

ANAND SRINIVASAN

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Technology & Research Leadership

SUMMARY OF RESEARCH QUALIFICATIONS

- Industry and research leadership - Over 50 papers in conferences and reputed journals, over 25 MS/PhD students mentored and graduated, four patents, Research Grant and RFP wins and leading several research and review committees
- Successful research funding proposal submissions and acceptance of ~\$2M in NCIT, OCE (CITO), CSA, NSERC, PRECARN, NSMG-Net, ISTP and Vitesse towards Cross departmental university and Industry research collaboration
- Research collaboration and funding to Universities and professors at Carleton University (System and Computer Engineering, Computer Science), University of Ottawa, Algonquin College, University of Waterloo, Queen's University, University of Toronto, University of Waterloo, BCIT and University of Victoria
- Successful execution of several University-Industry partnership projects culminating in graduate and post-doc job positions for the students and continuity in funding for next level research
- Proposal review and selection committee participation at OCE (CITO), ISTP, Wavefront IRAP and Lead to Win
- Research review and session committee chairmanships at ITC, ICC and other conferences
- Research Area – M2M, Wireless, Smart Grid, Mining Networks, IoT, Real-time systems

CO-AUTHORED BOOK CHAPTERS

- [P2P Streaming over Cellular Network: Issues, Challenges, and Opportunities](#), Building Next-Generation Converged Networks: Theory and Practice, CRC Press, USA, Jan 23, 2013, with M. Zulhasnine (Prime), C. Huang
- [Cache Coherency Algorithm to Optimize bandwidth in Mobile Networks](#), Lecture Notes in Electrical Engineering, Networks and Communication (NETCOM), Springer Verlag, Volume 284, 2014, Pages: 297-305, with A. Ramaprasath and K. Hariharan.

CO-AUTHORED JOURNAL PAPERS

- [Network Coding and Quality of Service for Mobile Ad-Hoc Networks](#), International Journal of Communications, Network, and System Sciences (ITCNS), September 2014, with Thomas Kunz, Chung-Horng Lung and Basil Saeed
- [QoS Aware Distributed Security Architecture for 4G Multihop Wireless Networks](#), IEEE Transactions on Vehicular Technology, Accepted, with Perumal Rengaraju, Chung-Horng Lung
- [Multimedia Streaming for Ad hoc Wireless Mesh Networks Using Network Coding](#), International Journal of Communications, Network, and System Sciences (ITCNS), Accepted, with Thomas Kunz, Chung-Horng Lung and Basil Saeed
- [On QoE Monitoring and E2E Service Assurance in 4G Wireless Networks](#), IEEE Wireless Communications Magazine, Vol 19, Issue 4, Pages: 89-96, August 2012, with Perumalraja Rangaraju (Prime), C-H Lung, Richard Yu
- [Towards an effective integration of cellular users to the structured Peer-to-Peer network](#), Journal of Peer-to-Peer Networking and Applications, Springer Verlag, January 11, 2012, M. Zulhasnine (Prime), C. Huang
- [A Scalable Path Protection Mechanism for Guaranteed Network Reliability under Multiple Failures](#), IEEE Transactions on Reliability, June 2007, with Minzhi Li (Prime), C. Huang
- [Program restructuring using clustering techniques](#), Journal of Systems and Software, September 2006, with C-H Lung, Xia Xu, Marzia Zaman

BNR/Nortel REFEREED TECHNICAL

- UE 9000 Traffic Engineering, TL-990006, Nortel Networks Research Document, 1999
- XNET Component Capacity, TL-980013, Nortel Networks Research Document, 1998
- VME & SCSI Bus Capacity Study for NAV Applications, TL-970018, 1997
- DBIC-MC860 Processor Capacity, TL-970024, Nortel Networks Research Document, 1997

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REPORTS

- Capacity Limits for Wireless VAD Application in NAV, TR-960019, BNR Research, 1996
- Overload Control Mechanism for Voice- Activated Dialing in NAV, TL-960038, 1996
- Best Practice for the Process of Performance Modeling and Analysis, TL96-0079, 1996

PATENTS & IETF SUBMISSIONS

- **Multi-Constraint Routing System and Method**, United States US6925061, US7187652
- **Electing A Master Server Using Election Periodic Timer in Fault-tolerant Distributed Dynamic Network Systems**, United States US6889338
- **Self-monitoring Mechanism in Fault-Tolerant Distributed Dynamic Network Systems**, United States US20030037284
- **Multi-Constraint Routing System and Method**, Canada CA2466905
- **Path Request and Path Reply Message**, IETF Internet Draft, Nov 2000, with C-Y-Lee, S Ganti, <http://tools.ietf.org/html/draft-lee-mpls-path-request00>

CO-AUTHORED CONFERENCE PAPERS

- [Performance Optimization of Big Data in Mobile Networks](#), IEEE Canadian Conference on Electrical and Computer Engineering, Halifax, 3-6 May 2015, with A. Ramaprasath and C-H Lung
- [Comparison of Simulated and Real Network Traffic Results for Multimedia Streaming Over WiMAX networks with QoS Scheduling](#), IEEE Canadian Conference on Electrical and Computer Engineering, Halifax, 3-6 May 2015, with N. Gorbenko, W. Almuhtadi, and J-P. Emmanuel
- [WiMAX Architecture Priority Scheduling for Multimedia Applications](#), IEEE Canadian Conference on Electrical and Computer Engineering, Toronto, 4-7 May 2014, with R. Wong W. Almuhtadi, and J-P. Emmanuel
- [Cache Coherency Algorithm to Optimize Bandwidth in Mobile Networks](#), Fifth International Conference on Networks and Communications, NETCOM 2013, 28th December 2013, with A. Ramaprasath and K. Hariharan
- [Reach the Unreachable – Newfoundland Rural Broadband Coverage](#), NECEC, Twenty Second Annual conference, IEEE Newfoundland and Labrador, 7 November, 2013
- [On the Performance of Interference-Aware Receiver in the Presence of Channel Estimation Error](#), Globecom, Atlanta, USA, 9-13 December 2013 with R. Ghaffar, P-H Ho, and B. Wu
- [WiMAX Network with Quality of Service for Streaming Multimedia Applications \(Accepted\)](#), The 9th International Wireless Communications & Mobile Computing Conference (IWCMC 2013) JULY 1 – 5, 2013 – CAGLIARI, SARDINIA – ITALY, with R. Wong (Prime), W. Almuhtadi
- [Exploiting Cluster Multicast for P2P Streaming Application in Cellular System \(Accepted\)](#), The 9th International Wireless Communications & Mobile Computing Conference (IWCMC 2013) JULY 1 – 5, 2013 – CAGLIARI, SARDINIA – ITALY, with M. Zulhasnine (Prime), C. Huang
- [Network Coding and Quality of Service for Mobile Ad-hoc Networks \(Accepted\)](#), The 9th International Wireless Communications & Mobile Computing Conference (IWCMC 2013) JULY 1 – 5, 2013, with Michael Hay (Prime), Basil Saeed (Prime), C-H Lung, Thomas Kunz
- [QoS and Protection of Relay Nodes in 4G Wireless Networks Using Network Coding \(Accepted\)](#), The 9th International Wireless Communications & Mobile Computing Conference (IWCMC 2013) JULY 1 – 5, 2013 – CAGLIARI, SARDINIA – ITALY, with Perumalraja Rengaraju (Prime), C-H Lung
- [Canada Success Stories in Brazil](#), BCCC: Brazil-Canada Innovation Science and Technology Forum, Toronto, Canada, February 6th 2013
- [Case Studies - M2M Solutions \(Aviation\)](#), Wavefront Wireless Summit, M2M Summits, Vancouver, Canada, Feb 4th 2013
- [Adaptive Admission Control and Packet Scheduling Schemes for QoS Provisioning in](#)

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- [Multihop WiMAX Networks](#), IEEE IWCMC - 8th International Wireless Communications and Mobile Computing, Cyprus, August 30, 2012, with Perumalraja Rangaraju (Prime), C-H Lung
- [Communication Requirements and Analysis of Distribution Networks Using WiMAX Technology for Smart Grids](#), IEEE IWCMC - 8th International Wireless Communications and Mobile Computing, Cyprus, August 29, 2012, with Perumalraja Rangaraju (Prime), C-H Lung
- [Audio streaming for ad hoc wireless mesh networks using network coding](#), IFIP Wireless Days, Niagara Falls, Canada, October 10, 2011, with Basil Saeed (Prime), C-H Lung, T Kunz
- [Topology Aware Integration of Cellular Users into the P2P System](#), Proceedings of IEEE Vehicular Technology Conference (VTC 2011-Fall), San Francisco, USA, September 6, 2011, with M. Zulhasnine (Prime), C. Huang
- [QoS and Protection of Wireless Relay Nodes Failure Using Network Coding](#), Netcod 2011 - The 2011 International Symposium on Network Coding, July 2011 with Basil Saeed (Prime), Perumalraja Rengaraju, C-H Lung, Thomas Kunz
- [QoS Performance Testing of Multimedia Delivery over WiMAX Networks](#), CCP 2011 - 1st International Conference on Data Compression, Communications and Processing, June 21, 2011 with Doug Reid, Wahab Almuhtadi
- [Measuring and Analyzing WiMAX Security and QoS in Testbed Experiments](#), IEEE International Conference on Communications ICC2011, May 5, 2011, with Perumalraja Rangaraju (Prime), C-H Lung
- [Dynamic Channel and Interface Management in Multi-channel Multi-interface Wireless Access Networks](#), IEEE GLOBECOM 2010, December 2010, with Hassan Halabian (Prime), Ioannis Lambadaris, C-H Lung
- [Throughput-Optimal Relay Selection in Multiuser Cooperative Relaying Networks](#), IEEE MILCOM 2010, November 2010, with Hassan Halabian (Prime), I. Lambadaris, C-H Lung
- [Efficient Resource Allocation for Device-to-Device Communication Underlying LTE Network](#), IEEE International Conference on Wireless and Mobile Computing, Networking and Communications (WiMob), October 2010, with M. Zulhasnine (Prime), C. Huang
- [QoS Assured Uplink Scheduler for WiMAX Networks](#), Proc. of the 72nd IEEE Vehicular Technology Conference (VTC), September 2010, with Perumalraja Rengaraju (Prime), C-H Lung
- [Penalty Function Method for Peer Selection over Wireless Mesh Network](#), IEEE Vehicular Technology Conference Fall (VTC), September 2010, with M. Zulhasnine (Prime), C. Huang
- [Co-located Physical-Layer Network Coding to Mitigate Passive Eavesdropping](#), 8th International Conference on Privacy, Security, and Trust (PST), August 2010, with Michael Hay (Prime), Basil Saeed (Prime), C-H Lung
- [Design of Distributed Security Architecture for Multihop WiMAX Networks](#), 8th International Conference on Privacy, Security, and Trust (PST), August 2010, with Perumalraja Rengaraju (Prime), C-H Lung
- [Analysis on Mobile WiMAX Security](#), IEEE TIC-STH-SIASP, September 2009, with Perumalraja Rengaraju (Prime), C-H Lung, Qu Yi
- [Favorable Peer Supported Throughput Optimization in Wireless Mesh Network](#), IEEE GLOBECOM, December 2010, with M. Zulhasnine (Prime), C. Huang
- [Performance Improvement in Satellite Networks Based on Markovian Weather Prediction](#), IEEE GLOBECOM, December 2010, with Kamal Harb (Prime), Richard Yu, Pramod Dhakal
- [An Intelligent QoS Control System for Satellite Networks Based on Markovian Weather Prediction](#), IEEE VTC, September 2010, with Kamal Harb, Richard Yu, Pramod Dhakal
- [A Decision Support Scheme to Maintain QoS in Weather Impacted Satellite Networks](#), Proc. AIAA Atmospheric and Space Environments Conference, August 2010, with Kamal Harb (Prime), Richard Yu, Pramod Dhakal

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- [Protecting a MPLS Multicast Session Tree with Bounded Switchover Time](#), International Symposium on Performance Evaluation of Computer and Telecommunication Systems (SPECTS), July 2010, with G. Wei (Prime), C-H Lung
- [Optimal Multi-Server Allocation to Parallel Queues with Random Connectivity and Retransmissions](#), IEEE ICC, May 2010, with Hussein Al-Zubaidy (Prime), Ioannis Lambadaris, Yannis Viniotis, Richard Yu
- [Distributed Hierarchical Key Management Scheme in Mobile AdHoc Networks](#), IEEE GLOBECOM, November 2009, with Fei Wang (Prime), Richard Yu
- [Intelligent Weather Aware Scheme for Satellite Systems](#), IEEE ICC, May 2008, with Kamal Harb (Prime), C. Huang, Brian Cheng
- [Prediction method to Maintain QoS in Weather Impacted Wireless and Satellite Networks](#), IEEE Wireless Communications & Networking Conference (WCNC), March 2008, with Kamal Harb (Prime), C. Huang, Brian Cheng
- [Optimal Power Allocation For Multiple Beam Satellite Systems](#), IEEE RAWCON - Radio and Wireless Symposium, Orlando, Florida, January 2008, with Yang Hong (Prime), Brian Cheng
- [Network Layer Negotiation-based Channel Assignment in Multi-channel Wireless Networks](#), IEEE GLOBECOM, November 2007, with Qu Yi (Prime), C-H Lung
- [Prediction Method to Maintain QoS in Weather Impacted Wireless and Satellite Networks](#), IEEE Conference on Systems, Man and Cybernetics, October 2007, with Kamal Harb (Prime), C. Huang, Brian Cheng
- [QoS in Weather Impacted Satellite Networks](#), IEEE PACRIM, August 2007, with Kamal Harb (Prime), C. Huang, Brian Cheng
- [Adaptation to Congestion with Intelligent Systems under Dynamic Weather Conditions](#), ISSSE - Signals, Systems and Electronics, July 2007, with Banupriya Vallamsundar (Prime), Jiesheng Zhu, Kumaraswamy Ponnambalam, C. Huang, Brian Cheng
- [Adaptive Congestion Control under Dynamic Weather Condition for Wireless and Satellite networks](#), ITC-20, May 2007, with Hong Zeng (Prime), Brian Cheng, C. Huang
- [Multi-channel OLSR with Dedicated Control Interface](#), International Symposium on Performance Evaluation of Computer and Telecommunication Systems (SPECTS), August 2006, with Qu Yi (Prime), C-H Lung
- [Guaranteed Multimedia Services over Satellite Networks](#), AIAA Modeling and Simulation Technologies, Colorado, August 2006, with Leo Hartman, Peter Andreadis
- [Performance Guarantees for Expanded Broadband Multimedia Satellite Services](#), AIAA International Communications Satellite Systems Conference (ICSSC) and 4th International Satellite and Communications (ISCe) Conference, June 2006, with Peter Andreadis, Leo Hartman
- [Hierarchical QoS for Guaranteed Multimedia Service over Satellite Networks](#), ASTRO 2006, Montreal, 2005, with Leo Hartman, Peter Andreadis
- [Securing RSVP and RSVP-TE Signaling Protocols and Their Performance Study](#), 3rd IEEE International Conference on Information Technology: Research and Education (ITRE), June 2005 with J. Zhi (Prime), C-H Lung, X. Xiu, Yi Lei
- [A Bandwidth-Efficient Scheduler for MPLS DiffServ Networks](#), 12th Annual Meeting of the IEEE / ACM International Symposium on Modeling, Analysis, and Simulation of Computer and Telecommunication Systems (MASCOTS), October 2004, X. Zeng, C-H Lung, C. Huang
- [Program Restructure through Clustering Technique](#), 4th IEEE Int'l Workshop on Source Code Analysis and Manipulation (SCAM) in conjunction with IEEE Int'l Conference on Software Maintenance, September 2004, with Xia Xu (Prime), C-H Lung, Marzia Zaman
- [Distributed Backup Path Bandwidth Management for Network Reliability](#), 2004 International Conference on Dependable Systems and Networks (DSN'04), Florence, Italy, June 30, 2004,

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- with Minzhi Li (Prime), C. Huang
 - [A Cost-Effective Protection and Restoration Mechanism for Ethernet-Based Networks: an Experiment Report](#), IEEE Workshop on High Performance Switching and Routing (HPSR), April 2004, with Lei Yi (Prime), C-H Lung
 - [A Framework for Live Software Upgrade](#), 13th International Symposium on Software Reliability Engineering (ISSRE'02), 2002, with L. Yu (Prime), G. C. Shoja, Hausi Muller
 - [A New Algorithm to Compute Alternate Paths in Reliable OSPF \(ROSPF\)](#), IEEE PDPTA, June 2001, with J. Pu (Prime), Eric Manning, G. C. Shoja
 - [Adaptive Scheduling of Fault-Tolerant Parallel Programs with Timing Constraints](#), IEEE Systems, Man and Cybernetics, October 1995, with G. C. Shoja
 - [Time-Cost Analysis of Fault-Tolerant Parallel Programs with Timing Constraints](#), IEEE PACRIM, August 1995, with G. C. Shoja
 - [Response Time Analysis of Fault-Tolerant Systems using Primary Site Approach with LCFS Repair Service](#), IEEE TENCON, August 1994, with G. C. Shoja
 - [A Fault-Tolerant Dynamic Scheduler for Distributed Hard Real-Time Systems](#), IEEE PACRIM Pacific Rim Conference on Communications, Computers and Signal Processing, August 1993, with G. C. Shoja
 - [A Fault-Tolerant Scheduler For Distributed Real-Time Systems](#), Proceedings of the IEEE Pacific Rim Conference on Communications Computers and Signal Processing, May 9, 1991, with G. C. Shoja
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