RADIM BARTOŠ

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EDUCATION

Ph.D. in Mathematics & Computer Science, August 1997
University of Denver
Dissertation: Wavelength Division Multiplexing in Optical Networks

MS in Mathematics, March 1996
University of Denver

MS in Computer Science and Engineering, June 1987
Czech Technical University, School of Electrical Engineering, Prague, Czech Republic
Honor of Chancellor

ACADEMIC EXPERIENCE

Professor and Chair, *University of New Hampshire* (2017 – present)
Associate Professor and Chair, *University of New Hampshire* (2011 – 2017)
Associate Professor, *University of New Hampshire* (2003 – 2011)
Assistant Professor, *University of New Hampshire* (1997 – 2003)

- Ph.D. Dissertation advisor of Swapnil Bhatia (2010, currently Distinguished Engineer at CATALOG), Kevin J. Ma (2012, currently with Amazon Robotics), Mikkel Hagen (2012, currently with VMware), Ying Li (2015, Associate Professor at Colby College), and Scott Valcourt (Systems Engineering Ph.D., 2016, currently Associate Teaching Professor at The Roux Institute at Northeastern University).
- Advised Master's Theses. Most thesis projects led to peer-reviewed publications in conferences and journals. Students include Monalisa Agrawal, Xiangdong Huang, Mythilikanth Raman, Sowmya Manjanatha, Arun Gandhi, Chaitanya Goodsay, James Tessier, Ankur Chadda, Kevin Ma, Md. Ehteshamul Haque, Sachin Goel, Myung-Sun Kim, Michael Karell, Ryan Zarick, Yassamin Heidari, Mario Atallah, Dragos Maftei, Daniel Moss, Brandon Smith, Stephen Wissow. Co-advised thesis of Jonathan Brown. Co-advised thesis of UNH-ECE students: Veena Venugopal, Sai Mupparapu, and Prashanth Srinivas-Raghavan.
- Advised Master's Projects of Llolsten Kaonga, Glenn Herrin, Chaoxing Lin, Jie Zou, Shuo Yan, Sriram Thyagarajan, Rajkishore Gorla, Chaoyang Deng, Daniel Fuchs, Vani Murarishetty, Tao Zhou, Quihui Wu, Tiangxin Zhang, Meera Rengan, Joseph Hempfling, Naga Venkata Vuyyuru, Dan Maftei, Adrian Sindile, Denis Tolstenko, Venkata Gorla, Leon Cyril, Aarti Patel, Octavian Filoti, Xiaobo Liu, Guang Wang, Aiswariya Kannan, Aditi Goel, Yi Shen, Rahul Arke, Sumita Gorla, Karthik Mynam, Pushpa Datla, Shen Yi, Naga Ravi Kumar Mahavrathayajula, Kalyan Saripalli, Akmal Muqeeth, Chaoyi Yin, Ramnik Lider, Anup Khadka, Matt Robinson, Sree Dadisetty, Bo Cui, Danni Song, Siqi Li, Dayanidhi Srinivas, Lian Zheng, Dylan Fransway, Vivek Kadimesetty, Michael (Joe) Prendergast, Daniel Shea, Varsha Thirumakil, Manasa Malleshappa, Shilpa Dhagat, Colin Etzel, Yuncong Zhou, Collin Crowell, Bindu Kumari, Timothy Ward, Kaixin Zhang, Kunpeng Xie, Amith Ramanagar Chandrashekar, Siyuan Zhang, and Xin Liu, Medhini Shankar Narayan, Zack Stein, Ahmed Alnazer.

- Supervised Honor's Theses of Jacob Schwartz and Scott Cypher, two UROP-funded undergraduate projects (Alexander Neefus and Devin Avery), an INCO 590 Student Research Experience course of Chris Polanec, and Summer Undergraduate Research Fellowship (SURF) of Dylan Fransway.
- Senior Projects presented at the *UNH Undergraduate Research Conference*: Joseph Stiefel, Stephen Passen, and David Fitzpatrick (2013); Eric Chamberlain, Jackson Corson, and Daniel Moss (2014); Alex Carrozzi, James English, and Arturo Hernandez (2015); Stephen Chambers (2015); Max Renke (2015); Alexander Clarke, Eliza Hunt-Hawkins, Ian Powell, and Kim Tran (2016); Peter Franchina, Matthew Mayer, Cameron Pepin, and Joseph Puzzo (2016 *first place team in the Computer Science Research category*); Aaron Blais and Cody Shaw (2017 *first place team in the Computer Science Research category*); Francesco Mikulis-Borsoi and Kristian Comer (2018 *first place team in the Computer Science Applications category*, first place in the *Paul J. Holloway Prize Competition*); Veronica Chambers-O'Bryan and Jason Nguyen (2019, honorable mention in Computer Science Applications category); Austin Prusik (2019); Ryan Lefebvre (2020, *first place in the Computer Science Applications category*), Yuhui Wu, Xueliang Chen, Garrick Craft (2021).
- Advised many reading courses and independent studies.

Visiting Associate Professor, *Czech Technical University in Prague* (February 2004 - July 2004)
Graduate Teaching Assistant, *University of Denver* (September 1991 - August 1997)
Adjunct Faculty, *Czech Technical University in Prague* (1988 - 1991)

PROFESSIONAL SERVICE

- Since 2010, serving as a Program Committee Co-Chair for the *International IEEE Symposia on Precision Clock Synchronization for Measurement, Control and Communication (ISPCS)*. Have served on program and organization committees of several conferences.
- Proposal reviewer and a participant at the *DoE High Performance Networks for Distributed Petascale Sciences* panel.
- Served as a session chair at various conferences.
- Reviewed paper for various journals and conferences.
- *Executive Advisory Board* member of the UNH InterOperability Laboratory (since 2013)
- Elected to represent the Department on the *UNH Faculty Senate* (2005 - 2007).
- Selected university and college committees: UNH Tech Camp Advisory Committee, Holloway Competition, Part-time Graduate Fellowship Committee, ISE Symposium Organization Committee, Undergraduate Research Opportunities Program Committee, and Mobile App Steering Committee.
- Department committees: P&T, Hiring, and Equipment.
- Undergraduate student advisor.

PROFESSIONAL EXPERIENCE

Assistant to Operations Manager, *University of Denver*, (May 1995 - August 1997)

Founder/CFO, *KVTCVSM*, (1989-1991)

Project Manager, *Czechoslovak Academy of Science*, (1989 - 1991)

Software Engineer, *CEZ Prague*, (1986 - 1987)

GRANTS AND FELLOWSHIPS

- *Securing IEEE 1588 Timing for the Smart Grid*. National Institute of Standards and Technology, U.S. Department of Commerce - Information Technology Laboratory (ITL) Grant Program 2016-NIST-MSE-01. Principal Investigator with Bob Noseworthy (UNH-IOL) as the Co-PI. October 2016 – June 2018.
- *Characterizing Sympathetic Response to Verify Medication Adherence.* Principal Investigator with Scott Valcourt, UNH-IT as Co-PI. $100,000 awarded by the NH-IRC program with matching from Lamprey Networks, Inc. for the period February 2015 – September 2016.
- *Remote Health Monitoring in the Continua Model.* Principal Investigator with Scott Valcourt, UNH-IT as Co-PI. $114,000 awarded by the NH-IRC program with matching from Lamprey Networks, Inc. for the period January 2014 – August 2015.
- *Highly Accurate Temporal and Spatial Mapping of Coastal Regions Using Long Endurance Autonomous Vehicles.* Principal Investigator. The proposal was funded by the Office of Naval Research through the DEPSCoR program in May 2005. The project was developed in collaboration with the Autonomous Undersea Systems Institute. The project brought almost $700,000 from the sponsor and was matched by over $400,000 from industry and non-UNH academic sources.
- *EAP Research and Testbed Development For Meetinghouse Data Communications.* Co-principal investigator, Scott Valcourt, CS-UNH, principal investigator. Sponsored by Meetinghouse Data Communications, Inc. Funding period January - May 2006.
- *Quality of Service Algorithms for Ethernet EPONs* Principal Investigator. Cisco University Research Program proposal. Awarded in June 2005.
- *SAForum Compliance Program*, project participant, Scott Valcourt, CS-UNH, Principal Investigator. Service Availability Forum. Awarded April 2005.
- *A Study of QoS for Point-to-Multi-Point Ethernet Passive Optical Networks.* Principal Investigator. Cisco University Research Program proposal. Awarded in January 2004.
- *An Internet Teaching Laboratory (ITL) - proposal to the Undesignated Gifts Competition* (proposal submitted jointly with Robert D. Russell, UNH). Awarded in June 2001.
- PI for *Radix VoIP* project funded by Lamprey Networks. The project funded one graduate student.
- Cooperative Association for Internet Data Analysis (CAIDA) equipment grant to develop an *Internet Teaching Laboratory* (proposal submitted jointly with Robert D. Russell, UNH). Awarded in October 1999, additional equipment awarded in 2001.
- Graduate School Summer Faculty Fellowship for project entitled *"Optical Network Architectures and Protocols for the Next Generation of the Internet"* (Summer 1999).
- Grant from University of New Hampshire Vice President for Research Discretionary Research Fund for project entitled *"Space-Time-Wavelength Optical Interconnection Network"*. The funding used for a research assistant and travel (Summer 1999).
- IEEE Student Travel Grant to present a paper at GLOBECOM'95 in Singapore.
- Colorado Graduate Student Fellowship (1991-1993),
- NATO Advanced Study Institute Travel Grant to attend 1990 International Summer School on Programming and Mathematical Method in Marktoberdorf, Germany (lecturers included E. W. Dijkstra, C. A. R. Hoare, M. Chandi, M. Broy, and J. Bergstra).

PROFESSIONAL MEMBERSHIPS

- IEEE Member
- IEEE Communication Society Member

PATENTS

[1] Method and system for trick play in over-the-top video delivery, K. J. Ma and R. Bartoš, US Patent 8,925,021.

[2] Method and apparatus for efficient HTTP streaming, K. J. Ma, IC. Lin, R. Bartoš, and S. Bhatia, US Patent 8,417,828.

[3] Method and system for secure and reliable video streaming with rate adaptation, K. J. Ma, R. Bartoš, J. Xu, R. Nair, R. Hickey, and IC. Lin, US Patent App. 13/483,812.

MAIN PUBLICATIONS

Bold font indicates UNH graduate and undergraduate student coauthors.

[4] **S. Chellappa**, R. Farahani, R. Bartos, H. Hellwagner, "Context-Aware HTTP Adaptive Video Streaming Utilizing QUIC's Stream Priority," In Proceedings of the 2nd Mile-High Video Conference. Denver, CO, May 2023.

[5] **S. Chellappa** and R. Bartos, "Is QUIC Quicker with HTTP/3? An Empirical Analysis of Quality of Experience with DASH Video Streaming," In Proceedings of IEEE International Conference on Advanced Networks and Telecommunications Systems (IEEE ANTS), Gujarat, India, December 2022.

[6] **G. Leclerc** and R. Bartos, "Experimental Analysis of the Performance and Scalability of Network Time Security for the Network Time Protocol," 2022 IEEE International Symposium on Precision Clock Synchronization for Measurement, Control, and Communication (ISPCS), Vienna, Austria, October 2022, pp. 1-7.

[7] **S. Chellappa** and R. Bartos, "Adaptability between ABR algorithms in DASH video streaming and HTTP/3 over QUIC: research proposal," In Proceedings of the 13th ACM Multimedia Systems Conference (MMSys '22), Athlone, Ireland, June 2022, pp. 388–392, https://doi.org/10.1145/3524273.3533932

[8] **A. Gupta** and R. Bartos, "User Experience Evaluation of HTTP/3 in Real-World Deployment Scenarios," In Proceedings of the 25th Conference on Innovation in Clouds, Internet and Networks (ICIN), Paris, France, 2022, pp. 17-23,

[9] **B. Smith**, R. Noseworthy, and R. Bartoš, "ARTT: A Scalable Approach for Monitoring the Quality of Time in Distributed Systems," in Proc. of *2019 International IEEE Symposium on Precision Clock Synchronization for Measurement, Control and Communication* (ISPCS'19), Portland, OR, Sept.-Oct. 2019.

[10] Y. Li and R. Bartoš, "Connectedness-Aware Copy-Adaptive Routing Protocol in Intermittently Connected Networks," *International Journal of Wireless Information Networks*, 13 p. May 2019.

[11] Y. Li, R. Bartoš, and C. Liang, "Are Containers Coupled with NetEm a Reliable Tool for Performance Study of Network Protocols?," in Proc of the 50th Annual *IEEE South East Conference* (IEEE SoutheastCon 2019), Huntsville, AL, Apr. 2019.

[12] **D. Maftei**, R. Bartoš, R. Noseworthy, and T. Carlin, "Implementing Proposed IEEE 1588 Integrated Security Mechanism," in Proc. of *2018 International IEEE Symposium on Precision Clock Synchronization for Measurement, Control and Communication* (ISPCS'18), Geneva, Oct. 2018.

[13] **D. Maftei**, R. Bartoš, R. Noseworthy, and T. Carlin, "Implementing Proposed IEEE 1588 Integrated Security Mechanism," Work in Progress paper in Proc. of *2017 International IEEE Symposium on Precision Clock Synchronization for Measurement, Control and Communication* (ISPCS'17), Monterey, CA, Sept. 2017.

[14] **Y. Li** and R. Bartoš, "Interaction Based Routing Algorithm for Opportunistic Mobile Social Networks," in Proc. of *14th Annual IEEE Consumer Communications & Networking Conference (CCNC 2017)*, January 2017, Las Vegas, NV, Jan. 2017.

[15] **Y. Li** and R. Bartoš, "Efficient Regional Information Dissemination Protocol for Intermittently Connected Mobile Wireless Sensor Networks," in Proc. of *the IEEE SoutheastCon 2016*, pp 1-8, Mar. 2016.

[16] **Y. Li** and R. Bartoš, "Connectedness-Aware Copy-Adaptive Routing Protocol in Intermittently Connected Networks," in Proc. of the *17th International Conference on Distributed Computing and Networking (ICDCN 2016)*, Singapore, Jan. 2016.

[17] **Y. Li**, R. Bartoš, and M. Charpentier, "Performance analysis of local algorithms in large-scale disconnected networks," in Proc. of *IEEE Consumer Communications and Networking Conference (CCNC)*, Las Vegas, NE, Jan. 2015.

[18] **Y. Li**, R. Bartoš, and **J. Swan**, "Dacksis: An efficient transport protocol with acknowledgment-assisted storage management for intermittently connected wireless sensor networks," in *Journal of Pervasive and Mobile Computing*, pp. 272–285, August 2014.

[19] **Y. Li** and R. Bartoš, "A Survey of Protocols for Intermittently Connected Delay-Tolerant Wireless Sensor Networks," in *Elsevier Journal of Network and Computer Applications*, Vol. 41, pp. 411–423, May 2014.

[20] **Y. Li** and R. Bartoš, "Energy Efficient Reactive Store-and-Forward Protocol for Intermittently Connected Networks," in Proc. of *The IEEE Conference on Global Communications (GLOBECOM'13)*, Atlanta, GA, Dec. 2013.

[21] **Y. Li**, R. Bartoš, and **J. Swan**, "Transport Protocol with Acknowledgement-Assisted Storage Management for Intermittently Connected Wireless Sensor Networks," in *Distributed Computing and Networking* (D. Frey, M. Raynal, S. Sarkar, R. K. Shyamasundar, and P. Sinha, eds.), vol. 7730 of Lecture Notes in Computer Science, pp. 57–71, Springer, 2013.

[22] **K. J. Ma** and R. Bartoš, "CoS enforcement for HTTP adaptive streaming," in Proc. of the IEEE Conference on Global Communications (GLOBECOM'12), Anaheim, CA, Dec. 2012.

[23] **M. Hagen**, **R. Zarick**, and R. Bartoš, "Deficit round robin scheduling with adaptive weight control," in the Proc. of the 25th International Conference on Computer Applications in Industry and Engineering (CAINE'12), New Orleans, LA, November 2012. (paper received the Best Paper Award)

[24] M. Charpentier, R. Bartoš, and **Y. Li**, "Local algorithms for robust mission realization in large-scale disconnected networks." in Proc of The 11th IEEE International Symposium on Network Computing and Applications (NCA'12), August 2012.

[25] **M. Hagen**, P. Scruton, R. Noseworthy, **R. Zarick**, and R. Bartoš, "Testing challenges of Data Center Bridging networks," *IEEE Communications Magazine*. vol.50, no.3, pp.140-145, March 2012.

[26] **K. J. Ma** and R. Bartoš, "HTTP Live Streaming Bandwidth Management using Intelligent Segment Selection," in Proc. of *The 2011 IEEE Global Communications Conference (Globecom 2011)*, Houston, TX, December 2011.

[27] **K. J. Ma**, R. Bartoš, and **S. Bhatia**, "A Survey of Schemes for Internet-based Video Delivery," *Elsevier Journal of Network and Computer Applications*. vol. 34, no. 5, Pages 1572-1586, September 2011.

[28] **R. Zarick**, **M. Hagen**, and R. Bartoš "Transparent Clocks vs. Enterprise Ethernet Switches," in Proc. of *2011 International IEEE Symposium on Precision Clock Synchronization for Measurement, Control and Communication* (ISPCS'11), Munich, Germany, September 2011.

[29] **K. J. Ma**, M. Mikhailov, and R. Bartoš, "DRM Optimization for Stitched Media File Rate Adaptation," in Proc. of *The IEEE International Conference on Multimedia & Expo – ICME 2011*, Barcelona, Spain, July 2011.

[30] **K. J. Ma**, R. Nair, and R. Bartoš "DRM Workflow Analysis for Over-the-Top HTTP Segmented Delivery," in Proc. of *The IEEE International Conference on Multimedia & Expo – ICME 2011*, Barcelona, Spain, July, 2011.

[31] **K. J. Ma**, R. Bartoš, **S. Bhatia**, and R. Nair, "Mobile Video Delivery with HTTP," *IEEE Communications Magazine*. vol.49, no.4, pp.166-175, April 2011.

[32] **K. J. Ma**, M. Li, A. Huang, and R. Bartoš, "Video Rate Adaptation in Mobile Devices via HTTP Progressive Download of Stitched Media Files," *IEEE Communication Letters*, vol. 15, no. 3, pp. 320-322, March 2011.

[33] M. Charpentier, R. Bartoš, and **Y. Li**, "Interaction patterns for resilient intermittently-connected static sensor networks," in Proc. of *IEEE Conference on Military Communications (MILCOM'10)*, San Jose, CA, pp. 1004-1009, October 2010.

[34] **R. Zarick**, **M. Hagen**, and R. Bartoš, "The Impact of Network Latency on the Synchronization of Real-World IEEE 1588-2008 Devices," in Proc. of *2010 International IEEE Symposium on Precision Clock Synchronization for Measurement, Control and Communication (ISPCS'10)*, Portsmouth, NH, 6 p., October 2010.

[35] M. Charpentier, R. Bartoš, and **S. Bhatia**, "When Opportunity Proceeds from Autonomy: A Tour-Based Architecture for Disconnected Mobile Sensors," in Proc. of *The Third IEEE WoWMoM Workshop on Autonomic and Opportunistic Communications*, Kos, Greece, June 2009.

[36] **K. J. Ma**, R. Bartoš, and **S. Bhatia**, "Scalability of HTTP Pacing with Intelligent Bursting," in *Proc. of The IEEE International Conference on Multimedia & Expo – ICME 2009*, New York, NY, June-July, 2009.

[37] M. Charpentier, R. Bartoš, and **S. Bhatia**, "A Mechanism to Structure Mission-Aware Interaction in Mobile Sensor Networks," in Proc. of *The 10th International Conference on Distributed Computing and Networking - ICDCN 2009*, LNCS 5408, pp. 425–436, Jan. 2009.

[38] **S. Bhatia** and R. Bartoš "Self-similar Functions and Population Protocols: a Characterization and a Comparison," in Proc. of *The 10th International Conference on Distributed Computing and Networking - ICDCN 2009*, LNCS 5408, pp. 236–274, Jan. 2009.

[39] **A. Goel**, **A. G. Kannan**, **I. Katz**, and R. Bartoš, "Improving Efficiency of a Flooding-based Routing Protocol for Underwater Networks," Proc of *The Third ACM International Workshop on UnderWater Networks (WUWNet)*, San Francisco, CA, pp. 91–94, Sept. 2008.

[40] R. Bartoš, S. G. Chappell, R. J. Komerska, M. Haag, **S. S. Mupparapu**, E. Agu, and **I. Katz** "Development of Routing Protocols for the Solar-powered Autonomous Underwater Vehicle (SAUV) platform," *Wireless Communications and Mobile Computing*, Vol. 8, No. 8, pp. 1075-1088, Aug. 2008.

[41] **S. Bhatia**, R. Bartoš, and **K. J. Ma**, "Throughput-Delay Tradeoff in Small and Sparse Mobile Ad hoc Networks," *ACM/SIGMOBILE Mobile Computing and Communications Review*, Vol. 12, No. 2, pp. 41-43. Apr. 2008. Also as a poster in Proc. of *ACM/SIGMOBILE MobiHoc 2007*, Montreal, Canada, Sept. 2007.

[42] R. Bartoš, R. J. Komerska, S. G. Chappell, and M. Haag, "COFSNET+: a Routing Protocol Communication among Autonomous Underwater Vehicles," in Proc. of the *Fifteenth International Symposium on Unmanned Untethered Submersible Technology (UUST'07)*, Durham, NH, 6 p., August 2007.

[43] S. G. Chappell, R. J. Komerska, D. R. Blidberg, Ch. N. Duarte, G. R. Martel, D. M. Crimmins, M. A. Beliard, R. Nitzel, J. C. Jalbert, and R. Bartoš, "Recent Field Experience with Multiple Cooperating Solar-Powered AUVs," in Proc. of the *Fifteenth International Symposium on Unmanned Untethered Submersible Technology (UUST'07)*, Durham, NH, 8 p., August 2007.

[44] **S. Bhatia** and R. Bartoš, "IPACT with Smallest Available Report First: A New DBA Algorithm for EPON," in Proc. of the *IEEE International Conference on Communications (ICC'07)*, Glasgow, UK, 6 p., June 2007.

[45] **I. Katz**, R, Bartoš, R. Komerska, and S. G. Chappell, "A Cross-Layer Model for In-Water Platform Networking," A poster presentation at *NDIA Undersea Distributed Networked Systems Conference*, Newport, RI, February 2007.

[46] R. Bartoš, **V. Gorla**, **L. Cyril**, R. Komerska, S. G. Chappell, and R. Sharma, "Experimental Evaluation and Modeling of RF Modems for Use in Fleets of Multiple Cooperating Autonomous Undersea Vehicles," *Proc. of Oceans'06 MTS/IEEE-Boston*, Boston, MA, 6 p., September 2006.

[47] M. Haag, E. Agu, R. Komerska, S. G. Chappell, and R. Bartoš, "Status Packet Deprecation and Store-Forward Routing in AUSNet," Proc. of *The First ACM International Workshop on UnderWater Networks (WUWNet)*, September 25, 2006, Los Angeles, CA, 7 p., September 2006.

[48] **K. J. Ma** and R. Bartoš, "Analysis of Transport Optimization Techniques," *Proc. of IEEE International Conference on Web Services (ICWS'06)*, Chicago, IL, pp. 611-618, September 2006.

[49] **S. Bhatia**, **D. Garbuzov**, and R. Bartoš, "Analysis of the Gated IPACT Scheme for EPONs," in Proc. of the *IEEE International Conference on Communications (ICC'06)*, Istanbul, Turkey, 6 p. June 2006.

[50] **S. Bhatia**, and R. Bartoš, "Closed-form expression for the collision probability in the IEEE Ethernet Passive Optical Network registration scheme," *Journal of Optical Networking*, Vol. 5, No. 1, pp. 1-14, January 2006.

[51] **S. Bhatia**, and R. Bartoš, "Closed-Form Expression for the Collision Probability in the IEEE EPON Registration Scheme," in Proc. of the *IEEE Global Telecommunications Conference (GLOBECOM'05)*, St. Louis, MO, 5 p., Nov.-Dec. 2005.

[52] **S. S. Mupparapu**, R. Bartoš, and M. Haag, "Performance Evaluation of Ad Hoc Protocols for Underwater Networks," Proc. of *Fourteenth International Symposium on Unmanned Untethered Submersible Technology (UUST'05)*, Durham, NH, 8 p., August 2005.

[53] **K. J. Ma** and R. Bartoš, "Performance Impact of Web Service Migration in Embedded Environments," Proc. of *IEEE International Conference on Web Services (ICWS'05)*, Vol II, pp. 409-416, Orlando, FL, July 2005.

[54] **S. Bhatia**, R. Bartoš, and **C. K. Godsay**, "Empirical Evaluation of Upstream Throughput in a DOCSIS Access Network" *Proc. of the First IEEE International Conference on Multimedia Services Access Networks (MSAN'05)*, pp. 106-110, Orlando, FL, June 2005.

[55] S. Fulton, R. Bartoš, and **C. K. Godsay**, "DOCSIS as a Foundation for Residential and Commercial Community Networking over Hybrid Fiber Coax," in I. Chlamtac, A. Gumaste, and C. Szabó, eds. "Broadband Services to Businesses and Communities: User Needs, Business Models and Technologies," John Wiley & Sons, Inc., pp. 201-214, April 2005.

[56] **S. Bhatia** and R. Bartoš, "Performance of the IEEE 802.3 EPON Registration Scheme Under High Load," Proc. of SPIE #5598: OpticsEast - Performance, Quality of Service, and Control of Next-Generation Communication Networks Conference, Philadelphia, PA., 11 p. October 2004.

[57] R. Bartoš, **C. K. Godsay**, and S. Fulton, "Experimental Evaluation of DOCSIS 1.1 Upstream Performance," Proc. of the *International Conference on Parallel and Distributed Computing and Networks (PDCN)*, Innsbruck, Austria, 6 p., February 2004.

[58] **V. Venugopal**, R. Bartoš, M. J. Carter, and **S. S. Mupparapu**, "Improvement of Robustness for Ad Hoc Networks through Energy-Aware Routing," *Proc. of the Fifteenth International Conference on Parallel and Distributed Computing and Systems (PDCS)*, Marina del Rey, CA, (T. Gonzales ed.), 6 p. November 2003.

[59] R. Kannan, S. Ray and R. Bartoš, "An Optical Switching Architecture for Hierarchical Group Communication," *Journal of Systems Architecture*, Volume 49, Issues 7-9, pp. 297-314, October 2003.

[60] S. Fulton, R. Bartoš, and **C. K. Godsay**, "DOCSIS as a Foundation for Community Networking over Hybrid Fiber Coax," Proc. of the First International Workshop on Community Networks and FTTH/P/x (CNFT), Dallas, TX, October 2003.

[61] R. Bartoš and A. Gandhi, "Dynamic issues in MPLS service restoration," *Proc. of the Fourteenth International Conference on Parallel and Distributed Computing and Systems (PDCS)*, Cambridge, MA, (S. G. Akl and T. Gonzalez, eds.), pp. 618-623, November 2002.

[62] R. Bartoš and **S. Bhatia**, "Fast restoration signaling in optical networks," *Proc. of the Special Session on Optical Networks and Communications of the Fourteenth International Conference on Parallel and Distributed Computing and Systems (PDCS)*, Cambridge, MA, (S. G. Akl and T. Gonzalez, eds.), pp. 845-850, November 2002.

[63] **S. Manjanatha** and R. Bartoš, "Integrating Differentiated Services with ATM," *Telecommunication Systems*, vol. 19, no. 3,4, pp. 403-424, 2002.

[64] R. Bartoš and **M. Raman**, "A heuristic approach to service restoration in MPLS networks," in *Proc. of the 2001 IEEE International Conference on Communications (ICC)*, Helsinki, Finland, pp. 117-121, vol.1, June 2001.

[65] R. Bartoš, M. Raman, and **A. Gandhi**, "New approaches to service restoration in MPLS-based networks," in *Proc. of the IEEE International Conference on Trends in Communications (EUROCON 2001)*, Bratislava, Slovakia (P. Farkas ed.), pp. 58-61, July 2001.

[66] **S. Manjanatha** and R. Bartoš, "Integrating Differentiated Services with ATM," in *Proc. of the IEEE International Conference on Networking (ICN'01)*, Colmar, France (P. Lorenz ed.), Springer LNCS 2093, pp. 388-397, July 2001.

[67] R. Kannan, S. Ray, and R. Bartoš, "An improved optical switch for group communication," in *Proc. International Conference on Advanced Computing and Communications (ADCOM 2000)*, December 2000.

[68] R. Bartoš and **M. Raman**, "A scheme for fast restoration in MPLS networks," in *Proc. of the Twelfth International Conference on Parallel and Distributed Computing and Systems (PDCS)*, Las Vegas, NE (M. Guizani and X. Shen, eds.), pp. 488–493, November 2000.

[69] R. Bartoš and P. de la Torre, "A WDM Interconnection Network for Traffic with Group Locality," in *All-Optical Networking: Architecture, Control and Management Issues*, John M. Senior, Chunming Qiao, Editors, in Proc. of SPIE, Vol. 3531, pp. 256-267, November 1998.

[70] R. Bartoš, P. de la Torre, and R. Kannan, "Space-Time-Wavelength Network with Group Communication Locality," in *Proc. of DIMACS Workshop on Multichannel Optical Networks: Theory and Practice*, Peng-Jun Wan, Ding-Zhu Du, Panos Pardalos, Editors, AMS Series in Discrete Mathematics and Theoretical Computer Science, Vol. 46, pp. 239-249, March 1998.

[71] R. Kannan, R. Bartoš, K. Y. Lee, and Harry F. Jordan, "SXmin: A Self-routing, High-Performance ATM Packet Switch Based on Group-Knockout Principle," *IEEE Transactions on Communications*, vol. 45, no. 6, pp. 710-722, June 1997.

[72] R. Kannan, R. Bartoš, K. Y. Lee, and Harry F. Jordan, "STWnet: A High Bandwidth Space-Time-Wavelength Multiplexed Optical Switching Network," in *Proc. of 1997 IEEE International Conference on Computer Communications (INFOCOM)*, Kobe, Japan, 21 p., April 1997.

[73] R. Bartoš, R. Kannan, K. Y. Lee, and Harry F. Jordan, "Multicasting WDM Interconnection Network for Clusters of Processors," in *Proc. of the Eighth International Conference on Parallel and Distributed Computing and Systems*, Chicago, pp. 130-133, October 1996.

[74] R. Kannan, R. Bartoš, K. Y. Lee, and Harry F. Jordan, "Optical TDM Switch Architectures with Distributed Control," in *Proc. of the 1996 IEEE Conference on Military Communications (MILCOM)*, McLean, VA, pp. 115-119, October 1996.

[75] R. Bartoš, R. Kannan, K. Y. Lee, and Harry F. Jordan, "An Efficient WDM Architecture with a Wavelength-Distributed Synchronization Protocol," in *Proc. of the 1996 IEEE International Conference on Communications*, Dallas, pp. 1788-1792, June 1996.

[76] R. Bartoš, R. Kannan, K. Y. Lee, and Harry F. Jordan, "Distributed Optical ATM Switching Architectures," in *Proc. of the 1995 IEEE Global Telecommunications Conference*, Singapore, pp. 1751-1755, November 1995.

[77] R. Bartoš, R. Kannan, K. Y. Lee, and Harry F. Jordan, "MultiNet: High-Performance WDM Interconnection Architecture," in *Proc. of the 1995 IEEE International Conference on Communications*, Seattle, pp. 277-281, June 1995.

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