

CURRICULUM VITAE

Krishna Moorthy Sivalingam, Ph.D.

IEEE Fellow, INAE Fellow, ACM Distinguished Scientist

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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 (CEG), Anna University, Madras (now Chennai), India	Computer Science & Engineering

Experience in Higher Education

2007 present	–	Dept. of CSE, Indian Institute of Technology (IIT) Madras, Chennai, INDIA	Institute Chair Professor (3/2019 onwards); Professor (3/2009 onwards); Head of Dept (2/2016 – 2/2019); Associate Professor (7/2007 – 3/2009)	Computer Science & Engineering
2002 – 2007		Dept. of CSEE, University of Maryland, Baltimore County (UMBC), USA	Professor (July 2006 – Aug. 2009); On Leave from UMBC (2007–2009); 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		Dept. of Math. Sciences, University of North Carolina at Greensboro (UNCG), USA	Assistant Professor	Computer Science
1988 – 1994		SUNY Buffalo, New York, USA	Teaching/Research Assistant	Computer Science
<u>VISITING</u>				
May-June 2015		University of New South Wales, Sydney, Australia		Dept. of CSE
Summers of 2005, 2006, 2008, 2010–2015		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 2019 – present	SSSIHL, Puttaparthi, INDIA	<i>Adjunct Professor</i>
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

- ▷ **IIT Madras Mid-Career Research and Development Award (IRDA)**, April. 2017 (Awarded to two faculty members in this category, per year)
- ▷ **Indian National Academy of Engineering (INAE) Fellow**, Nov. 2015
- ▷ **ACM Distinguished Scientist**, Aug. 2014
- ▷ **IEEE Fellow**, Jan. 2014; **SENIOR** Member of IEEE, Oct. 2000
- ▷ **IEEE INFOCOM Conference Distinguished TPC Member Award**, 2015 – 2017
- ▷ **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

Honors and Awards, won by Students under my guidance

7. *Dr. C. S. Ganesh*, Ph.D, *Design and Analysis of Optical Networking based Data Center Network Architectures*, Winner of **IBM Best Ph.D. Dissertation Award, CSE Dept, IIT Madras, 2017**
6. *Ms. P. R. Dhathri*, M. S. (By Research), *Network architecture supporting seamless flow mobility between LTE and WiFi networks*, Co-winner of **Biswajit Sain Memorial Prize for Best M.S. Thesis, CSE Dept, IIT Madras, 2017**
5. *Mr. P. Gireesan Namboothiri*, M.S. (by Research), *Scalable Deployment with Throughput Management and Target Tracking in Wireless Sensor Networks*, Co-winner of **Biswajit Sain Memorial Prize for Best M.S. Thesis, CSE Dept, IIT Madras, 2013**
4. *Mr. E. Vijay*, M. Tech. Project, July 2012, *Interest flooding reduction techniques in CCN and semi-CCN network architectures* **Winner of Best M. Tech. Project in CSE Dept. at IIT Madras, 2012**
3. *Mr. Bharat Udai Seth*, M. Tech. Project, 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**
2. *Mr. Surendra Sharma*, M. Tech. Project, 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**
1. *Mr. N. Srinath*, M. Tech. Project, 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**

External Research Support

32. April 2020 – April 2021, “Orchestration for Network Slicing in 5G Networks based on SDN/NFV Concepts”, VMWare University Research, USD 35,000 (INR 26.26Lakhs); PI.
31. March 2018 – March 2021, “Indigenous 5G Test Bed: Building End to End 5G Test Bed in India”, Department of Telecommunications, Co-PI; (PI: Dr. Radhakrishna Ganti, IIT Madras); Multi-institutional (IITs/IISc and National Labs); Overall project value: Approx. INR 240 Crores; IITM Project Value: Approx. INR 59.75 Crores; Networking Budget (Actual Expenses Based).
30. Sep. 2017 – Sep. 2020, INR 50.6 Lakhs (Networking part) out of INR 9.70 Crores, DRDO, “Development of a Highly Versatile Secure Very Wide-Band Wireless Communication Platform (VERSA-COMM) for Defence and Strategic Applications”, Participating faculty member (PI: Prof. Bhaskar Ramamurthi; Major partner: CeWIT, IITM).
29. March 2017 – March 2020, INR 43.9 Lakhs, “Distributed Algorithms for Dynamic Networks”, Govt. of India Department of Science & Technology (DST), Co-PI; (PI: Dr. John Augustine).
28. Oct. 2012 – April 2014, INR 51.5 Lakhs, Tata Power Company, “Development of Simulation for Tactical Communication System”, **PI** (Co-PIs: Dr. Devendra Jalihal; Dr. K. Giridhar).
27. Oct. 2012 – Sep. 2015, INR 128 Lakhs, Govt. of India Department of Science & Technology (DST), “India-UK Advanced Technology Centre (IU-ATC) of Excellence in Next Generation Networks Systems and Services: PHASE 2”, Co-PI. (UK Part funded by EPSRC; Project PIs: Prof. Ashok Jhunjunwala of IIT Madras, India and Prof. Gerard Parr of Univ. of Ulster, UK; Involves multiple institutions in India and the UK).
26. Sep. 2010 – June 2013, “Networking Technologies for the Smart Grid”, IBM Open Collaborative Research (OCR) Project, US\$30,000 (Rs. 14.65 Lakhs), **PI**.
25. June 2009 – Dec. 2012, INR 93 Lakhs, Govt. of India 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 Jhunjunwala of IIT Madras, India and Prof. Gerard Parr of Univ. of Ulster, UK).
24. Jan. 2009 – June 2011, INR 39.15 Lakhs, Tata Power Company, “Tactical Field Wireless System”, Co-PI. (PI: Dr. Devendra Jalihal; Co-PIs: Dr. K. Giridhar, Prof. Bhaskar Ramamurthi).
23. Apr. 2008 – Apr. 2010, Rs. 47.4 Lakhs, IGCAR, India, “Development of Wireless sensor Networks for Civilian Applications”, **PI**.

UMBC:

22. 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).
21. Sep. 2004 – Aug. 2005, \$15,000, National Science Foundation (NSF), “IEEE SECON Conference 2004: Travel Grant Awards”, PI.
20. 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.
19. 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.
18. Sep. 2003 – Aug. 2004, \$10,000, NSF, “OptiComm 2003: Student Travel Grants”, PI.

17. 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.
16. 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.
15. 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.

WSU Pullman:

14. 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.
13. Jan. 2001 – Dec. 2001, \$70,302, Cisco Systems University Research Program (URP), “Network Simulator for Optical Wavelength Division Multiplexed (WDM) Networks”, PI.
12. Feb. 1999 – Dec. 2001, \$176,631, Air Force Office of Scientific Research (AFOSR), “Energy efficient network protocols for wireless and mobile networks”, PI.
11. Apr. 2000 – Oct. 2000, \$40,923, Air Force Office of Scientific Research (AFOSR), “MAC and Routing Protocol Research in Self-Organizing Wireless Networks”, PI.
10. Sep. 2000 – May 2001, \$19,400, Alcatel, “Optical Burst Switching Networks”, PI.
9. 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.
8. Aug. 2000 - Aug 2001, \$10,096, Intel Corporation, “Research in Optical and Wireless Networks”, PI.
7. 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.
6. Dec. 1998 – Oct. 1999, \$32,967, Washington Tech. Center and Cascade Scientific Software, Inc., “Software development for Beowulf computer clusters”, PI.
5. 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.
4. Aug. 1997 – Aug. 1998, \$50,000, Air Force Office of Scientific Research (AFOSR), “Wireless connectivity to ATM communication grid”, Co-PI.
3. Jan. 1999 – Dec. 1999, \$3,000, Bellcore, “Architecture and design of routing IP over optical WDM networks”, PI.

UNC Greensboro:

2. 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.
1. Mar. 1996 – Dec. 1998, \$15,000, Xerox Corporation, “Network interoperability in a heterogeneous environment with isotropic resources”, PI.

Equipment and Software Grants:

6. Intel Corporation, “Optical WDM Networks Research”, \$15,839, Aug. 2002 and June 2003.
5. Microsoft Software Donation, \$9,285, Aug. 2002.

4. Hewlett-Packard equipment grant (co-PI with D. Bakken), “Distributed Quality of Service for E-Commerce”, \$236,555, June 2000.
3. Cisco equipment grant, “Instructional Facility for Next Generation Networking and Distributed Computing”, \$165,335, Oct. 1999.
2. Intel Corporation equipment grant (co-PI with D. Bakken), “Instructional Facility for Next Generation Networking and Distributed Computing”, \$22,598, Aug. 1999.
1. Microsoft Software Donation, \$2,400, Jan. 1999.

Internal Grants Received

10. April 2017 – October 2020, INR 40 Lakhs, IIT Madras Mid-Career Institute Research and Development Award (IRDA) Project, PI.
9. March 2017 – March 2018, INR 4.6 Lakhs, IIT Madras Exploratory Research Project, “A Distributed Approach to Network Function Placement in Next Generation Networks”, PI.
8. 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.
7. Aug. 2003 – July 2004, \$8,250, UMBC Special Research Initiative Support (SRIS) grant, “Ultra-wide band networking for wireless multi-hop infrastructure networks”, PI.
6. Spring 1996, \$12,000, UNCG Equipment Fund (Team grant with Bruce Landman, Sue Lea, Fred Sadri, and Jie Wang), “Mathematical Sciences Computer Laboratory”.
5. May 1996 – June 1997, \$6,000, UNCG Regular Faculty Grant, “A Coherent Interoperable Framework for Integration of Network Information Sources”, Co-PI.
4. Summer 1996, \$4,000, UNCG Summer Research Excellence Grant, “Access Protocols for Next-Generation Wireless-ATM Networks”, PI.
3. May 1995–June 1996, \$2,300, UNCG Regular Faculty Grant, “All-Optical Computer Networks: Media Access Protocols based on Multiple Pre-allocated Receivers”, PI.
2. Summer 1995, \$4,000, UNCG Summer Research Excellence Grant, “All-Optical Computer Networks: Media Access Protocols based on TDM Scheduling”, PI.
1. 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.

3. *Mr. Kavin Kumar Thangadurai* (External – Samsung), IIT Madras, 2020 – present
2. *Mr. Surendra Sharma* (External – Navy), IIT Madras, 2017 – present
1. *Mr. Anix Anbiah* (Part-Time), IIT Madras, 2015 – present

Graduated – Ph.D.

12. *Dr. Savitha Sam Abraham*, IIT Madras, Administrative Guide with Dr. Deepak Padmanabhan of Queens University (Belfast, UK) as Co-Guide; June 2020, *Dissertation: AI-based Learning Aids for Solving Kinematics Word Problems*

11. Dr. R. Madanagopal, IIT Madras, May 2020, *Dissertation*: Algorithms for Dynamic Provisioning and Capacity Optimization in Multi-Technology Transport Networks
10. Dr. Arkadeep Sen, IIT Madras, April 2020, *Dissertation*: Performance Enhancement Mechanisms for Efficient Support of Mobile Users in IEEE 802.11 Wireless Local Area Networks; Dual degrees (MS + PhD)
9. Dr. Sowmya S. Sundaram, IIT Madras, Administrative Guide with Dr. Deepak Padmanabhan of Queens University (Belfast, UK) as Co-Guide; April 2020, *Dissertation*: Representing Arithmetic Word Problems using Schemas; Dual degrees (MS + PhD)
8. Dr. Saad Yunus Sait, IIT Madras, Co-Advisor with Prof. Hema Murthy, May 2017, *Dissertation*: Organization-level Control of Abusive Bandwidth Usage
7. Dr. C. S. Ganesh, IIT Madras, Ph.D. Advisor, June 2016, *Dissertation*: Design and Analysis of Optical Networking based Data Center Network Architectures
6. Dr. S. A. V. Satyamurty, Ph.D. Co-Advisor; enrolled at Homi Bhabha National Institute (HBNI), Mumbai, India, Aug. 2014, *Dissertation*: Wireless Sensor Networks for Nuclear Reactor Applications
5. Dr. C. Vanniarajan, IIT Madras, Co-Advisor with Prof. Kamala Kritivasan, May 2014, *Dissertation*: Topology Inference and Entropy of Centrality Analysis in Computer Networks
4. Dr. Mahesh Sivakumar, UMBC, 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
3. Dr. Nilesh Bhide, Ph.D Advisor, WSU Pullman, 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
2. Dr. Indu Mahadevan, Ph.D Advisor, WSU Pullman, 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
1. Dr. Jyh-Cheng Chen, Ph.D Committee Co-Chair, May 1998, (Graduated from SUNY Buffalo; Co-advised with Dr. Raj Acharya), IEEE Fellow; ACM Distinguished Member; Professor, National Chiao Tung University, 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.)

5. Mr. Rahul Verma, M.S. (By Research) Thesis Guide.
4. Mr. Madhan Raj Kanagarathinam, M.S. (By Research) Thesis Guide.
3. Ms. Shivani Saxena, M.S. (By Research) Thesis Guide.
2. Mr. Saurav Chakraborty, M.S. (By Research) Thesis Guide.
1. Mr. Radhakrishna Kamath, M.S. (By Research) Thesis Guide.

Graduated – Master’s degree (M.S. (By Research) Theses at IIT Madras)

12. *Mr. Sandeep Kiran Pinjala*, M.S. (By Research) Thesis Guide, Sep. 2020, Title: *Access Control and Anonymous Credential Mechanisms for Security and Privacy in Internet of Things*
11. *Mr. Phanindra Palagummi*, M.S. (By Research) Thesis Guide, August 2019, Title: *Network-Initiated Handover Mechanism for 5G Networks using P4-based Programmable Data Plane Switches*
10. *Mr. Karthik Karra*, M.S. (By Research) Thesis Guide, August 2019, Title: *Providing Resiliency for Service Function Chaining in NFV Systems using a SDN-Based Approach*
9. *Ms. P. R. Dhathri*, M.S. (By Research) Project Guide, April 2016, Title: *Network architecture supporting seamless flow mobility between LTE and WiFi networks*
8. *Ms. Sakshi Chourasia*, M.S. (By Research) Project Guide, April 2016, Title: *SDN-Based Long Term Evolution (LTE) Evolved Packet Core Architecture*
7. *Mr. M. Karthick*, M.S. (by Research) Guide, Jul. 2014, Title: *Reliable Data Transfer Mechanisms for Smart Grid Wide Area Monitoring Networks*
6. *Mr. K. Narendran*, M.S. (by Research) Guide, Jul. 2014, Title: *Interference Management Techniques: Power Control and Link Adaptation*
5. *Ms. Preethi Chandur*, M.S. (by Research) Guide, Sep. 2013, *Opportunistic Scheduling Algorithms for WiMAX/LTE networks*
4. *Mr. Ganesh Patil*, M.S. (by Research) Co-Guide (Guide: Dr. Gaurav Raina, IIT Madras), Sep. 2013, *Active Queue Management (AQM) and Buffer Sizing for High-Speed Networks*
3. *Mr. C. S. Ganesh*, M.S. (by Research) Guide, Sep. 2012, *ONU power saving mechanisms in passive optical networks*
2. *Mr. Sarang Deshpande*, M.S. (by Research) Guide, May 2012, *Target Tracking in Wireless Sensor Networks: Improved Guided Navigation and Quality of Tracking Provisioning Mechanisms*
1. *Mr. P. Gireesan Namboothiri*, M.S. (by Research) Guide, Nov. 2011, *Scalable Deployment with Throughput Management and Target Tracking in Wireless Sensor Networks*, Co-winner of **Biswajit Sain Memorial Prize for Best M.S. Thesis, CSE Dept, IIT Madras, 2013**

Graduated – Master’s degree (B.Tech/M.Tech. and M.Tech. Projects)

76. *Mr. Sahil Mahajan*, M.Tech. Project Guide, June 2020, Title: *Development of Networking Subsystem for Tactical Communication Networks*
75. *Mr. Vedant Somani*, Dual-Degree (B.Tech./M.Tech.) Project Guide, June 2019, Title: *Development of UDM, UDR and Network Slicing components for Indigenous end-to-end 5G Testbed*
74. *Mr. Akshay Gadre*, Dual-Degree (B.Tech./M.Tech.) Project Guide, May 2017, Title: *Centralised approaches for static and dynamic virtual network function placement in SDN-enabled networks*
73. *Mr. R. Ranjan*, Dual Degree (B.Tech./M.Tech.), Project Co-Guide, along with Dr. Rupesh Nasre; May 2017, Title: *New Constructs for Meta-programming through source to source translation*
72. *Mr. Anuj Nayak*, M. Tech. Project Guide, July 2016
71. *Mr. I.V.V.V. Satyanarayana*, M. Tech. Project Guide, June 2016, Title: *Software Defined Network OpenFlow Based Load Balancing*
70. *Mr. Venkatram Pampana*, Dual Degree (B.Tech./M.Tech.) Project Guide, Jun. 2015, Title: *BLE: A Hybrid approach for dynamic Routing and Wavelength assignment in optically-switched data centers*
69. *Mr. R. Abhiram*, Dual Degree (B.Tech./M.Tech.) Project Guide, May 2015, Title: *Revisiting Pervasive Content Caching in Information-Centric Networks*

68. Mr. Aditya Hegde, M. Tech. Project Guide, Jul. 2014, Title: *Network Centric and User Centric Load Balancing in Wireless LTE Networks*
67. Mr. Krishna Kumar Gupta, M. Tech. Project Guide, Jul. 2014, Title: *Integration of Spectrum Management Tool with OMNET++ for a Tactical Communications System Simulation Framework*
66. Ms. Syama Varma, M. Tech. Project Guide, July 2013, *Analytical model for power saving in LTE with Discontinuous Reception Mechanism (DRX) and dynamic DRX mechanism*
65. Ms. Sakshi Patni, M. Tech. Project Guide, July 2013, *Dynamic gateway selection for load balancing in LTE networks*
64. Mr. Dhananjay Bhor, M. Tech. Project Guide, July 2013, *Design and implementation of a Smart Grid network co-simulator: renewable energy integration application based case study*
63. Ms. Pushpa Kumbhare, M. Tech. Project Guide, July 2013, *Quality of Service mechanism for Tactical Communication System*
62. Mr. Kavin Kadhirsvelan, M. Tech. Project Guide, July 2013, *A co-simulation framework for SmartGrid wide area monitoring networks*
61. Mr. Nirav Gohel, M. Tech. Project Guide, July 2013, *Dynamic routing framework for Hardware-in-the-Loop (HITL) based network simulator*
60. Mr. E. Vijay, M. Tech. Project Guide, July 2012, *Interest flooding reduction techniques in CCN AND semi-CCN network architectures* **Winner of Best M. Tech. Project in CSE Dept. at IIT Madras, 2012**
59. Mr. Sagar Joshi, M. Tech. Project Guide, July 2012, *Improvement on SECONDNET: Data Center network virtualization architecture; Winner of “Honorable Mention” Award in Long Paper Category at IEEE ANTS Conference, Chennai, India, Dec. 2013;* (Presently at VMware, Bangalore)
58. Mr. Tanmoy Das, M. Tech. Project Guide, July 2012, *Improvement on Data Center TCP*
57. Mr. R. Muthukumar, M. Tech. Project Guide, July 2012, *Performance Study of Fault tolerance mechanisms for Smart Grid networks*
56. Mr. Abhishek Gupta, M. Tech. Project Guide, July 2012, *Performance study of cryptographic algorithms in Smart Grid*
55. Mr. Aman Agrawal, M. Tech. Project Guide, July 2012, *Implementation of LTE MAC layer in OMNET++*
54. Mr. R. Rajkumar, M. Tech. Project Co-Guide (with Dr. G. Raina), July 2012, *Secure mobile payments with implementation of wireless public key infrastructure*
53. Mr. Harikrishna Patnala, M. Tech. Project Co-Guide (with Dr. G. Raina), July 2012, *Account based mobile payment system using Near Field Communication technology*
52. Mr. Srujan Bojjam, M. Tech. Project Guide Co-Guide (with Dr. G. Raina), July 2012, *Design and implementation of voice based channel for mobile payments*
51. Mr. Adhiraj Alai, Dual Degree (B. Tech./M. Tech.) Project Co-Guide (with Dr. B. Ravindran), July 2012, *Coevolution of structure and strategy in Small World graphs*
50. Mr. Kiran Kumar, M. Tech. Project Guide, Jul. 2011, *Performance Study of Distributed and Publish/Subscribe Architecture for SmartGrid Networks*
49. Mr. Rahul Kulkarni, M. Tech. Project Guide, Jul. 2011, *Wimax Based Back-Haul For Tactical Military And Disaster Area Networks*
48. Mr. A. Anand Kumar, M. Tech. Project Guide, Jul. 2011, *Target tracking with directional sensors using electronic beam steering*
47. Mr. Piyush Baranwal, M. Tech. Project Guide, Jul. 2010, *Network Architecture for Dynamic and Rapid Deployment of Wireless Broadband Services*

46. 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**
45. 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**
44. Mr. Anshu Khare, M. Tech. Project Guide, July 2009, Title: *Recovery of lost targets in wireless sensor networks*
43. Ms. Kiran Kumari, M. Tech. Project Guide, July 2009, Title: *Detailed analysis of network architectures and routing algorithms for battalion management system*
42. 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**
41. Mr. S. Sreekanth, M. Tech. Project Guide, July 2009, Title: *Guided navigation of friendly object towards mobile adversary target using wireless sensor networks*

M.Tech. projects at Other Institutions:

40. Mr. G. V. S. Shriraam Aditya, M.Tech. (SSSIHL) Project Guide, March 2015, Title: *Analytical Model for Delay in LTE with Discontinuous Reception Mechanism (DRX) and Dynamic DRX Mechanism*
39. Mr. Satyaprakash Rout, M. Tech. (SSSIHL) Project Co-Guide, March 2013, *Passive Optical Network Scheduling*
38. Mr. K. T. N. Varma, M. Tech. (SSSIHL) Project Co-Guide, March 2013, *Implementation of Long Term Evolution (LTE) Medium Access Control (MAC) Layer in OMNeT++ Simulator Using MiXiM Framework*
37. Mr. Nagendra Prasad, M. Tech. (SSSIHL) Project Co-Guide, March 2013, *Implementation of LTE PDCP sublayer in OMNeT++ using MiXiM framework*
36. Mr. Arun Sathyanarayanan, M. Tech. Project Co-Guide, Sri Sathya Sai Institute of Higher Learning, July 2012, *Implementation of LTE RLC Layer in OMNET++*
35. Mr. R. Nagarajan, M. Tech. Project Co-Guide, Sri Sathya Sai Institute of Higher Learning, July 2012, *Implementation of LTE RLC Layer in OMNET++*
34. Mr. Ritu Raj Biswal, M. Tech. Project Co-Guide, Sri Sathya Sai Institute of Higher Learning, July 2012, *Study and emulation of 10G passive optical network*
33. Mr. S. Vivek, M. Tech. Project Co-Guide, Sri Sathya Sai Institute of Higher Learning, July 2012, *Study and emulation of 10G passive optical network*
32. Mr. Chakilam Saketh Ram, M. Tech., Sri Sathya Sai Institute of Higher Learning, Project Co-Guide, Mar. 2011, *Design and Evaluation of QoS-Aware Networks for the Smart Grid*
31. Mr. Nikhil Raghavendra Reddy, M. Tech., Sri Sathya Sai Institute of Higher Learning, Project Co-Guide, Mar. 2011, *Analysis of Networks for Collection of Real-time Data in the Smart Grid*
30. Mr. Sandeep Nagar, M. Tech., Sri Sathya Sai Institute of Higher Learning, Project Guide, Feb. 2010, *Target Tracking and Noise Removal using Kalman Filters in Wireless Sensor Networks*
29. Mr. Lakshminarayana Padhi, M. Tech., Sri Sathya Sai Institute of Higher Learning, Project Guide, Feb. 2010, *Multi-path Establishment in VCAT based Next-Generation Optical WDM Networks: Differential Delay Constraint Considerations*
28. Mr. Siddartha K., M. Tech., Sri Sathya Sai Institute of Higher Learning, Project Guide, Feb. 2010, *Traffic Splitting and Differential Delay based Routing for VCAT enabled SONET/SDH Optical WDM Networks*

M.S. theses and M.Tech. projects guided during UMBC tenure:

27. Mr. Prakash Hiranandani, M.S. (Non-Thesis) Advisor, August 2008. *Project: A Greedy algorithm for mobile base station based data gathering in wireless sensor networks*
 26. Mr. Piyush Shah, M.S. Advisor, December 2007. *Thesis: Data Gathering in Wireless Sensor Networks using Multiple Mobile Data Collection Agents*
 25. Mr. Andrew Grossman, M.S. (Non-Thesis) Advisor, August 2007. *Project: Indirect Data Reporting in Wireless Sensor Networks with Multiple Mobile Nodes*
 24. Mr. Deepak Bote, M.S. Advisor, December 2006. *Thesis: Optimized Data Gathering in Ultra Wide Band based Wireless Sensor Networks using a Mobile Node*
 23. Mr. Karthikeyan Ravichandran, M.S. Advisor, August 2006. *Thesis: Design and Analysis of a Dual radio node architecture and Medium Access Control protocols for Ultra Wide Band based Sensor Networks*
 22. Mr. Sai Rupak, (Sri Sathya Sai Institute of Higher Learning), M. Tech (Computer Science), Project, Feb. 2006. *Title: IEEE 802.16 WiMax Protocol: ns2 based Implementation and Performance Evaluation for GPSS*
 21. Mr. Sai Suhas, (Sri Sathya Sai Institute of Higher Learning), M. Tech (Computer Science), Project, Feb. 2006. *Title: IEEE 802.16 Wimax : NS2 Simulator Based Implementation and Performance Analysis for GPC*
 20. Mr. Minal Mishra, M.S. Advisor, August 2005. *Thesis: Enhancing TCP Performance in Wireless Access Systems with Adaptive Modulation and Coding*
 19. Mr. Manoj Sivakumar, M.S. Advisor, May 2005. *Thesis: Routing and Wavelength Assignment Approaches for Survivable Optical Networks*
 18. Mr. Sundar P. Subramani, M.S. Advisor, May 2005. *Thesis: Reservation Based Wavelength Assignment For Sparse Groomed Optical WDM Mesh Networks*
 17. Mr. Shantanu Prasade, M.S. (Non-Thesis) Advisor, December 2004. *Project: Security in Wireless sensor networks*
 16. Ms. Uttara Korad, M.S. Advisor, December 2004. *Thesis: Efficient and Reliable Data Delivery Techniques for Wireless Sensor Networks*
 15. Mr. Piyush Naik, M.S. Advisor, August 2004. *Thesis: Cryptographic Key Distribution in Wireless Networks Based on Locationing Information*
- M.S. theses guided during WSU Pullman:**
14. Ms. Shobha Venugopal, M.S. Advisor, July 2003. *Thesis: Rendezvous reservation protocol for energy constrained wireless infrastructure networks: Impact of battery management mechanisms*
 13. Ms. Jin Ding, M.S. Advisor, July 2002. *Thesis: Design and analysis of an integrated MAC and routing protocol framework for large-scale multi-hop wireless sensor networks*
 12. Ms. Harini Krishnamurthy, M.S. Advisor, July 2002. *Thesis: Restoration mechanisms based on tunable lasers for single and multiple failures in optical wavelength division multiplexed (WDM) networks*
 11. Mr. Sunil Gowda, M.S. Advisor, July 2002. *Thesis: Protection mechanisms for fault-tolerant optical wavelength division multiplexed networks based on wavelength converter multiplexing and backup path relocation techniques*
 10. Mr. Raghava Kashyapa, M.S. Advisor, August 2001. *Thesis: Medium access control and routing protocols for data gathering using wireless sensor networks: design and analysis*
 9. 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*

8. *Ms. Sripriya Vasudevan*, M.S. Advisor, August 2001. *Thesis: Cluster based architecture and routing protocol for next generation wireless sensor networks*
7. *Mr. Ramakrishna Shenai*, M.S. Advisor, May 2001. *Thesis: Quality of Service (QoS) mechanisms for optical wavelength division multiplexed (WDM) networks*
6. *Ms. Stephanie Lindsey*, M.S. Advisor, November 2000, Microsoft, Redmond, WA. *Thesis: Energy Efficient Communications for Sensor and Ad Hoc Wireless Networks*
5. *Ms. Lifeng Chen*, M.S. Advisor, November 2000. *Thesis: Mobile-based Error Compensation Algorithms for Wireless Networks*
4. *Ms. Christine Price*, M.S. Advisor, May 2000. *Thesis: Power aware scheduling algorithms for wireless networks*
3. *Mr. Tibor Fabry-Asztalos*, M.S. Advisor, Dec. 1999. *Thesis: Shortest path routing algorithms for optical WDM networks*
2. *Mr. Satish Damodaran*, M.S. Advisor, Aug. 1999. *Thesis: Quality of Service scheduling algorithms and security protocols for wireless networks*
1. *Mr. Manav Mishra*, M.S. Advisor, May 1999. *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

Undergraduate Students –

19. *Mr. T. K. Mahesh*, B. Tech. Project (IIT Madras), August 2020, Co-guide with Dr. John Augustine as guide, *Simulation and study of a class of Peer-to-Peer networks involving committees*
18. *Mr. Harsh Gondaliya*, B. Tech. Project (SRM IST, Kattankulathur Campus, Chennai), Guide with Dr. B. Amutha, Head, CSE Dept, SRM-IST KTR, as Co-guide, June 2020, *Implementation and evaluation of Anti-Spoofing techniques on P4-enabled NETFPGA*
17. *Mr. Parthasarathy S*, B. Tech. Project (IIT Madras), June 2018, *Performance Evaluation of Proactive Ad-hoc Routing Protocols*
16. *Mr. P Prem Abhinav*, B. Tech. Project (IIT Madras), June 2018, *Wireless Device Fingerprinting*
15. *Mr. Ashwin R.*, B. Tech. Project (IIT Madras), May 2016, *A Distributed Implementation of the Graph Database System DGraph*
14. *Mr. S. Mohanaprasad*, B. Tech. Project (IIT Madras), May 2016, *Prioritising Interactive Flows in Data Center Networks with Central Control*
13. *Mr. Advait Alai*, B. Tech. Project (IIT Madras), Jul. 2011, *Quality of Service Analysis of Publish-Subscribe Network Architectures in Smart Grids*
12. *Mr. Manohar P.*, B. Tech. Project (IIT Madras), Jul. 2011, *Optimal PMU Placement considering redundancy and security issues*
11. *Mr. P. Rakesh*, B. Tech. Project (IIT Madras), June 2010, *Networking Support for Smart Grid: A Detailed Performance Study*
10. *Mr. Neeharika Jana*, B. Tech. Project (IIT Madras), June 2010, *Performance Analysis of Dynamic Bandwidth Allocation Algorithms for Long Reach PONs*
9. *Mr. Ujjwal Goel*, B. Tech. Project (IIT Madras), June 2010, *Packet Classification Algorithms - A Detailed Performance Study*
8. *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.

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

Other Personnel Supervised –

10. *Mr. Deepak Kashyap*, Jul. 2019 – present, Project Associate, IIT Madras
9. *Dr. C. S. Ganesh*, Jun. 2019 – Dec. 2019, Project Associate, IIT Madras
8. *Ms. Niranjhana Narayanan*, Feb. 2019 – Jul. 2019, Project Associate, IIT Madras
7. *Ms. Srilakshmi Bharadwaj*, Aug. 2018 – March 2019, Project Associate, IIT Madras
6. *Ms. Pooja Prakash*, June 2012 – July 2013, Project Associate, IIT Madras
5. *Mr. P. Ramakrishna*, Nov. 2009 – July 2011, Project Associate, IIT Madras
4. *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;**
3. *Mr. Aditya Kumar*, May - Aug. 2010, Undergraduate Summer Intern
2. *Dr. Yang Qin*, Dec. 1999 – Nov. 2000, Post Doctoral Associate, WSU Pullman
1. *Mr. Jian Chuan Lu*, Mar. 2000 – Mar. 2001, Visiting Scholar, WSU Pullman, (Associated with SWIET, China)

M.S/Ph.D. Graduate Committee Memberships (partial list)

- ▷ Serving/served on M.S (by Research) and Ph.D. Committees of several research scholars at IIT Madras
- ▷ Ph.D. Thesis’ External Review Member, Sandeep Kumar Singh, TU Braunschweig, Germany; Participated in viva voce exam on June 14, 2019
- ▷ Also served as External Review Member for several Ph.D. theses at institutions including IIT Delhi, IIT Bombay, IIT Kharagpur, IIT Guwahati, IISc Bangalore, Anna University, DA-IICT.
- ▷ Palani Kodeswaran, Ph.D., 2011, Dissertation Committee Member.
- ▷ Balaji Sethuraman Kodeswaran, Ph.D., 2008, Dissertation Committee Member.
- ▷ Waleed Youssef, Ph.D., Preliminary Dissertation Committee Member.
- ▷ Chris Morris, Ph.D., 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.

Ph.D. Students Supervised, but did not complete under my guidance –

- ▷ Jin Ding, WSU Pullman
 - ▷ Harini Srinivasan, UMBC
 - ▷ Ramakrishna Shenai, UMBC
 - ▷ Aniruddha Rangnekar, UMBC
 - ▷ C. N. Smimesh, IIT Madras
 - ▷ V. Sreejith, IIT Madras
 - ▷ Jassim Rafeek, IIT Madras
 - ▷ Anuja Ajay, IIT Madras
-

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 (Router Arch. and Algs.)
- ▷ Advanced Operating Systems
- ▷ Network Security
- ▷ Computer Security
- ▷ Optical Networking
- ▷ Mobile Computing
- ▷ Research Skills for Computer Science
- ▷ Performance Evaluation of Computer Systems
- ▷ Software Engineering Theory & Practice
- ▷ Software Defined Networking

New Courses Developed/Modified

- ▷ CS6500: Network Security (earlier Cryptography and Network Security), IIT Madras
- ▷ CS6045: Software Defined Networking, IIT Madras
- ▷ CS6040: Router Architectures and Algorithms (earlier Advanced Computer Networks), IIT Madras
- ▷ CMSC 426/626: Principles of Computer Security, UMBC
- ▷ CMSC 487/687: Introduction to Network Security, UMBC
- ▷ CMSC 685: Optical Networks, UMBC
- ▷ CptS/EE 557: Advanced Computer Networks, WSU Pullman

Corporate Training

- ▷ Jan. 2013 – Dec. 2015, Verizon India, “Architecture Readiness Program (ARP)”, Co-PI. (Co-PIs: Prof. T. J. Kamalanabhan; Dr. Lata Dyaram; Prof. R. P. Sundarraj, Dr. Krishna Nandivada).
- ▷ Jasmin Infotech Pvt. Ltd., Chennai, India, “Fundamental Concepts of Data Structures, Algorithms and Software Engg”, Nov. 2010 - July 2011.
- ▷ SAIC, Virginia, USA, “Optical Networking”, 2005.
- ▷ SAIC, Virginia, USA, “Wireless Access Networks”, 2004.

BOOKS

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

73. Madanagopal Ramachandran and **Krishna M. Sivalingam**, “Path Computation for Dynamic Provisioning in Multi-Technology Multi-Layer Transport Networks”, *Springer Nature SN Computer Science*, vol. 1, Article number: 304, Nov. 2020, <https://doi.org/10.1007/s42979-020-00319-4>.
72. Ganesh C. Sankaran and **Krishna M. Sivalingam**, “Collaborative packet header parsing in NetFPGA-based high speed switches”, *IEEE Networking Letters*, vol. 2, No. 3, pp. 124–127, Sep. 2020, <https://doi.org/10.1109/LNET.2020.3008956>.
71. Arkadeep Sen, **Krishna M. Sivalingam** and Babu Narayanan K J, “Design and Evaluation of Low-Cost Network Architecture for persistent WiFi connectivity in Trains”, in *Springer Sadhana – Academy Proceedings in Engineering Science* (Indian Academy of Sciences), 45:59, 2020, <https://doi.org/10.1007/s12046-020-1288-5Sa>.
70. Arkadeep Sen and **Krishna M. Sivalingam**, “Testbed evaluation of a seamless handover mechanism for an SDN based Enterprise WLAN”, in *Springer Sadhana – Academy Proceedings in Engineering Science* (Indian Academy of Sciences), Dec. 2019, Vol 44:243, <https://doi.org/10.1007/s12046-019-1229-3>.
69. Madanagopal Ramachandran and **Krishna M. Sivalingam**, “Provisioning in Transport Networks using Power Aware Resource Allocation Algorithms”, in *Springer Sadhana – Academy Proceedings in Engineering Science* (Indian Academy of Sciences), Sep. 2019, Vol. 44:201, <https://doi.org/10.1007/s12046-019-1179-9>.
68. Dhathri R. Purohith, **Krishna M. Sivalingam** and Aditya Hegde, “(Invited Paper) Network Architecture for Seamless Flow Mobility between LTE and WiFi Networks: Testbed and Results”, in *Springer CSI Transactions on ICT, Special Issue: Wireless in the Future*, 7(1):45–59, March 2019, <https://doi.org/10.1007/s40012-019-00214-1>.
67. Akshay Gadre, Anix Anbiah and **Krishna M. Sivalingam**, “Centralized approaches for virtual network function placement in SDN-enabled networks”, in *SpringerOpen EURASIP Journal on Wireless Communications and Networking*, 2018:197, Aug. 2018, pp. 1–19, <http://dx.doi.org/10.1186/s13638-018-1216-0>. (2017 JCR 2-year Impact Factor: 2.407; 5-year Impact Factor: 1.923); Open Access journal since 2004.

66. C. S. Ganesh and **Krishna M. Sivalingam**, “Design and analysis of scheduling algorithms for Optically Groomed Data Center Networks”, in *IEEE/ACM Transactions on Networking*, Vol. 25, No. 6, pp. 3282–3293, Dec. 2017, <http://dx.doi.org/10.1109/TNET.2017.2724081> (2017 JCR Impact Factor: 3.376).
65. C. S. Ganesh and **Krishna M. Sivalingam**, “A Survey of Hybrid Optical Data Center Network Architectures”, in *Springer Photonic Network Communications Journal*, Apr. 2017, vol. 33, No. 2, pp. 87–101, <http://dx.doi.org/10.1007/s11107-016-0643-2> (2014 JCR Impact Factor: 0.793).
64. Vanniyarajan Chellappan, **Krishna M. Sivalingam** and Kamala Krithivasan, “A Centrality Entropy Maximization Problem in Shortest Path Routing Networks”, in *Elsevier Computer Networks Journal*, July 2016, Vol. 104 Issue C, pp. 1–15 (2014 JCR Impact Factor: 1.256), <http://dx.doi.org/10.1016/j.comnet.2016.04.015>.
63. Sakshi Patni, Aditya Hegde and **Krishna M. Sivalingam**, “Load Balancing Techniques for Dynamic Gateway Selection in LTE Wireless Networks”, in *EAI Transactions on Mobile Communications and Applications*, June 2016, <http://dx.doi.org/10.4108/eai.20-6-2016.151518>, <http://eudl.eu/issue/mca/2/7>, ISSN: 2032-9504.
62. C. S. Ganesh and **Krishna M. Sivalingam**, “Optical Traffic Grooming based Data Center Networks: Node architecture and Comparison”, in *IEEE Journal on Selected Areas in Communications – Series on Green Communications and Networking*, vol. 34, No. 5, pp. 1618–1630, May 2016; <http://dx.doi.org/10.1109/JSAC.2016.2520214> (2014 JCR Impact Factor: 3.453).
61. Dhananjay Bhor, Kavinkadhirsvelan Angappan and **Krishna M. Sivalingam**, “Network and Power-Grid Co-Simulation Framework for Smart Grid Wide-Area Monitoring Networks”, *Elsevier Journal of Network and Computer Applications*, Vol. 59, Jan. 2016; pp. 274–284, <http://dx.doi.org/10.1016/j.jnca.2015.06.016>; (2014 JCR Impact Factor: 2.229).
60. Abhiram Ravi, Parmesh Ramanathan and **Krishna M. Sivalingam**, “Integrated Network Coding and Caching in Information-Centric Networks”, in *Springer Photonic Network Communications Journal*, Vol. 30, No. 3, pp. 416–427, Dec. 2015; <http://dx.doi.org/10.1007/s11107-015-0557-4>, (2014 JCR Impact Factor: 0.793).
59. Narendran Krishnan, R. M. Karthik and **Krishna M. Sivalingam**, “Iterative power control based admission control for wireless networks”, in *ACM/Springer Wireless Networks Journal*, <http://dx.doi.org/10.1007/s11276-015-0985-1>, Vol. 22, Issue 2, pp 619–633, Feb. 2016. (2014 JCR Impact Factor: 0.96).
58. C. S. Ganesh and **Krishna M. Sivalingam**, “Load Dependent Power-efficient Passive Optical Network Architectures”, in *OSA/IEEE Journal of Optical Communications and Networking*, vol. 6, Issue 12, pp. 1104–1114, Dec. 2014, <http://dx.doi.org/10.1109/JOCN.2014.6985902>. (2014 JCR Impact Factor: 2.064)
57. Li-Ping Tung, Ying-Dar Lin, Yu-Hsien Kuo, Yuan-Cheng Lai and **Krishna M. Sivalingam**, “Reducing Power Consumption in LTE Data Scheduling with the Constraints of Channel Condition and QoS”, in *Elsevier Computer Networks Journal*, vol. 75, Part A, pp. 149–159, Dec. 2014, <http://dx.doi.org/10.1016/j.comnet.2014.10.002>. (2014 JCR Impact Factor: 1.256)
56. Sagar Joshi and **Krishna M. Sivalingam**, “Fault tolerance mechanisms for virtual data center architectures”, in *Springer Photonic Network Communications Journal*, vol. 28, No. 2, pp. 154–164, 2014, <http://link.springer.com/article/10.1007/s11107-014-0463-1>. (2014 JCR Impact Factor: 0.793)
55. C. S. Ganesh and **Krishna M. Sivalingam**, “Report Duration Computation Schemes in Reduced Buffer ONUs for Passive Optical Networks”, in *OSA/IEEE Journal of Optical Communications and Networking*, Vol. 5, Iss. 11, pp. 1157–1167, 2013, <http://dx.doi.org/10.1364/JOCN.5.001157>. (2014 JCR Impact Factor: 2.064)

54. C. S. Ganesh and **Krishna M. Sivalingam**, "ONU Buffer Reduction for Power Efficiency in Passive Optical Networks", in *Elsevier Optical Switching and Networking Journal*, vol. 10, Issue 4, Nov. 2013, pp. 416-429, <http://dx.doi.org/10.1016/j.osn.2013.06.005>. (2014 JCR Impact Factor: 1.071).
53. Anusha Sivakumar, C. S. Ganesh and **Krishna M. Sivalingam**, "Performance Analysis of ONU-Wavelength Grouping Schemes for Efficient Scheduling in Long Reach-PONs", in *Elsevier Optical Switching and Networking Journal*, Vol. 10, Issue 4, Nov. 2013, pp. 465-474, <http://dx.doi.org/10.1016/j.osn.2013.03.006>. (2014 JCR Impact Factor: 1.071).
52. S.A.V. Satya Murty, Baldev Raj, **Krishna M. Sivalingam**, S. Sridhar, Jemimah Ebenezer, Kalyan Rao Kuchipudi, "Wireless Sensor Network in Fast Breeder Test Reactor", in *Journal of Nuclear Engineering & Technology*, vol. 3, no. 1, Feb. 2013.
51. P. Gireesan Namboothiri and **Krishna M. Sivalingam**, "Throughput analysis of multiple channel based wireless sensor networks", in *ACM/Springer Wireless Networks Journal*, Vol. 19, No. 4, pp. 461-476, <http://dx.doi.org/10.1007/s11276-012-0478-4>, 2013. (2013 IF: 1.055).
50. Arun Kumar, **Krishna M. Sivalingam** and Adithya Kumar, "On Reducing Delay in Mobile Data Collection based Wireless Sensor Networks", in *ACM/Springer Wireless Networks Journal*, Vol. 19, No. 3, pp. 285-299, <http://dx.doi.org/10.1007/s11276-012-0466-8>, 2013. (2013 IF: 1.055).
49. S.A.V. Satya Murty, Baldev Raj, **Krishna M. Sivalingam**, Jemimah Ebenezer, T. Chandran, M. Shanmugavel, K.K. Rajan, "Wireless Sensor Network for Sodium Leak Detection", in *Elsevier Nuclear Engineering and Design*, vol. 249, pp. 432-437, Aug. 2012.
48. S.A.V. Satya Murty, Baldev Raj, **Krishna M. Sivalingam**, Jemimah Ebenezer, R. Parthasarathy, D. SaiSubalakshmi, "Experimental Deployment of Wireless Sensor Network for Radiation Monitoring", in *Journal of Nuclear Engineering & Technology*, vol. 2, No. 1, 2012.
47. Anusha Sivakumar, C. S. Ganesh and **Krishna M. Sivalingam**, "A Comparative Study of DBA algorithms for Long Reach Passive Optical Networks", *IETE Technical Review*, vol. 29, No. 5, pp. 405-413, <http://dx.doi.org/10.4103/0256-4602.103174>, 2012; (2013 JCR Impact Factor: 0.925)
46. S. Y. Yerima, G.P. Parr, S. McCLean, P. J. Morrow and **Krishna M. 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, pp. 329-338, 2011.
45. Sookyoung Lee and **Krishna M. Sivalingam**, "An Efficient One-time Password Authentication Scheme Using a Smart Card", in *Inderscience International Journal of Security and Networks*, <http://dx.doi.org/10.1504/IJSN.2009.02734>, Vol. 4, No. 3, pp. 145-152, 2009.
44. Santosh Pandey, S. Dong, Prathima Agrawal and **Krishna M. Sivalingam**, "On Performance of Node Placement Approaches for Hierarchical Heterogeneous Sensor Networks", in *ACM/Springer Mobile Networks and Applications*, [10.1007/s11036-008-0108-7](http://dx.doi.org/10.1007/s11036-008-0108-7), vol. 14, No. 4, pp. 401-414, April 2009. (2013 IF: 1.496)
43. Mahesh Sivakumar, Jing Fang, Arun Somani and **Krishna 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, June 2008. (2013 IF: 1.547)
42. Mahesh Sivakumar and **Krishna M. Sivalingam**, "Design of Grooming Architectures for Optical WDM Mesh Networks: Limited Grooming with Electronic Wavelength Conversion", in *Springer Journal of Photonic Network Communications*, [10.1007/s11107-008-0119-0](http://dx.doi.org/10.1007/s11107-008-0119-0), Vol. 16, No. 1, pp. 71-82, Aug. 2008, <http://dx.doi.org/10.1007/s11107-008-0119-0>. (2013 IF: 0.75)

41. Manoj Sivakumar and **Krishna M. Sivalingam**, “A Routing Algorithm Framework for Survivable Optical Networks based on Resource Consumption Minimization”, in *IEEE/OSA Journal of Lightwave Technology*, 10.1109/JLT.2007.899157, Vol. 25, No. 7, pp. 1684–1692, July 2007. (2013 IF: 2.862)
40. Ramakrishna Shenai and **Krishna M. Sivalingam**, “Performance Study of IP and SONET Grooming in Optical WDM Mesh Networks”, in *OSA Journal of Optical Networking*, <https://doi.org/10.1364/JON.6.000568>, Vol. 6, No. 6, pp. 568-583, June 2007. (2013 IF: 1.547)
39. Subalakshmi Venugopal, Wesley Chen, T. Todd and **Krishna 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.
38. Piyush Naik, Karthikeyan Ravichandran and **Krishna M. Sivalingam**, “Cryptographic Key Exchange based on Locationing Information”, in *Elsevier Pervasive and Mobile Computing*, Vol. 3, No. 1, pp. 15 – 35, Jan. 2007.
37. Mahesh Sivakumar and **Krishna 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.
36. Uttara Korad and **Krishna M. Sivalingam**, “Reliable Data Delivery in Wireless Sensor Networks using Distributed Cluster Monitoring”, in *InderScience International Journal of Sensor Networks*, Vol. 1, Nos. 1/2, pp. 75–83, 2006.
35. Sunil Gowda, Manoj Sivakumar and **Krishna 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.
34. Mahesh Sivakumar, **Krishna 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.
33. Jin Ding, **Krishna 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.
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5. “A method for optimizing a network topology of a communication network”, C. Vanniarajan and Krishna M. Sivalingam, Jointly filed in Nov. 2013 by IIT Madras and HCL Technologies; Published on 04 Sep 2015, Number: IN201305398-I4; Application No: 5398/CHE/2013.
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4. Madanagopal Ramachandran, Arun Balaji V N, Shirshendu Bhattacharya, and **Krishna M. Sivalingam**, “Machine Learning based Automatic Trouble Ticket Assignment for Efficient Resolution in Submarine Network Operations”, in *Suboptic Conference*, (New Orleans, Louisiana, USA), April 2019; (Abstract-Based acceptance); Industry Event.
3. Phanindra Palagummi, Vedant Somani, **Krishna M. Sivalingam** and Balaji Venkat, “An Overview of the 5G Mobile Network Architecture”, in *Advanced Computing and Communications (A Quarterly Publication of ACCS Society*, Vol. 2, No. 3, Sep. 2018, <https://acc.digital/an-overview-of-the-5g-mobile-network-architecture/>.
2. **Krishna M. Sivalingam**, “Wireless Sensor Networks”, in *IEEE Vehicular Technology Society News Digest*, Aug. 2004.
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PRESENTATIONS

CONFERENCE TUTORIAL PRESENTATIONS

7. **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.
6. **Krishna M. Sivalingam**, “TUTORIAL: Wireless Sensor Networks”, in *IEEE GLOBECOM*, (San Francisco, CA), Dec. 2003.
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2. P. Agrawal, **Krishna M. Sivalingam**, and M. Srivastava “TUTORIAL: Mobile Multimedia Information Systems”, *IEEE Conference on VLSI Design*, (Chennai, India), Jan. 1998.
1. P. Agrawal, C. Sreenan, M. Srivastava, and **Krishna M. Sivalingam**, “TUTORIAL: Mobile Computing”, *IEEE Symposium on High-Performance Distributed Computing (HPDC)*, (Syracuse, NY), Aug. 1996.

PANEL PRESENTATIONS

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

67. “IoT Security: Blockchain and applications”, International Conference on Internet of Things (ICIoT), Dept. of CSE, SRM Institute of Science and Technology, Kattankulathur Campus, Feb. 2020.
66. “5G and Mobile Edge Computing Support for IoT”, ATAL Workshop on Internet of Things, Dept. of ECE, College of Engineering, Anna University, Chennai, Oct. 2019.
65. “5G Wireless Networks”, Aarupadai Veedu Institute of Technology (Vinayaka Missions Research Foundation), Chennai, Aug. 2019.
64. “5G Wireless Networks”, International Conference on Advanced Computing (ICoAC), Madras Institute of Technology (Anna University), Chennai, Dec. 2018.
63. “Mobility Management in Wireless Networks”, National Chiao Tung University, Hsinchu, Taiwan, Nov. 2018.
62. “Contributions of Vint Cerf and Robert Kahn (2004 ACM Turing Award Winners)”, Organized by ACM India Chennai Professional Chapter, IIT Madras, Chennai, Oct. 2018.
61. “Software Defined Networks and Network Function Virtualization”, Panimalar Engineering College, Chennai, Feb. 2018.
60. “Software Defined Network Architectures for Wireless Networks”, SRM University, Main Campus, Chennai, March 2017.
59. “Software Defined Network Architectures for Wireless Networks”, SRM University, Main Campus, Chennai, Oct. 2016.
58. “Hybrid Optical-Packet Switching Architectures for Data Center Networks”, INAE Annual Convention, DIAT, Pune, Dec. 2015.
57. “Software Defined Network Architectures for Wireless Networks”, University of New South Wales (UNSW), Sydney, Australia, May 2015.
56. “Software Defined Network Architectures for Wireless Networks”, Commonwealth Scientific and Industrial Research Organisation (CSIRO), Sydney, Australia, May 2015.
55. “Cloud/Data Center Networking”, IBM Winter School on “Advances in Cloud Computing Platforms and Applications”, part of IBM Collaborative Academic Research Exchange, Bangalore, Oct. 2014.
54. “LTE Networks: Overview and Research Issues”, Adiparasakthi Engineering College, IEEE International Conference on Communication and Signal Processing, April 2014.
53. “Wireless Sensor Networks and IoT: Overview”, VIT University, Chennai, National Seminar on Wireless Sensor Networks for Water Management, April 2014.
52. “Software Defined Networks and Content Centric Networks”, Indian Statistical Institute, Kolkata, Workshop/Lecture series on Networks and Distributed Algorithms, March 2014.
51. “Wireless Access to the Mobile Cloud”, Adiparasakthi Engineering College, Faculty Development Programme (FDP), June 2013.
50. “Recent Trends in Computer Networks Research”, National Conference on Networking and Communication, Puttparthi, March 2013.

49. "Networking Architectures for Smart Grid" at Conference on "Recent Trends in Computer and Networking Technologies" (Sangoshthi-2012), organized by IGCAR, in Kalpakkam, Dec. 2012.
48. "Internet of things: Recent Trends and Research Issues", at B.S. Abdur Rahman University at two-day Workshop on: "Wireless Sensor Networks: Research Issues and Practical Solutions", Chennai, Dec. 2012.
47. "Wireless Access for Mobile Cloud", IEEE Madras Section, Chennai, Sept. 2012.
46. "Networking Research in DonLab at IIT Madras", Dept. of Computer Science, National Chiao Tung University, Taiwan, June 2012.
45. "Target Tracking in Wireless Sensor Networks", in Intl. Conference on Sensors and Networks (SENNET), VIT, Vellore, India, Jan. 2012.
44. "Networking Architectures for the Smart Grid", in *International Conference on Advanced Computing (ICoAC)*, MIT Campus, Anna University, Chennai, Dec. 2011.
43. "Target Tracking in Wireless Sensor Networks", in *Workshop on Recent Trends in Wireless Sensor Networks*, MIT Campus, Anna University, Chennai, Nov. 2011.
42. "Overview and Performance Study of Network Architectures for the Smart Grid", in *ICT aspects of Smart-Grids Seminar*, Norwegian University of Science and Technology (NTNU), (Trondheim, Norway), Oct. 2011.
41. "Energy-Efficient Mobile Data Collection in Wireless Sensor Networks", in *AICTE Sponsored QIP Short Term Course on Mobile Robots and Sensor Networks*, IIT Madras, Chennai, India, Mar. 2011.
40. "Target Tracking in Wireless Sensor Networks", International Conference on Information Science and Applications (ICISA), Seoul, Korea, April 2010.
39. "On Target Tracking Mechanisms in Wireless Sensor Networks", Intl. Conference on Sensors and Networks (SENNET), VIT, Vellore, India, Dec. 2009.
38. "Mobile Ad Hoc Networks", National seminar on Next Generation Wireless Communication Technologies WiNGCom, (Organized by CDAC and IEEE Kerala), Trivandrum, India, Nov. 2009.
37. "Mobile Ad Hoc Networks", DRDO CAIR Labs, Bangalore, India, Nov. 2009.
36. "Mobile Ad Hoc Networks", AICTE sponsored Staff Development Program on 'Wireless and Mobile Networks', Salem, India, Nov. 2009.
35. "Wireless Access Networks", Einstein College of Engineering, Tirunelveli, India, Oct. 2009.
34. "Energy-Efficient Mobile Data Collection in Wireless Sensor Networks", CREATENET Research Institute, Trento, Italy, Sep. 2009.
33. "Energy-Efficient Mobile Data Collection in Wireless Sensor Networks", International Conference on Trends in Industrial Measurements and Automation (TIMA), Chennai, India, Jan. 2009.
32. "Energy-Efficient Mobile Data Collection in Wireless Sensor Networks", University of California, San Diego, USA, June 2009.
31. "Research Challenges in Wireless Sensor Networks", in National Conference on Wireless Technologies, Melmaruvathur, India, Feb. 2008
30. "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
29. Tekes (Finland) / AFOSR Workshop on Broadband Wireless Technologies, "Mobility and WiMAX", (Washington, DC), March 2007.
28. IEEE Baltimore Section, Communications Society Chapter, "Wireless Sensor Networking", Nov. 2005.

27. Sri Sathya Sai Institute of Higher Learning, "Security Problems in Wireless Networks", Puttaparthi, INDIA, June 2005.
26. SAIC, "Optical Networking: Current and Next Generation", McLean, VA, May 2005.
25. National Security Agency, "Wireless Access Networks", Fort Meade, MD, Dec. 2004.
24. SAIC, "Wireless Access Networks", Reston, VA, Sep. 2004.
23. Intel Corporation Research Seminar, "Traffic Grooming in Optical WDM mesh networks", Hillsboro, OR, Aug. 2004.
22. Anna University – College of Engineering Guindy, "Security Problems in Wireless Networks", Chennai, INDIA, Jul. 2004.
21. Indian Institute of Science, "Security Problems in Wireless Networks", Bangalore, INDIA, Jul. 2004.
20. Universidad Nacional Autonoma de Mexico, "Design and Analysis of Energy Efficient Network Protocols for Large-Scale Wireless Sensor Networks", Mexico City, MEXICO, May 2004.
19. University of Trento, Italy, "Protection and Restoration in Optical Wavelength Division Multiplexed Networks", Trento, ITALY, Jan. 2004.
18. Intel Corporation Research Seminar, "Protection and Restoration in Optical Wavelength Division Multiplexed Networks", Hillsboro, OR, May 2003.
17. Anna University, College of Engineering, "Sensor Networks: Overview and Challenges", Chennai, INDIA, Jan. 2003.
16. Trusted Internet Workshop (in conjunction with International Conference on High-Performance Computing), "Invited Talk - Wireless Sensor Networks Overview and Challenges", Bangalore, INDIA, Dec. 2002.
15. Cisco Optics Day Conference, "Routing, QoS support, and Multicasting in Optical WDM Networks", San Jose, CA, Sep. 2000.
14. Hong Kong University of Science and Technology, "Design and Analysis of WDM Aware Weight Functions for Shortest Path Algorithms", Hong Kong, Apr. 2000.
13. University of Washington, "Design and Analysis of WDM Aware Weight Functions for Shortest Path Algorithms", Seattle, WA, Mar. 2000.
12. University of Texas Arlington, "Design and Analysis of WDM Aware Weight Functions for Shortest Path Algorithms", Arlington, TX, Feb. 2000.
11. Alcatel USA, "Design and Analysis of WDM Aware Weight Functions for Shortest Path Algorithms", Richardson, TX, Feb. 2000.
10. Indian Institute of Science, "Design and Analysis of WDM Aware Weight Functions for Shortest Path Algorithms", Bangalore, INDIA, Jan. 2000.
9. Indian Institute of Technology (Madras), "Design and Analysis of WDM Aware Weight Functions for Shortest Path Algorithms", Chennai, INDIA, Jan. 2000.
8. Anna University, College of Engineering, "Design and Analysis of WDM Aware Weight Functions for Shortest Path Algorithms", Chennai, INDIA, Jan. 2000.
7. BBN Research (A unit of GTE), "Differentiated Services for Wireless Networks: Framework and Enhancements", Boston, MA, Apr. 1999.
6. Aerospace Corporation, "QoS Guarantees in Wireless Networks using Differentiated Services", Los Angeles, CA, Mar. 1999.
5. Microsoft, "Gigabit Ethernet: Performance Evaluation", Redmond, WA, Jul. 1998.

4. University of Maryland, “A Comparison of MAC Protocols for Wireless Local Networks Based on Battery Power Consumption”, College Park, MD, Mar. 1998.
3. North Carolina State University, “Wireless ATM networks”, Raleigh, NC, Nov. 1996.
2. University of North Texas, “High-Speed Communication Protocols for All-Optical Computer Networks”, Denton, TX, Apr. 1995.
1. 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 Industrial Consultancy & Sponsored Research (ICSR): 2019 – present, IIT Madras
- ▷ Member, Academic Council, Easwari Engineering College, 2019 – present
- ▷ Member, Academic Committee, Visweswaraya Ph.D. Scheme, Ministry of Electronics and Information Technology, Government of India, June 2018 – present
- ▷ Member, Board of Studies, Hindustan Institute of Technology and Science, Chennai, School of Computing Sciences, 2018 – present
- ▷ Head, Dept. of CSE, IIT Madras, Feb. 2016 – Feb. 2019
- ▷ Member, Board of Studies, Sri Sathya Sai Institute of Higher Learning, Dept. of Physics, 2016 – present
- ▷ Member, Senate, Indian Institute Of Information Technology (IIIT), Srirangam, India, 2017 – present
- ▷ Member, Senate, Indian Institute Of Information Technology, Design and Manufacturing (IIITD&M), Kancheepuram, India, 2014 – present
- ▷ Member, Univ. Grants Commission (UGC) Assessment Team, Visit to Gitam University, July 2012
- ▷ Member, Board of Studies, Anna University, Chennai, India, 2012 – 2015
- ▷ Member, Board of Studies, Amrita University Center for Wireless Networks and Applications, India, 2011 – present
- ▷ Member, IIT Madras Research Park Council: 2010 – 2013
- ▷ Member, Board of Academic Research: 2010 – 2012, IIT Madras
- ▷ Faculty Advisor: M.S./Ph.D. (2008 Batch), M. Tech. (2007 and 2011 Batches), B. Tech. (2010 Batch), Dual Degree (2012 Batch), M. Tech. (2014 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

- ▷ **Member of Editorial Board**, IEEE Networking Letters, 2018 – present.
- ▷ **Editor-in-Chief** (with Prof. Byrav Ramamurthy), Springer Photonic Network Communications Journal, (<http://www.springer.com/computer/communication+networks/journal/11107>), June 2012 – Jan. 2017.
- ▷ Founding **Editor-in-Chief**, EAI Endorsed ICST Transactions on Ubiquitous Environments, (<http://icst.org/ubiquitous-environments>), 2010 – Jan. 2017; Renamed as Transactions on Future Internet, July 2015.
- ▷ **Member of Editorial Board**, Springer Communications in Computer and Information Science (CCIS) Series, (<http://www.springer.com/series/7899>), 2013 – 2019.
- ▷ **Member of Editorial Board**, *ACM Wireless Networks Journal (WINET)*, (<http://www.kluweronline.com/issn/1022-0038>), Oct. 2003 – 2013.
- ▷ **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, Elsevier Optical Switching and Networking Journal (OSN), Special Issue on “Selected papers from IEEE ANTS 2010”, 2012.
- ▷ Guest Co-Editor, Elsevier Optical Switching and Networking Journal (OSN), Special Issue on “Selected papers from IEEE ANTS 2009”, 2010.

- ▷ Guest Co-Editor, Elsevier Pervasive and Mobile Computing Journal (PMC), Special Issue on “Selected papers from ICDCN 2010”, 2010.
- ▷ Guest Co-Editor, Elsevier Optical Switching and Networking Journal (OSN), Special Issue on “Selected papers from IEEE ANTS 2008”, 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 (MONET), 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

- ▷ **Technical Program Co-Chair**, International Conference on Software Defined Networks (ICSDN), (CEG Campus, Anna University, Chennai), Aug. 2019; Co-hosted by Anna University, IIT Madras, CSI Publication and Govt. of Tamil Nadu’s TANFINET.
- ▷ **Technical Program Co-Chair**, Annual IEEE Conference on Communications (ICC) – Optical Networks and Systems Symposium, Kuala Lumpur, Malaysia, May 2016. *IEEE ICC is one of the two flagship conferences of the IEEE Communications Society, together with IEEE GLOBECOM.*
- ▷ **General Co-Chair**, Seventh Annual IEEE Conference on Advanced Telecommunication Networks and Systems (ANTS), Chennai, India, Dec. 2013
- ▷ **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 Member**, IEEE International Conference on Sensor and Ad Hoc Communications and Networks (SECON), 2004-2012.

- ▷ **Steering Committee Member**, IEEE Conference on Advanced Telecommunication Networks and Systems (ANTS), 2011 – present
- ▷ **Steering Committee Co-Chair/Member**, ICST/CreateNet International Conference on Security and Privacy for Emerging Areas in Communication Networks (SecureComm), 2005 – present.
- ▷ **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

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- ▷ Publicity Chair, Workshop on Optical Networks, Dallas, TX, Jan. 2000
 - ▷ Tutorial Co-Chair, ACM Fifth Annual International Conference on Mobile Computing and Networking (MobiCom), 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 (Not all conferences are listed here):**
 - ★ IEEE International Conference on Computer Communications (INFOCOM) – 1997, 2004, 2006 - 2017 (Received Distinguished TPC Member Award for 2015 and 2016)
 - ★ IEEE Intl. Conf. on Communications (ICC), 2003, 2004, 2006 - 2017
 - ★ IEEE International Symposium on Advanced Networks and Telecommunication Systems (ANTS), 2007 - 2016
 - ★ IEEE ICDCS, 2013, 2014
 - ★ ICST / CreateNet International Conference on Broadband Networks and Communications (BroadNets), 2004 – 2008
 - ★ IEEE Global Telecommunications Conference (GLOBECOM), 2003 – 2015
 - ★ IEEE International Conference on Sensor and Ad Hoc Communications and Networks (SECON), 2005, 2007, 2008, 2010 – 2014
 - ★ 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 (Selected Subset)

- ▷ National Conference on Communications (NCC), IIT Bombay, Mumbai, Feb. 2015; IISc Bangalore, Feb. 2019
- ▷ IEEE INFOCOM: Hong Kong, March 2004; Miami, FL, March 2005; Anchorage, AK, May 2007; Toronto, Canada, April 2014; Hawaii, USA, April 2018
- ▷ Advanced Networks and Telecommunications Systems (ANTS) Conference, Mumbai, India, Dec. 2007, Dec. 2009 - 2016
- ▷ International Conference on Communications Systems and Networks (COMSNETS), Bangalore, India, Several years
- ▷ International Conference on Sensors and Related Networks (SenNet), Vellore Institute of Technology, Vellore, India, Dec. 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 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