000, UNCG Summer Research Excellence Grant, “Access Protocols for Next-Generation Wireless-ATM Networks”, PI.

May 1995–June 1996, \$2,300, UNCG Regular Faculty Grant, “All-Optical Computer Networks: Media Access Protocols based on Multiple Pre-allocated Receivers”, PI.

Summer 1995, \$4,000, UNCG Summer Research Excellence Grant, “All-Optical Computer Networks: Media Access Protocols based on TDM Scheduling”, PI.

Nov. 1994 – June 1995, \$2,035, UNCG New Faculty Grant, “Wavelength Division Multiplexed Fiber Optic Networks: Bit Parallel versus Bit Serial”, PI.

Graduate Students

Current – Ph.D

1. Mr. Rajendra Singh Panwar, IIT Madras, 2011 – present
2. Mr. C. Vanniarajan, IIT Madras, Co-Advisor with Prof. Kamala Kritivasan, 2010 – present
3. Mr. K. Muralidharan, Anna University Coimbatore, Co-Advisor with Prof. T. A. Gonsalves, 2010 – present
4. Mr. S. A. V. Satyamurty, Ph.D Co-Advisor (with Dr. Baldev Raj, Director of Indira Gandhi Institute of Atomic Research (IGCAR), Chennai, India as Chair). Student is enrolled at Homi Bhabha National Institute, Mumbai, India, 2008 – present

Graduated – Ph.D.

5. Dr. Mahesh Sivakumar, Ph.D Advisor, Dec. 2006, Cisco Systems, San Jose, CA. *Dissertation: Architectures and Algorithms for Survivable Wavelength-Shared Optical WDM Mesh Networks*
Won NSF Student Travel to attend IEEE ICNP 2005 conference, \$500, Nov. 2005
Won NSF Student Travel to attend Broadband Networks 2004 conference, \$800, Oct. 2004
Won NSF Student Travel to attend SPIE OptiComm 2003 conference, \$800, Oct. 2003
6. Dr. Nilesh Bhide, Ph.D Advisor, May 2001, Microsoft Corporation, Redmond, WA. *Dissertation: Network protocols and algorithms for next generation optical wavelength division multiplexed networks*
Won ACM Special Interest Group on Computer Communications (SIGCOMM) Conference Travel Award, \$1,000, Aug. 1999
7. Dr. Indu Mahadevan, Ph.D Advisor, Oct. 1999, Cisco Systems, San Jose, CA. *Dissertation: Quality of service and routing support in wireless and mobile multimedia networks*
Won ACM Special Interest Group on Computer Communications (SIGCOMM) Conference Travel Award, \$750, Aug. 1998
8. Dr. Jyh-Cheng Chen, Ph.D Committee Co-Chair, May 1998, (Graduated from SUNY Buffalo; Co-advised with Dr. Raj Acharya), Assistant Professor, National Tsing Hua University, Hsinchu, Taiwan R.O.C. *Dissertation: Design and analysis of low-power access protocols for wireless ATM networks supporting multimedia traffic*

Current – Master's degree (M.S./M.Tech.)

9. Mr. M. Karthick, M.S. (by Research) Guide.
10. Ms. Preethi Chandur, M.S. (by Research) Guide.
11. Mr. K. Narendran, M.S. (by Research) Guide.
12. Mr. B. Durai, M.S. (by Research) Guide.
13. Mr. C. S. Ganesh, M.S. (by Research) Guide.
14. Mr. Sarang Deshpande, M.S. (by Research) Guide.

Graduated – Master's degree (M.S./M.Tech.)

15. Mr. P. Gireesan Namboothiri, M.S. (by Research) Guide, Nov. 2011, *Scalable Deployment with Throughput Management and Target Tracking in Wireless Sensor Networks*
16. Mr. Kiran Kumar, M. Tech. Project Guide, Jul. 2011, *Performance Study of Distributed and Publish/Subscribe Architecture for SmartGrid Networks*
17. Mr. Rahul Kulkarni, M. Tech. Project Guide, Jul. 2011, *Wimax Based Back-Haul For Tactical Military And Disaster Area Networks*
18. Mr. A. Anand Kumar, M. Tech. Project Guide, Jul. 2011, *Target tracking with directional sensors using electronic beam steering*
19. Mr. Chakilam Saketh Ram, M. Tech., Sri Sathya Sai University, Project Co-Guide, Mar. 2011, *Design and Evaluation of QoS-Aware Networks for the Smart Grid*

20. Mr. Nikhil Raghavendra Reddy, M. Tech., Sri Sathya Sai University, Project Co-Guide, Mar. 2011, *Analysis of Networks for Collection of Real-time Data in the Smart Grid*
21. Mr. Piyush Baranwal, M. Tech. Project Guide, Jul. 2010, *Network Architecture for Dynamic and Rapid Deployment of Wireless Broadband Services*
22. Mr. Bharat Udai Seth, M. Tech. Project Guide, Jul. 2010, *Sensor Based Smart Mine Design; Winner of Best Poster Award in Distributed, High-Performance, Network & Cyber-physical Systems Category at IBM Collaborative Academia Research Exchange Workshop (I-CARE) 2010, Bangalore, Oct. 2010*
23. Mr. Surendra Sharma, M. Tech. Project Guide, Jul. 2010, *Alpha beta filter based predictive target tracking and guidance in wireless sensor networks, Co-Winner of Best M. Tech. Project in CSE Dept. at IIT Madras, 2010*
24. Mr. Sandeep Nagar, M. Tech., Sri Sathya Sai University, Project Guide, Feb. 2010, *Target Tracking and Noise Removal using Kalman Filters in Wireless Sensor Networks*
25. Mr. Lakshminarayana Padhi, M. Tech., Sri Sathya Sai University, Project Guide, Feb. 2010, *Multi-path Establishment in VCAT based Next-Generation Optical WDM Networks: Differential Delay Constraint Considerations*
26. Mr. Siddartha K. , M. Tech., Sri Sathya Sai University, Project Guide, Feb. 2010, *Traffic Splitting and Differential Delay based Routing for VCAT enabled SONET/SDH Optical WDM Networks*
27. Mr. Anshu Khare, M. Tech. Project Guide, July 2009, Title: *Recovery of lost targets in wireless sensor networks*
28. Ms. Kiran Kumari, M. Tech. Project Guide, July 2009, Title: *Detailed analysis of network architectures and routing algorithms for battalion management system*
29. Mr. N. Srinath, M. Tech. Project Guide, July 2009, Title: *Opportunistic Scheduling Algorithms for WiMAX Mobile Multihop Relay Networks; Winner of Best M. Tech. Project in CSE Dept. at IIT Madras, 2009*
30. Mr. S. Sreekanth, M. Tech. Project Guide, July 2009, Title: *Guided navigation of friendly object towards mobile adversary target using wireless sensor networks*
31. Mr. Prakash Hiranandani, M.S. (Non-Thesis) Advisor, August 2008, Yahoo, Sunnyvale, CA. *Project: A Greedy algorithm for mobile base station based data gathering in wireless sensor networks*
32. Mr. Piyush Shah, M.S. Advisor, December 2007. *Thesis: Data Gathering in Wireless Sensor Networks using Multiple Mobile Data Collection Agents*
33. Mr. Andrew Grossman, M.S. (Non-Thesis) Advisor, August 2007. *Project: Indirect Data Reporting in Wireless Sensor Networks with Multiple Mobile Nodes*
34. Mr. Deepak Bote, M.S. Advisor, December 2006, Google, Mountain View, CA. *Thesis: Optimized Data Gathering in Ultra Wide Band based Wireless Sensor Networks using a Mobile Node*
35. Mr. Karthikeyan Ravichandran, M.S. Advisor, August 2006, Microsoft, Redmond, WA. *Thesis: Design and Analysis of a Dual radio node architecture and Medium Access Control protocols for Ultra Wide Band based Sensor Networks*
36. Mr. Sai Rupak, (Sri Sathya Sai Institute of Higher Learning), M. Tech (Computer Science), Project, Feb. 2006, IBM, Bangalore, India. *Title: IEEE 802.16 WiMax Protocol: ns2 based Implementation and Performance Evaluation for GPSS*
37. Mr. Sai Suhas, (Sri Sathya Sai Institute of Higher Learning), M. Tech (Computer Science), Project, Feb. 2006, Honeywell, Bangalore, India. *Title: IEEE 802.16 Wimax : NS2 Simulator Based Implementation and Performance Analysis for GPC*

38. *Mr. Minal Mishra*, M.S. Advisor, August 2005, Microsoft, Redmond, WA. *Thesis*: Enhancing TCP Performance in Wireless Access Systems with Adaptive Modulation and Coding
39. *Mr. Manoj Sivakumar*, M.S. Advisor, May 2005, Microsoft, Redmond, WA. *Thesis*: Routing and Wavelength Assignment Approaches for Survivable Optical Networks
40. *Mr. Sundar P. Subramani*, M.S. Advisor, May 2005, Microsoft, Redmond, WA. *Thesis*: Reservation Based Wavelength Assignment For Sparse Groomed Optical WDM Mesh Networks
41. *Mr. Shantanu Prasade*, M.S. (Non-Thesis) Advisor, December 2004. *Project*: Security in Wireless sensor networks
42. *Ms. Uttara Korad*, M.S. Advisor, December 2004, Intel, Hillsboro, OR. *Thesis*: Efficient and Reliable Data Delivery Techniques for Wireless Sensor Networks
43. *Mr. Piyush Naik*, M.S. Advisor, August 2004, Microsoft, Redmond, WA. *Thesis*: Cryptographic Key Distribution in Wireless Networks Based on Locationing Information
44. *Ms. Shobha Venugopal*, M.S. Advisor, July 2003, Microsoft, Redmond, WA. *Thesis*: Rendezvous reservation protocol for energy constrained wireless infrastructure networks: Impact of battery management mechanisms
45. *Ms. Jin Ding*, M.S. Advisor, July 2002, completed Ph.D. at WSU. *Thesis*: Design and analysis of an integrated MAC and routing protocol framework for large-scale multi-hop wireless sensor networks
46. *Ms. Harini Krishnamurthy*, M.S. Advisor, July 2002, Amazon.com, Seattle, WA. *Thesis*: Restoration mechanisms based on tunable lasers for single and multiple failures in optical wavelength division multiplexed (WDM) networks
47. *Mr. Sunil Gowda*, M.S. Advisor, July 2002, Zillow.com, Seattle, WA. *Thesis*: Protection mechanisms for fault-tolerant optical wavelength division multiplexed networks based on wavelength converter multiplexing and backup path relocation techniques
48. *Mr. Raghava Kashyapa*, M.S. Advisor, August 2001, Microsoft, Redmond, WA. *Thesis*: Medium access control and routing protocols for data gathering using wireless sensor networks: design and analysis
49. *Mr. Bo Wen*, M.S. Advisor, August 2001, World Wide Packets, Spokane, WA. *Thesis*: Routing and wavelength time-slot assignment in time division multiplexed wavelength-routed optical WDM networks
50. *Ms. Sripriya Vasudevan*, M.S. Advisor, August 2001, Microsoft, Redmond, WA. *Thesis*: Cluster based architecture and routing protocol for next generation wireless sensor networks
51. *Mr. Ramakrishna Shenai*, M.S. Advisor, May 2001, Microsoft, Redmond, WA. *Thesis*: Quality of Service (QoS) mechanisms for optical wavelength division multiplexed (WDM) networks
52. *Ms. Stephanie Lindsey*, M.S. Advisor, November 2000, Microsoft, Redmond, WA. *Thesis*: Energy Efficient Communications for Sensor and Ad Hoc Wireless Networks
53. *Ms. Lifeng Chen*, M.S. Advisor, November 2000. *Thesis*: Mobile-based Error Compensation Algorithms for Wireless Networks
54. *Ms. Christine Price*, M.S. Advisor, May 2000, BBN/GTE, Cambridge, MA. *Thesis*: Power aware scheduling algorithms for wireless networks
55. *Mr. Tibor Fabry-Asztalos*, M.S. Advisor, Dec. 1999, Cisco Systems, Ottawa, CANADA. *Thesis*: Shortest path routing algorithms for optical WDM networks
56. *Mr. Satish Damodaran*, M.S. Advisor, Aug. 1999, Cisco Systems, San Jose, CA. *Thesis*: Quality of Service scheduling algorithms and security protocols for wireless networks
57. *Mr. Manav Mishra*, M.S. Advisor, May 1999, Microsoft, Redmond, WA. *Thesis*: Design of scheduling algorithms for wavelength division multiplexed optical networks

Co-recipient of Best Paper Award at IEEE International Conference on Networks, Singapore, Sep. 2000

Graduate Committee Memberships (While at UMBC)

- ▷ Palani Kodeswaran, Ph.D., Dissertation Committee Member.
- ▷ Balaji Sethuraman Kodeswaran, Ph.D., 2008, Dissertation Committee Member.
- ▷ Waleed Youssef, Ph.D., Preliminary Dissertation Committee Member.
- ▷ Chris Morris, Ph.D. in progress, Dissertation Committee Member.
- ▷ Jason Pearlman, M.S., 2007, Thesis Committee Member.
- ▷ Tom Goff, Ph.D., 2006, Dissertation Committee Member.
- ▷ Aihua Guo, Ph.D., 2006, Dissertation Committee Member.
- ▷ Xiangjun Zhao, Ph.D., 2006, Dissertation Committee Member.
- ▷ Kevin Atkinson, M.S., 2005, Thesis Committee Member.
- ▷ S. Rajeev, (PSG College of Technology, Bharathiar University, Coimbatore, INDIA), Ph.D., 2005, External Reviewer.
- ▷ Sasikanth Avancha, Ph.D., August 2005, Dissertation Committee Member.
- ▷ Siok Kheng Tan (National University of Singapore), 2005, Ph.D. Dissertation External Examiner.
- ▷ Tao Deng (George Washington University), 2005, Ph.D. Dissertation Committee Member.
- ▷ Sunggy Koo (George Washington University), 2004, Ph.D. Dissertation Committee Member.
- ▷ Chu Xiaowen (Hong Kong University of Science and Technology), 2003, Ph.D. Dissertation Committee Member.
- ▷ Gaurav Jolly, 2003, M.S. Thesis Committee Member.
- ▷ Ashwatha Matthur, 2003, M.S. Thesis Committee Member.
- ▷ Poonam Munshi, 2003, M.S. Thesis Committee Member.
- ▷ Mayank Patel, 2003, M.S. Thesis Committee Member.
- ▷ Rajesh Mathews, 2002, M.S. Thesis Committee Member.

Undergraduate Students –

- ▷ *Mr. Advait Alai*, B. Tech. Project (IIT Madras), Jul. 2011, *Quality of Service Analysis of Publish-Subscribe Network Architectures in Smart Grids*
- ▷ *Mr. Manohar P.*, B. Tech. Project (IIT Madras), Jul. 2011, *Optimal PMU Placement considering redundancy and security issues*
- ▷ *Mr. P. Rakesh*, B. Tech. Project (IIT Madras), June 2010, *Networking Support for Smart Grid: A Detailed Performance Study*
- ▷ *Mr. Neeharika Jana*, B. Tech. Project (IIT Madras), June 2010, *Performance Analysis of Dynamic Bandwidth Allocation Algorithms for Long Reach PONs*
- ▷ *Mr. Ujjwal Goel*, B. Tech. Project (IIT Madras), June 2010, *Packet Classification Algorithms - A Detailed Performance Study*
- ▷ *Mr. K. Arun Kumar*, B. Tech. Project (IIT Madras), Title: “Energy-Efficient Mobile Data Collection in Wireless Sensor Networks with Delay Reduction by Wireless Communication”, May 2009.
- ▷ *Mr. Venkatesh Medabalimi*, B. Tech. Project (IIT Madras), Title: “Interference Minimization in Wireless Sensor Networks”, May 2009.

- ▷ *Mr. P. Gowrishankar*, B. Tech. Project (IIT Madras), Title: “Euclidean Space Steiner Tree Problems in Networks”, May 2009.
- ▷ *Mr. Arun Asok*, B. Tech. Project, Title: “Mobile Data Collector based approach in Wireless Sensor Networks: Performance Evaluation”, June 2008.
- ▷ *Mr. Kevin Yang*, Undergraduate Research Asst, 2005 – 2007; Finished Undergraduate Honors Thesis on Optical WDM Networks.
- ▷ *Mr. Christopher Shannon*, Undergraduate Research Asst, 2005 – 2006
- ▷ *Ms. Monica Chew*, Undergraduate Research Asst, UNCG, 1996 – 1997.
- ▷ *Mr. Larry Lydick*, Undergraduate Research Asst, UNCG, 1996 – 1997.

Other Personnel Supervised –

- ▷ *Mr. P. Ramakrishna*, Nov. 2009 – July 2011, Project Associate, IIT Madras
- ▷ *Ms. S. Anusha*, Sep. 2009 – present, Project Associate, IIT Madras, **Winner of “Honorable Mention” Award in Short Paper Category at IEEE ANTS Conference, Bangalore, India, Dec. 2011**
- ▷ *Dr. Yang Qin*, Dec. 1999 – Nov. 2000, Post Doctoral Associate, WSU, (Presently faculty member at Nanyang Technological University, Singapore)
- ▷ *Mr. Jian Chuan Lu*, Mar. 2000 – Mar. 2001, Visiting Scholar, WSU, (Associated with SWIET, China)

TEACHING

Courses Taught

Undergraduate

- ▷ Intro. to Computer Networks
- ▷ Intro to. Operating Systems
- ▷ Network Security
- ▷ Computer Security
- ▷ Computer Architecture and Organization
- ▷ Programming Languages and Design
- ▷ Software Engineering
- ▷ Assembly Language Programming
- ▷ Introduction to Programming using C
- ▷ Numerical Analysis

Graduate

- ▷ Adv. Computer Networks
- ▷ Adv. Operating Systems
- ▷ Network Security
- ▷ Computer Security
- ▷ Optical Networking
- ▷ Mobile Computing
- ▷ Research Skills for Comp. Science
- ▷ Perf. Evaluation of Comp. Systems
- ▷ Software Engg. Theory & Practice

New Courses Developed

- ▷ CMSC 426/626: Principles of Computer Security
- ▷ CMSC 487/687: Introduction to Network Security
- ▷ CMSC 685: Optical Networks
- ▷ CptS/EE 557: Advanced Computer Networks

BOOKS

1. Byrav Ramamurthy, George Rouskas and **K. M. Sivalingam**, “Next-Generation Internet Architectures and Protocols”, An Edited Book, Cambridge University Press, ISBN: 9780521113687, Jan. 2011.
2. **K. M. Sivalingam** and Suresh Subramaniam, “Emerging Optical Network Technologies”, An Edited Book, Springer Publishing, August 2004.
3. C. S. Raghavendra, **K. M. Sivalingam** and Ty Znati, “Wireless Sensor Networks”, An Edited Book, Kluwer (now Springer) Academic Publishers, May 2004.
4. **K. M. Sivalingam** and Suresh Subramaniam, “Optical WDM Networks: Principles and Practice”, An Edited Book, Kluwer Academic Publishers, March 2000.

PEER-REVIEWED WORKS**JOURNAL ARTICLES**

Appeared in Print or Proofs Completed

1. S. Y. Yerima, G.P. Parr, S. McClean, P. J. Morrow and K. Sivalingam, “Design and Implementation of A Measurement-Based Policy-Driven Resource Management Framework for Converged Networks”, *ICTACT Journal on Communication Technology*, Special Issue on Next Generation Wireless Networks and Applications, Vol. 2, No. 2, 2011.
2. Sookyoung Lee and **K. M. Sivalingam**, “An Efficient One-time Password Authentication Scheme Using a Smart Card”, in *Inderscience International Journal of Security and Networks*, Vol. 4, No. 3, pp. 145–152, 2009.
3. Santosh Pandey, Shaoqiang Dong, Prathima Agrawal and **K. M. Sivalingam** “On Performance of Node Placement Approaches for Hierarchical Heterogeneous Sensor Networks”, in *ACM/Springer Mobile Networks and Applications*, vol. 14, pp. 401-414, April 2009.
4. Mahesh Sivakumar, Jing Fang, Arun Somani and **K. M. Sivalingam**, “Design and Analysis of Partial Protection Mechanisms in Groomed Optical WDM Mesh Networks”, in *OSA Journal of Optical Networking, Special issue on Reliability Issues in Optical Networks*, vol. 7, no. 6, doi:10.1364/JON.7.000617, pp. 617-634, 2008.
5. Mahesh Sivakumar and **K. M. Sivalingam**, “Design of Grooming Architectures for Optical WDM Mesh Networks: Limited Grooming with Electronic Wavelength Conversion”, in *Springer Journal of Photonic Network Communications*, 2008, <http://dx.doi.org/10.1007/s11107-008-0119-0>.
6. Manoj Sivakumar and **K. M. Sivalingam**, “A Routing Algorithm Framework for Survivable Optical Networks based on Resource Consumption Minimization”, in *IEEE/OSA Journal of Lightwave Technology*, Vol. 25, No. 7, pp. 1684–1692, 2007.
7. Ramakrishna Shenai and **K. M. Sivalingam**, “Performance Study of IP and SONET Grooming in Optical WDM Mesh Networks”, in *OSA Journal of Optical Networking*, Vol. 6, No. 6, pp. 568-583, 2007.
8. Subalakshmi Venugopal, Wesley Chen, T. Todd and **K. M. Sivalingam**, “A Rendezvous Reservation Protocol for Energy Constrained Wireless Infrastructure Networks”, in *ACM/Springer Wireless Networks Journal*, Vol. 13, No. 1, pp. 93 – 105, February 2007.
9. Piyush Naik, Karthikeyan Ravichandran and **K. M. Sivalingam**, “Cryptographic Key Exchange based on Locating Information”, in *Elsevier Pervasive and Mobile Computing*, Vol. 3, No. 1, pp. 15 – 35, Jan. 2007.
10. Mahesh Sivakumar and **K. M. Sivalingam**, “On Surviving Dual-Link Failures in Path Protected Optical WDM Mesh Networks”, in *Elsevier Optical Switching and Networking*, vol. 3, no. 2, pp. 71–88, Aug. 2006.

11. Uttara Korad and **K. M. Sivalingam**, “Reliable Data Delivery in Wireless Sensor Networks using Distributed Cluster Monitoring”, in *InderScience International Journal of Security and Networks*, Vol. 1, Nos. 1/2, pp. 75–83, 2006.
12. Sunil Gowda, Manoj Sivakumar and **K. M. Sivalingam**, “Protection Mechanisms for Optical WDM Networks based on Wavelength Converter Multiplexing and Backup Path Reallocation Techniques”, in *Springer Journal of Photonic Network Communications*, Vol. 12, pp. 65-78, Jul. 2006.
13. Mahesh Sivakumar, **K. M. Sivalingam** and Suresh Subramaniam, “On Factors Affecting the Performance of Dynamically Groomed Optical WDM Mesh Networks”, in *Springer Journal of Photonic Network Communications*, Vol. 12, pp. 15–28, Jul. 2006.
14. Jin Ding, **K. M. Sivalingam**, Bo Li and Yueming Hu, “Design and Analysis of an Integrated MAC and Routing Protocol Framework for Wireless Sensor Networks”, in *International Journal on Ad Hoc & Sensor Wireless Networks*, Vol. 2, pp. 81–103, 2006.
15. Chonggang Wang, Bo Li, **K. M. Sivalingam** and Kazem Sohraby, “Scalable Multiple Channel Scheduling with Optimal Utility in Wireless Local Area Networks”, in *ACM Wireless Networks Journal*, vol. 12, No. 2, pp. 189–198, March 2006.
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CONFERENCE PROCEEDINGS

Invited papers

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Regular papers

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58. Ramakrishna Shenai, Nilesh Bhide and **K. M. Sivalingam**, “Performance Analysis of an Adaptive Wavelength Partitioning Scheme for providing Quality of Service in Optical WDM networks”, in *IASTED International Conference on Wireless and Optical Communications (WOC 2002)*, (Banff, Canada), July 2002.
59. Bo Wen and **K. M. Sivalingam**, “Routing, Wavelength and Time-Slot Assignment in Time Division Multiplexed Wavelength-Routed Optical WDM Networks”, in *IEEE International Conference on Computer Communications (INFOCOM)*, (New York, NY), April 2002.
60. S. Lindsey, C. Raghavendra and **K. M. Sivalingam**, “Data Gathering in Sensor Networks using the Energy Delay Metric”, in *International Workshop on Parallel and Distributed Computing Issues in Wireless Networks and Mobile Computing*, (San Francisco, CA), Apr. 2001.
61. Yang Qin, **K. M. Sivalingam** and Bo Li, “QoS for Virtual Private Networks (VPN) over Optical WDM Networks”, in *SPIE/IEEE/ACM OptiComm conference*, (Dallas, TX), Oct. 2000.
62. Manav Mishra, Erik Johnson, and **K. M. Sivalingam**, “Scheduling in Optical WDM Networks using Hidden Markov Chain-based Traffic Predictors”, in *IEEE International Conference on Networks*, (Singapore), Sep. 2000, Won the **BEST PAPER AWARD**.

63. Tibor Fabry-Asztalos, Nilesh Bhide and **K. M. Sivalingam**, “Adaptive Weight Functions for Shortest Path Routing Algorithms for Multi-Wavelength Optical WDM Networks”, in *Intl. Conference on Computer Communications (ICC)*, (New Orleans, LA), Jun. 2000.
64. Nilesh Bhide and **K. M. Sivalingam**, “Design of OWns: Optical Wavelength Division Multiplexing (WDM) Network Simulator”, in *SPIE Optical Networks Workshop*, (Dallas, TX), Jan. 2000.
65. Satish Damodaran and **K. M. Sivalingam**, “Scheduling in Wireless Networks with Multiple Transmission Channels”, in *International Conference on Networks Protocols (ICNP)*, (Toronto, Canada), Nov 1999.
66. Indu Mahadevan and **K. M. Sivalingam**, “Quality of Service in Wireless Networks based on Differentiated Services Architecture”, in *International Conference on Computer Communication Networks (IC3N)*, (Boston, MA), Oct 1999.
67. Manav Mishra and **K. M. Sivalingam**, “Scheduling in WDM Networks with Tunable Transmitter and Tunable Receiver Architecture”, in *NetWorld+Interop Engineers Conference*, (Las Vegas, NV), May 1999.
68. **K. M. Sivalingam** and V. Rajaravivarma, “Education of Wireless and ATM Networking Concepts Using Hands-On Laboratory Experience”, in *ACM Special Interest Group in Computer Science Education (SIGCSE) Technical Symposium*, (New Orleans, LA), pp. 114–118, Mar. 1999.
69. P. Ramanathan, **K. M. Sivalingam**, P. Agrawal and S. Kishore, “Resource allocation during handoff through dynamic schemes for mobile multimedia wireless networks”, in *IEEE International Conference on Computer Communications (INFOCOM)*, (New York, NY), Mar. 1999.
70. I. Mahadevan and **K. M. Sivalingam**, “An Architecture for QoS guarantees and Routing in Wireless/Mobile Networks”, in *First Intl. Workshop on Wireless Mobile Multimedia*, (Dallas, TX), pp. 11–20, Oct. 1998.
71. B. Daines, J. Liu, **K. M. Sivalingam**, I. Mahadevan, S. Dai, K. Stearns, I. Verigin, and T. Matsumara, “Design and Evaluation of A Gigabit Ethernet Network”, in *Intl. Conference on Parallel and Distributed Computing and Systems*, (Las Vegas, NV), pp. 263–268, Oct. 1998.
72. Shaline Kishore, Jyh-Cheng Chen, **K. M. Sivalingam**, and P. Agrawal, “Battery Power Level Aware MAC Protocol for CDMA Wireless Networks”, in *IEEE International Conference on Universal Personal Communications (ICUPC)*, (Florence, Italy), pp. 967–971, Oct. 1998.
73. J.-C. Chen, **K. M. Sivalingam**, P. Agrawal, and R. Acharya, “On Scheduling of Multimedia Services in a Low-Power MAC for Wireless ATM Networks,” in *Proc. IEEE Personal, Indoor, Mobile Radio Communications (PIMRC)*, (Boston, MA), Sept. 1998.
74. P. Agrawal, J.-C. Chen, S. Kishore, P. Ramanathan, and **K. M. Sivalingam**, “Battery Power Sensitive Video Processing in Wireless Networks,” in *Proc. IEEE Personal, Indoor, Mobile Radio Communications (PIMRC)*, (Boston, MA), Sept. 1998.
75. I. Mahadevan and **K. M. Sivalingam**, “An Experimental Architecture for providing QoS guarantees in Mobile Networks using RSVP,” in *Proc. IEEE Personal, Indoor, Mobile Radio Communications (PIMRC)*, (Boston, MA), Sept. 1998.
76. J.-C. Chen, **K. M. Sivalingam**, P. Agrawal, and S. Kishore, “A Comparison of MAC Protocols for Wireless Local Networks Based on Battery Power Consumption,” in *IEEE International Conference on Computer Communications (INFOCOM)*, (San Francisco, CA), pp. 150 – 157, Mar. 1998.
77. **K. M. Sivalingam**, J. Wang, X. Wu, and M. Mishra, “Improved On-line Scheduling Algorithms for Optical WDM Networks”, in *Discrete Mathematics and Theoretical Computer Science (DIMACS) Workshop on Multichannel Optical Networks*, (New Brunswick, NJ), pp. 43 – 61, Mar. 1998.
78. V. Rajaravivarma and **K. M. Sivalingam**, “Next generation ATM communication network in the class room”, in *30th IEEE Southeastern symposium on system theory*, (Morgantown, WV), pp. 10 – 14, Mar. 1998.

79. Kathy Fall, Prathima Agrawal and **K. M. Sivalingam**, “Survey of Wireless Network Interfaces for Mobile Computing Devices”, in *IEEE International Conference on Personal Wireless Communications (ICPWC)*, (Mumbai, India), Dec. 1997.
80. Shalinee Kishore, Prathima Agrawal, **K. M. Sivalingam** and J-C. Chen, “MAC Layer Scheduling Strategies during handoff for wireless multimedia information networks”, in *IEEE International Conference on Personal Wireless Communications (ICPWC)*, (Mumbai, India), Dec. 1997.
81. **K. M. Sivalingam**, Mani Srivastava, Prathima Agrawal and Jyh-Cheng Chen, “Low-power access protocols based on scheduling for Wireless and Mobile ATM networks”, in *IEEE International Conference on Universal Personal Communications (ICUPC)* (San Diego, CA), pp. 429–433, Oct. 1997.
82. **K. M. Sivalingam**, M. Srivastava and P. Agrawal, “Low power link and access protocols for wireless multimedia networks”, in *IEEE Vehicular Technology Conference*, (Phoenix, AZ), pp. 1331–1335, May 1997.
83. J-C. Chen, **K. M. Sivalingam** and P. W. Dowd, “A Framework for Comparative Analysis of Channel Access Protocols for Wireless ATM Networks Supporting Multimedia Traffic”, in *IEEE International Conference on Universal Personal Communications (ICUPC)*, (Cambridge, MA), pp. 281–285, Sep. 1996.
84. **K. M. Sivalingam**, “On WDM-ATM Network Architectures”, in *Midwest Symposium on Circuits and Systems*, Ames, IA, pp. 1212–1215, Aug. 1996.
85. **K. M. Sivalingam** and P. W. Dowd, “A Lightweight Media Access Protocol for WDM-Based Distributed Shared Memory System”, in *IEEE International Conference on Computer Communications (INFOCOM)*, (San Francisco, CA), pp. 946–953, Mar. 1996.
86. **K. M. Sivalingam** and Jie Wang, “Performance of a MAC Protocol for WDM Networks with On-Line Scheduling”, in *IEEE International Conference on Computer Communications (INFOCOM)* (San Francisco, CA), pp. 1234–1241, Mar. 1996.
87. Bo Li and **K. M. Sivalingam**, “Channel Access Protocols for High Speed LANs Using WDM: A Comparative Study”, in *Proc. SPIE Conference on All-Optical Communications Systems: Architecture, Control, and Network Issues*, (Philadelphia, PA), pp. 283–294, Oct. 1995.
88. **K. M. Sivalingam**, “Hybrid Media Access Protocols for a DSM system Based on Optical WDM Networks”, in *Fourth IEEE International Symposium on High Performance Distributed Computing*, (Pentagon City, VA), pp. 40–47, Aug. 1995.
89. P. W. Dowd and **K. M. Sivalingam**, “A Multi-Level WDM Access Protocol for an Optically Interconnected Parallel Computer”, in *IEEE International Conference on Computer Communications (INFOCOM)*, (Toronto, Canada), pp. 400–409, June 1994.
90. **K. M. Sivalingam** and P. W. Dowd, “A Performance Study of Photonic Local Area Network Topologies”, in *International Symposium on Modeling and Simulation of Computer and Telecommunications Systems (MASCOTS)*, (Durham, NC), pp. 79–83, Jan. 1994.
91. **K. M. Sivalingam** and P. W. Dowd, “Latency Hiding Strategies for Media Access Protocols for WDM Photonic Networks”, in *26th Annual IEEE Simulation Symposium*, (Washington DC), pp. 68–77, Mar. 1993.
92. **K. M. Sivalingam**, K. Bogineni, and P. W. Dowd, “Design and performance analysis of pre-allocation protocols for WDM photonic networks,” in *SPIE (High-Speed Fiber Networks and Channels)*, (Boston, MA), vol. 1784, pp. 193–204, Sept. 1992.
93. **K. M. Sivalingam**, K. Bogineni, and P. W. Dowd, “Pre-allocation media access control protocols for multiple access WDM photonic networks,” in *ACM Special Interest Group on Computer Communications (SIGCOMM) Conference*, (Baltimore, MD), pp. 235–246, Aug. 1992.

NON PEER-REVIEWED WORKS

PATENTS ASSIGNED

1. “CDMA Mobile Station Wireless transmission power management with adaptive scheduling priorities based on battery power level”, PATENT Number 6,072,784; with P. Agrawal, J. Chen, and S. Kishore, June 2000; Filed by AT&T Corporation.
2. “Adaptive frequency channel assignment based on battery power level in wireless access protocols”, PATENT Number 5,974,327; with P. Agrawal and S. Kishore, Oct. 1999; Filed by AT&T Corporation.
3. “Adaptive Scheduling Priorities based on battery power level in wireless access protocols”, PATENT Number 6,108,316; with P. Agrawal and M. Srivastava, Oct. 1999; Filed by AT&T Corporation.

OTHER PUBLICATIONS

1. **K. M. Sivalingam**, “Wireless Sensor Networks”, in *IEEE Vehicular Technology Society News Digest*, Aug. 2004.
2. **K. M. Sivalingam**, “Internet in Education”, in *Professional journal PC Computer Software in Education*, (Zrenjanin, Yugoslavia), Vol. 2, No. 1, pp. 14–19, Sep. 1998.

PRESENTATIONS

CONFERENCE TUTORIAL PRESENTATIONS

1. **K. M. Sivalingam**, Lead Coordinator and Lecturer, “TUTORIAL: Wireless Sensor Networks”, in *International Conference on Sensors and Related Networks (SenNet)*, organized by Vellore Institute of Technology / Indira Gandhi Institute of Atomic Research (IGCAR), Dec. 2007.
2. **K. M. Sivalingam**, “TUTORIAL: Wireless Sensor Networks”, in *IEEE GLOBECOM*, (San Francisco, CA), Dec. 2003.
3. **K. M. Sivalingam**, “TUTORIAL: Wireless Sensor Networks”, in *International Conference on High-Performance Computing*, (Bangalore, INDIA), Dec. 2002.
4. **K. M. Sivalingam**, “TUTORIAL: Wireless Sensor Networks”, in *IEEE MASCOTS*, (Fort Worth, TX), Oct. 2002.
5. **K. M. Sivalingam**, P. Agrawal and P. Ramanathan, “TUTORIAL: Multiple Access Protocols for Wireless and Mobile Multimedia Networks”, *IEEE Personal, Indoor, Mobile Radio Communications Conference*, (Boston, MA), Sep. 1998.
6. P. Agrawal, **K. M. Sivalingam**, and M. Srivastava “TUTORIAL: Mobile Multimedia Information Systems”, *IEEE Conference on VLSI Design*, (Chennai, India), Jan. 1998.
7. P. Agrawal, C. Sreenan, M. Srivastava, and **K. M. Sivalingam**, “TUTORIAL: Mobile Computing”, *IEEE Symposium on High-Performance Distributed Computing (HPDC)*, (Syracuse, NY), Aug. 1996.

PANEL PRESENTATIONS

1. Panel participant, “Multimedia Communications in Wireless Networks”, NSF Workshop on Future Directions in Mobile Computing and Networking Systems, Cincinnati, OH, June 1999.
2. Panel participant, “Security in Wireless Networks”, NSF Workshop on Future Directions in Mobile Computing and Networking Systems, Cincinnati, OH, June 1999.

INVITED SEMINARS AND TALKS

1. “Networking Architectures for the Smart Grid”, in *International Conference on Advanced Computing (ICoAC)*, MIT Campus, Anna University, Chennai, Dec. 2011.

2. "Target Tracking in Wireless Sensor Networks, Workshop on "Recent Trends in Wireless Sensor Networks", MIT Campus, Anna University, Chennai, Nov. 2011.
3. "Overview and Performance Study of Network Architectures for the Smart Grid", ICT aspects of SmartGrids Seminar, Norwegian University of Science and Technology (NTNU), (Trondheim, Norway), Oct. 2011.
4. "Energy-Efficient Mobile Data Collection in Wireless Sensor Networks", AICTE Sponsored QIP Short Term Course on Mobile Robots and Sensor Network, IIT Madras, Chennai, India, Mar. 2011.
5. "Target Tracking in Wireless Sensor Networks", International Conference on Information Science and Applications (ICISA), Seoul, Korea, April 2010.
6. "On Target Tracking Mechanisms in Wireless Sensor Networks", Intl. Conference on Sensors and Networks (SENNET), VIT, Vellore, India, Dec. 2009.
7. "Mobile Ad Hoc Networks", National seminar on Next Generation Wireless Communication Technologies WiNGCom, (Organized by CDAC and IEEE Kerala), Trivandrum, India, Nov. 2009.
8. "Mobile Ad Hoc Networks", DRDO CAIR Labs, Bangalore, India, Nov. 2009.
9. "Mobile Ad Hoc Networks", AICTE sponsored Staff Development Program on 'Wireless and Mobile Networks', Salem, India, Nov. 2009.
10. "Wireless Access Networks", Einstein College of Engineering, Tirunelveli, India, Oct. 2009.
11. "Energy-Efficient Mobile Data Collection in Wireless Sensor Networks", CREATENET Research Institute, Trento, Italy, Sep. 2009.
12. "Energy-Efficient Mobile Data Collection in Wireless Sensor Networks", International Conference on Trends in Industrial Measurements and Automation (TIMA), Chennai, India, Jan. 2009.
13. "Energy-Efficient Mobile Data Collection in Wireless Sensor Networks", University of California, San Diego, USA, June 2009.
14. "Research Challenges in Wireless Sensor Networks", in National Conference on Wireless Technologies, Melmaruvathur, India, Feb. 2008
15. "Data Gathering in Wireless Sensor Networks using Mobile Nodes", International Conference on Sensors and Related Networks (SenNet), Vellore Institute of Technology, Vellore, India, Dec. 2007
16. Tekes (Finland) / AFOSR Workshop on Broadband Wireless Technologies, "Mobility and WiMAX", (Washington, DC), March 2007.
17. IEEE Baltimore Section, Communications Society Chapter, "Wireless Sensor Networking", Nov. 2005.
18. Sri Sathya Sai Institute of Higher Learning, "Security Problems in Wireless Networks", Puttaparthi, INDIA, June 2005.
19. SAIC, "Optical Networking: Current and Next Generation", McLean, VA, May 2005.
20. National Security Agency, "Wireless Access Networks", Fort Meade, MD, Dec. 2004.
21. SAIC, "Wireless Access Networks", Reston, VA, Sep. 2004.
22. Intel Corporation Research Seminar, "Traffic Grooming in Optical WDM mesh networks", Hillsboro, OR, Aug. 2004.
23. Anna University – College of Engineering Guindy, "Security Problems in Wireless Networks", Chennai, INDIA, Jul. 2004.
24. Indian Institute of Science, "Security Problems in Wireless Networks", Bangalore, INDIA, Jul. 2004.
25. Universidad Nacional Autonoma de Mexico, "Design and Analysis of Energy Efficient Network Protocols for Large-Scale Wireless Sensor Networks", Mexico City, MEXICO, May 2004.

26. University of Trento, Italy, "Protection and Restoration in Optical Wavelength Division Multiplexed Networks", Trento, ITALY, Jan. 2004.
27. Intel Corporation Research Seminar, "Protection and Restoration in Optical Wavelength Division Multiplexed Networks", Hillsboro, OR, May 2003.
28. Anna University, College of Engineering, "Sensor Networks: Overview and Challenges", Chennai, INDIA, Jan. 2003.
29. Trusted Internet Workshop (in conjunction with International Conference on High-Performance Computing), "Invited Talk - Wireless Sensor Networks Overview and Challenges", Bangalore, INDIA, Dec. 2002.
30. Cisco Optics Day Conference, "Routing, QoS support, and Multicasting in Optical WDM Networks", San Jose, CA, Sep. 2000.
31. Hong Kong University of Science and Technology, "Design and Analysis of WDM Aware Weight Functions for Shortest Path Algorithms", Hong Kong, Apr. 2000.
32. University of Washington, "Design and Analysis of WDM Aware Weight Functions for Shortest Path Algorithms", Seattle, WA, Mar. 2000.
33. University of Texas Arlington, "Design and Analysis of WDM Aware Weight Functions for Shortest Path Algorithms", Arlington, TX, Feb. 2000.
34. Alcatel USA, "Design and Analysis of WDM Aware Weight Functions for Shortest Path Algorithms", Richardson, TX, Feb. 2000.
35. Indian Institute of Science, "Design and Analysis of WDM Aware Weight Functions for Shortest Path Algorithms", Bangalore, INDIA, Jan. 2000.
36. Indian Institute of Technology (Madras), "Design and Analysis of WDM Aware Weight Functions for Shortest Path Algorithms", Chennai, INDIA, Jan. 2000.
37. Anna University, College of Engineering, "Design and Analysis of WDM Aware Weight Functions for Shortest Path Algorithms", Chennai, INDIA, Jan. 2000.
38. BBN Research (A unit of GTE), "Differentiated Services for Wireless Networks: Framework and Enhancements", Boston, MA, Apr. 1999.
39. Aerospace Corporation, "QoS Guarantees in Wireless Networks using Differentiated Services", Los Angeles, CA, Mar. 1999.
40. Microsoft, "Gigabit Ethernet: Performance Evaluation", Redmond, WA, Jul. 1998.
41. University of Maryland, "A Comparison of MAC Protocols for Wireless Local Networks Based on Battery Power Consumption", College Park, MD, Mar. 1998.
42. North Carolina State University, "Wireless ATM networks", Raleigh, NC, Nov. 1996.
43. University of North Texas, "High-Speed Communication Protocols for All-Optical Computer Networks", Denton, TX, Apr. 1995.
44. University of North Carolina, "High-Speed Communication Protocols for All-Optical Wavelength Division Multiplexed Computer Networks", Charlotte, NC, Nov. 1994.

SERVICE

University Service

- ▷ Member, Board of Studies, Vellore Institute of Technology: 2010 – present

- ▷ Member, IIT Madras Research Park Council: 2010 – present
- ▷ Member, Board of Academic Research: 2010 – present, IIT Madras
- ▷ Faculty Advisor: M.S./Ph.D. (2008 Batch), M. Tech. (2007 and 2011 Batches), B. Tech. (2010 Batch), IIT Madras
- ▷ **Graduate Program Director** (Computer Science): 2003 – 2007, UMBC
- ▷ Member, Course Scheduling Committee: Spr. 2003, Spr. 2004, UMBC
- ▷ Member, Faculty Search Committee: 2002-2003, UMBC; 1999, 2000, WSU; 1996, 1997, UNCG
- ▷ **Graduate Studies Coordinator** (Computer Science): 2001 – 2002, WSU
- ▷ **Chair**, Faculty Third-year Progress Review Committee: 2002, WSU
- ▷ **Chair**, Computer Science Curriculum Committee: 2000, WSU
- ▷ Member, Computer Science Curriculum Committee: 1997 – 1999, 2001 – 2002, WSU
- ▷ Member, Computer Engineering Curriculum Committee: 2002, WSU
- ▷ Member, EECS Director Search Committee: 1999 – 2000, WSU
- ▷ Member, Computer Systems Advisory Committee: 1998 – 2000, WSU
- ▷ Member, College Committee on Instruction Technology: 1996 – 1997, UNCG
- ▷ **Chair**, Personnel Evaluation Committee, 1997, UNCG
- ▷ Member, Personnel Evaluation Committee: 1996 (Member)
- ▷ **Chair**, Dept. Webpage Committee: 1997, UNCG
- ▷ Member, Graduate Program Development Committee, 1994 – 1997, UNCG
- ▷ Member, Undergraduate Curriculum Committee, 1994 – 1997 UNCG
- ▷ **Coach**, ACM Prog. Contest Teams, 1995 – 1996, UNCG
- ▷ Member, Graduate Admissions Committee, 1991 – 1993, SUNY Buffalo
- ▷ Graduate Student Association Senator for Computer Science Department, 1991 – 1993, SUNY Buffalo

Editorial Service

- ▷ **Editor-in-Chief**, ICST Transactions on Ubiquitous Environments, (<http://icst.org/ubiquitous-environments>), 2010 - present.
- ▷ **Member of Editorial Board**, *ACM Wireless Networks Journal (WINET)*, (<http://www.kluweronline.com/issn/1022-0038>), Oct. 2003 – present.
- ▷ **Member of Editorial Board**, *IEEE Transactions on Mobile Computing*, (<http://www.computer.org/tmc>), Nov. 2003 – Dec. 2007.
- ▷ **Member of Editorial Board**, *Elsevier Optical Switching and Networking Journal (OSN)*, (<http://www.elsevier.com/locate/osn>), April 2005 – Dec. 2010.
- ▷ **Member of Editorial Board**, *InderScience International Journal of Security and Networks (IJSN)*, (<http://www.inderscience.com/browse/index.php?journalCODE=ijsn>), June 2005 – Dec. 2010.
- ▷ **Member of Editorial Board**, *Journal on Ad Hoc and Sensor Wireless Networks*, (<http://www.oldcitypublishing.com/AHSWN/AHSWN.html>), Oct. 2004 – Dec. 2010.
- ▷ **Member of Editorial Board**, *International Journal of Vehicular Technology*, (<http://www.hindawi.com/journals/ijvt>), 2006 – 2008.

- ▷ **Member of Editorial Board**, *KICS Journal of Communications and Networks* (<http://jcn.or.kr>), Sep. 2002 – 2009.
- ▷ Guest Co-Editor, *Journal of High Speed Networks (JHSN)*, Special Issue on “Selected papers from TIW-2004 workshop”, 2005.
- ▷ Guest Co-Editor, *ACM Mobile Networks and Applications Journal (MONET)*, Special Issue on “Wireless Sensor Networks”, August 2005.
- ▷ Guest Co-Editor, *Journal of High Speed Networks (JHSN)*, Special Issue on “Selected papers from TIW-2003 workshop”, Dec. 2004.
- ▷ Guest Co-Editor, *ACM Mobile Networks and Applications Journal*, Special Issue on “Wireless Sensor Networks”, 2003.
- ▷ Lead Guest Co-Editor, Special Issue on “Protocols for Next generation optical WDM Networks”, *IEEE Journal of Selected Areas in Communications*, Oct. 2000.
- ▷ Co-Editor for Book Reviews, *SPIE Optical Networks Magazine*, Sep. 1999 – Dec 2003.

Conference Committees and Other Service

Steering Committee, General Co-Chair, TPC Co-Chair Roles

- ▷ **General Co-Chair**, Fourth Annual IEEE Conference on Advanced Telecommunication Networks and Systems (ANTS), Mumbai, India, Dec. 2010.
- ▷ **Registration Co-Chair**, ACM SIGCOMM, New Delhi, India, Aug. 2010.
- ▷ **Technical Program Co-Chair**, National Conference on Communications (NCC), Chennai, India, Jan. 2010.
- ▷ **Technical Program Co-Chair**, International Conference on Distributed Computing and Networking (ICDCN), Kolkata, India, Jan. 2010.
- ▷ **Technical Program Co-Chair**, Third Annual IEEE Conference on Advanced Telecommunication Networks and Systems (ANTS), New Delhi, India, Dec. 2009.
- ▷ **Technical Program Co-Chair**, Twenty-Seventh Annual IEEE International Conference on Computer Communications (**IEEE INFOCOM**), Phoenix, AZ, 2008. *This is a highly prestigious and selective conference and is considered as one of the premier conferences in computer networking. For 2008, the number of submissions was around 1,160 FULL length papers, out of which 236 were selected.*
- ▷ **General Chair**, Third Annual IEEE International Conference on Sensor and Ad Hoc Communications and Networks (SECON), Reston, VA, Sep. 2006.
- ▷ **Steering Committee Co-Chair**, ICST/CreateNet International Conference on Security and Privacy for Emerging Areas in Communication Networks (SecureComm), 2005 – 2010.
- ▷ **Steering Committee Co-Chair**, Annual ICST/CreateNet International Conference on Broadband Networks (BroadNets), 2004 – 2010.
- ▷ **Steering Committee Co-Chair**, Fourth Annual International Workshop on Trusted Internet, in conjunction with International Conference on High Performance Computing (HiPC: www.hipc.org), Goa, India, Dec. 2005.
- ▷ **General Co-Chair**, Second Annual International Conference on Mobile and Ubiquitous Systems: Networking and Services, San Diego, CA, Jul. 2005.
- ▷ **General Co-Chair**, Third Workshop on Trusted Internet, in conjunction with Tenth International Conference on High Performance Computing, Bangalore, India, Dec. 2004.

- ▷ **General Co-Chair**, ACM International Workshop on Mobility Management and Wireless Access Protocols, in conjunction with ACM MobiCom 2004, Philadelphia, PA, Sep. 2004.
- ▷ **Technical Program Co-Chair**, First IEEE International Conference on Sensor and Ad Hoc Communications and Networks (SECON), San Jose, CA, Oct. 2004.
- ▷ **Technical Program Chair**, Second Workshop on Trusted Internet, in conjunction with Tenth International Conference on High Performance Computing, Hyderabad, India, Dec. 2003.
- ▷ **General Co-Chair**, Fourth Annual OptiComm – Optical Networking and Communications Conference, Dallas, TX, Oct. 2003
- ▷ **General Co-Chair**, Second ACM International Workshop on Wireless Sensor Networks and Applications, in conjunction with ACM MobiCom 2003, San Diego, CA, Sep. 2003
- ▷ **Workshop Co-Chair**, First ACM International Workshop on Wireless Sensor Networks and Applications, in conjunction with ACM MobiCom 2002, Atlanta, GA, Sep. 2002
- ▷ **Technical Program Co-Chair**, Third Annual SPIE OptiComm – Optical Networking and Communications Conference, Boston, MA, Jul. 2002

Other Organizing Roles

- ▷ Panel Chair, IEEE 2nd IEEE International Symposium on Advanced Networks and Telecommunication Systems (ANTS) – Mumbai, India, Dec. 2008
- ▷ Posters/Demo Session Co-Chair, IEEE International Conference on Computer Communications (INFOCOM) – Miami, FL, Mar. 2005
- ▷ Tutorial Co-Chair, IEEE International Conference on Computer Communications (INFOCOM) – Hong Kong, Mar. 2004
- ▷ Tutorial Chair, IEEE International Conference on Mobile Data Management, Berkeley, CA, Jan. 2004
- ▷ Tutorial Chair, Tenth IEEE/ACM International Symposium on Modeling, Analysis and Simulation of Computer and Telecommunication Systems (MASCOTS), Dallas, TX, Oct. 2002
- ▷ Publication and Publicity Co-Chair, ACM SIGMOBILE Seventh Annual International Conference on Mobile Computing and Networking (MobiCom), Rome, Italy, Jul. 2001
- ▷ Tutorial Chair, SPIE/IEEE/ACM OptiComm, Optical Networking Conference – Denver, CO, Aug. 2001; and Dallas, TX Oct. 2000
- ▷ Publicity Chair, Workshop on Optical Networks, Dallas, TX, Jan. 2000
- ▷ Tutorial Co-Chair, ACM Fifth Annual International Conference on Mobile Computing and Networking (Mobi-com), Seattle, WA, Aug. 1999
- ▷ Finance Chair, Seventh IEEE/ACM International Symposium on Modeling, Analysis and Simulation of Computer and Telecommunication Systems (MASCOTS), College Park, MD, Oct. 1999
- ▷ Publicity Chair, ACM First International Workshop on Wireless Mobile Multimedia (WOWMOM), Dallas, TX, Oct. 1998
- ▷ **Member of Technical Program Committee:**
 - ★ IEEE International Conference on Computer Communications (INFOCOM) – 1997, 2004, 2006, 2007, 2009
 - ★ IEEE Intl. Conf. on Communications (ICC), 2003, 2004, 2006, 2007, 2008, 2009
 - ★ IEEE International Symposium on Advanced Networks and Telecommunication Systems (ANTS), 2007, 2008

- ★ ICST / CreateNet International Conference on Broadband Networks and Communications (BroadNets), 2004 – 2008
 - ★ IEEE Global Telecommunications Conference (GLOBECOM), 2003 – 2009
 - ★ IEEE International Conference on Sensor and Ad Hoc Communications and Networks (SECON), 2005, 2007, 2008
 - ★ IEEE International Conference on Mobile Ad Hoc and Sensor Systems (MASS), 2004, 2008
 - ★ IEEE International Conference on Wireless and Mobile Computing, Networking and Communications, 2008
 - ★ IEEE Conference on Local Computer Networks (LCN), 2008
 - ★ IEEE Workshop on Mission Critical Networking (MCN), 2007-2008
 - ★ IEEE Wireless Communications and Networking Conference (WCNC), New Orleans, LA, Mar. 2005
 - ★ IEEE International High Performance Computing Conference (HiPC 2004), Bangalore, India, Dec. 2004
 - ★ Fourth International Workshop on Design of Reliable Communication Networks (DRCN), Banff, Alberta, Canada, Oct. 2003
 - ★ IEEE/ACM International Symposium on Modeling, Analysis and Simulation of Computer and Telecommunication Systems (MASCOTS) – Dallas, TX, Oct. 2002; Orlando, FL, Oct. 2003
 - ★ IEEE Workshop on High-Performance Switching and Routing (HPSR) – Torino, Italy, June 2003; Kobe, Japan, May 2002
 - ★ IEEE Intl. Conf. on Communications (ICC) – General Networking, Anchorage, Alaska, May 2003
 - ★ IEEE International High Performance Computing Conference (HiPC 2002), Bangalore, India, Dec. 2002
 - ★ IEEE Symposium on Optical Communications, Chengdu, China, Jul. 2002
 - ★ IEEE International Conference on Network Protocols (ICNP), Riverside, CA, Nov. 2001
 - ★ ACM SIGMOBILE Seventh Annual International Conference on Mobile Computing and Networking (MobiCom), Rome, Italy, Jul. 2001
 - ★ SPIE/IEEE/ACM OptiComm – Optical Networking Conference – Denver, CO, Aug. 2001; and Dallas, TX Oct. 2000
 - ★ ACM International Workshop on Wireless Mobile Multimedia (WOWMOM), 1999 and 2000
 - ★ ACM Workshop on Modeling, and Simulation of Wireless and Mobile Systems (MSWIM), 1999 – 2002
 - ★ IEEE Intl. Conference on Computer Communications and Networks (IC3N), 1999 and 2000
 - ★ Mobile Data Access '99 workshop, Hong Kong, Dec. 1999
- ▷ Moderator, comp.simulation Internet newsgroup, 1996 – 2000

Technical Reviewer

- ▷ NSF Panelist (2000 – present) and Proposal reviewer
- ▷ Science Foundation Ireland (SFI) – Proposal Reviewer
- ▷ Hong Kong Research Grants Council – Proposal Reviewer
- ▷ Several International Journals, including IEEE and ACM Journals
- ▷ Several International Conferences, including IEEE and ACM Conferences

Session Chair

- ▷ Advanced Networks and Telecommunications Systems (ANTS) Conference, Mumbai, India, Dec. 2007, Dec. 2009, Dec. 2010

- ▷ International Conference on Sensors and Related Networks (SenNet), Vellore Institute of Technology, Vellore, India, Dec. 2007
- ▷ IEEE INFOCOM, Anchorage, AK, May 2007
- ▷ International Conference on Security and Privacy for Communication Networks (Securecomm), Aug. 2006
- ▷ International Conference on Broadband Networks (BroadNets), Boston, MA, Oct. 2005
- ▷ International Conference on Broadband Networks (BroadNets), San Jose, CA, Oct. 2004
- ▷ IEEE INFOCOM, Miami, FL, March 2005
- ▷ IEEE INFOCOM, Hong Kong, March 2004
- ▷ IEEE Intl. Conf. on Communications (ICC) – General Networking, Anchorage, Alaska, May 2003
- ▷ IEEE Intl. Conf. on Communications (ICC) – Optical Networking Symposium, Anchorage, Alaska, May 2003
- ▷ IEEE First International Conference on Pervasive Computing and Communications, Dallas, TX, Mar. 2003
- ▷ Tenth IEEE/ACM International Symposium on Modeling, Analysis and Simulation of Computer and Telecommunication Systems (MASCOTS), Dallas, TX, Oct. 2002
- ▷ ACM SIGMOBILE Seventh Annual International Conference on Mobile Computing and Networking (MobiCom), Rome, Italy, Jul. 2001
- ▷ SPIE Optical Networks Workshop, Dallas, TX, Jan. 2000
- ▷ ACM Workshop on Modeling, and Simulation of Wireless and Mobile Systems (MSWIM), Seattle, WA, Aug. 1999
- ▷ IEEE International Conference on Universal Personal Communications (ICUPC), San Diego, CA, Oct. 1997
- ▷ IEEE International Conference on Computer Communications (INFOCOM), Kobe, Japan, Apr. 1997
- ▷ Third International Symposium on Modeling, Analysis and Simulation of Computer and Telecommunication Systems Conference, Raleigh, NC, Jan. 1995
- ▷ 26th Annual Simulation Symposium, Washington DC, Mar. 1993