

Raj Yavatkar

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Patents

- » 7260106, Method and apparatus for managing energy usage of processors while executing protocol state machines, (with Lakshman Krishnamurthy)
- » 7246205, Software controlled dynamic push cache, (with Santosh Balakrishnan and Charles Narad)
- » 7177323, Ensuring quality of service (QOS) for a multi-media calls through call associated individual media streams, (with Jim Toga)
- » 7203740, Method and apparatus for allowing proprietary forwarding elements to interoperate with standard control elements in an open architecture for network devices, (with David Putzolu)
- » 7142541, Determining routing information for an information packet in accordance with a destination address and a device address, (with Alok Kumar)
- » 6973488, Providing policy information to a remote device, (with David M. Durham and Russell J.Fenger)
- » 6611864, Extensible policy-based network management architecture, 8/26/2003 (with David M. Putzolu)
- » 6601082, System and method for managing actions provided by a network using a policy tree, 7/29/2003 (with David Durham and Russ Fenger)
- » 6587432, Method and system for diagnosing network congestion using mobile agents, 7/1/2003. (with David Putzolu)
- » 6272540, Arrangement and method for providing flexible management of a network, August 7, 2001 (with Satyen Yadav)
- » 6247061, Method and computer program product for scheduling network communication packets originating from different flows having unique service requirements, June 2001 (with Carol Ann Bell, Tsung-Yuan Charles Tai, and joint with Microsoft - Douceur; John R. Bernet; Yoram Bar; Ofer)
- » 6728265, Controlling Frame Transmission, April 27, 2004 (with Charles Tai and Uri Elzur)
- » 6735702, Method and System for Diagnosing Network Intrusion, May 11, 2004 (with David Putzolu)
- » 6804717, Providing Quality of Service by Transmitting XML Files Indicating Requested Resources, October 12, 2004 (with Bakshi Sanjay)

Publications

» Books

- "RSVP: Internet Resource Reservation Protocol," John Wiley, 1999 (David Durham and Raj Yavatkar)

» Book Chapters

- "EPAN: An Extensible Packet Analysis Utility for CIM Environments" (Raj Yavatkar, T. Narten, C. Libby), In Programming Environments for Computer Integrated Manufacturing, Eds. W. Gruver and J. Boudreaux, Springer-Verlag, 1992.
- "AQUA: An Adaptive End-System Quality of Service Architecture," (Raj Yavatkar), in High-speed Networking for Multimedia Applications, W. Effelsburg, O. Spaniol, A. Danthine, D. Ferrari,(Eds.), Kluwer Academic Publishers, 1996.
- "Intel IXP2400 Network Processor" (P. Chandra, Raj Yavatkar, and S. Lakshmanmurthy), in Network Processor Design: Issues and Practices, Vol. 1, Chapter 13, 259-276, Patrick Crowley, Mark A. Franklin, Haldun Hadimioglu and Peter Z. Onufryk editors, Morgan Kaufmann Publishers, October 2002.
- "Benchmarking Network Processors" (P. Chandra, Raj Yavatkar,F. Hady), in Network Processor Design: Issues and Practices, Vol 1., Chapter 2, Patrick Crowley, Mark A. Franklin, Haldun Hadimioglu and Peter Z. Onufryk (editors), Morgan Kufmann Publishers, October 2002.

» Internet Standards

- RFC 3182. "Identity Representation for RSVP" (S. Yadav, Raj Yavatkar, R. Pabbati, Peter Ford) January 2000.
- RFC 2753. "A Framework for Policy-based Admission Control" (D. Pendarakis, Raj Yavatkar, R. Guerin), January 2000.
- RFC 2814. "SBM (Subnet Bandwidth Manager): A Protocol for RSVP-based Admission Control over IEEE 802-style networks" (Raj Yavatkar, D. Hoffman, Y. Bernet, F. Baker, and M. Speer), May 2000.
- RFC 2998. "A Framework for Integrated Services Operation over Diffserv Networks" (Y. Bernet, Raj Yavatkar, Fred Baker), November 2000.
- RFC 3084. "COPS Usage for Policy Provisioning (COPS-PR)" (K. Chan, Raj Yavatkar,), March 2001.

» Guest Editor

- IEEE Journal on Selected Areas in Communications, March 2001, Vol 19, No. 3, "Active and Programmable Networks", (with Ken Calvert, Andrew Campbell, A. Lazar, and David Weatherall)
- Computer Networks, "Programmable Networks", (With A. Campbell and D. Weatherall), June 2002, Vol 38, No. 3
- IEEE Network Magazine, July/August 2003, Vol. 17, No. 4, "Network Processors", (with Prof. Harrick Vin)

» Conference and Journal Publications

- "Two Stage Packet Classification Using Most Specific Filter Matching and Transport Level Sharing" (Michael E. Kounavis, Alok Kumar, and Raj Yavatkar), Computer Networks, December 2007.
- "Sorting Packets by Packet Schedulers Using a Connected Trie Data Structure" (Michael E. Kounavis, Alok Kumar, and Raj Yavatkar), IEEE INFOCOMM 2007.
- "Overcoming the Memory Wall in Packet Processing: Hammers or Ladders?" (J. Mudigonda, H. Vin, Raj Yavatkar), 1st Symposium on Architectures for Networking and Communications Systems (ANCS 2005), October 2005
- "Managing memory access Latency in packet processing systems" (J. Mudigonda, H. M. Vin, and R. Yavatkar), extended abstract, ACM SIGMETRICS, 2005.
- "Platform wide innovations to overcome thermal challenges" (R. Yavatkar and M Tirumala), THERMES 2007: Thermal Challenges in Next Generation Electronic Systems, January 2007.
- "The Phoenix Framework: A Practical Architecture for Programmable Networks (David Putzolu, Raj Yavatkar, S. Bakshi), IEEE Communications Magazine, March 2000.
- "A Highly Flexible Distributed Multiprocessor Architecture for Network Processing", Computer Networks, special issue on Network Processors, (M. Venkatachalam, Raj Yavatkar, P. Chandra), Vol. 41, Issue 5, April 2003, 563-586.
- "Benchmarking Network Processors" (P. Chandra, Raj Yavatkar, F. Hady), in Proceedings of Workshop on Network Processors, held in conjunction with the 8th International Symposium on High-Performance Computer Architecture, Boston, Massachusetts, February 2002.
- "Directions in Packet Classification for Network Processors" (M. Kounavis, A Kumar, H. Vin, R. Yavatkar, A. Campbell), Proceedings of Workshop on Network Processors, held in conjunction with the 9th International Symposium on High-Performance Computer Architecture, Feb. 2003
- Resilient Multicast Support for Continuous-Media Applications: (A. Myers, Raj Yavatkar, H. Zhang), Proc. 7th Intl. Workshop on Network and Operating System Support for Digital Audio and Video (NOSSDAV), 1997
- A State Management Protocol for IntServ, DiffServ and Label Switching" (H. Adishesu, Raj Yavatkar, G. Parulkar), IEEE Conference on Network Protocols, October 1998.
- "Integrated CPU and network-I/O QoS management in an endsystem" (K. Lakshman and Raj Yavatkar), Computer Communications Vol 21, 4, pp. 325-333, 1998.
- "Adding Realtime Applets and Quality of Service Support to the World Wide Web" (K. Lakshman and Raj Yavatkar). In the Proceedings of the The Seventh ACM SIGOPS European Workshop on Systems Support for Worldwide Applications, September 1996.

- "An Empirical Evaluation of Adaptive QOS Renegotiation in ATM networks", (K. Lakshman and Raj Yavatkar) In the Proc. 6th Intl. Workshop on Network and Operating System Support for Digital Audio and Video (NOSSDAV), April, 1996.
- "Integrating Concast and Multicast Communication Models" (S. Wen, J. Griffioen, Raj Yavatkar), Proceedings of the Int. Soc. for Optical Engr: Symposium on Voice, Video, and Data Communications, November 1998.
- "Communication Support for Distributed Collaborative Applications" (Raj Yavatkar and K. Lakshman), ACM/Springer-Verlag Journal on Multimedia Systems, August 1994, Volume 2, 74-87.
- "PCSMMA: A Reservation-based CSMA Protocol for Integrated Manufacturing Networks" (Raj Yavatkar, R. Finkel, P. Pai), IEEE Transactions on Systems, Machine, and Cybernetics, August 1994.
- "An End-To-End Approach to Large-Scale Multimedia Dissemination" (Raj Yavatkar, L Manoj), Computer Communications, Special issue on Upper layer Protocols and Distributed Applications, March 1994.
- "Optimistic Strategies for Large-Scale Dissemination of Multimedia Information" (Raj Yavatkar, L. Manoj), Proceedings of the ACM Multimedia Conference, 1993.
- "Design and implementation of a multimedia protocol suite in a BSD Unix kernel" (Raj Yavatkar, K. Lakshman), Proceedings of USENIX Summer 1993 Technical Conference, June 1993, pp 129-146.
- "A Reliable Dissemination Protocol for Interactive Collaborative Applications" (Raj Yavatkar, M. Sudan), In Proceedings of the ACM Multimedia '95 Conference, Nov. 1995.
- "An Object-Oriented Model for the Semantic Interpretation of Multimedia Data" (R. Adams, J. Griffioen, Raj Yavatkar), Proceedings of the ACM Multimedia '95 Conference, November 1995.
- Improving End-to-End performance of TCP over Mobile internetworks (Raj Yavatkar, N. Bhagawat), IEEE Workshop on Mobile systems (now Mobicom), 1993).
- "The Cypress Coaxial Backbone Packet Switch" (Raj Yavatkar, T. Narten, D. Comer), Computer Networks and ISDN Systems, Vol. 14, No. 2, pages 383-388, 1987.
- "FLOWS: Performance Guarantees in Best Effort Delivery Systems" (Raj Yavatkar, D. Comer), IEEE INFOCOM, 1988.
- "Programming Network Processors with High Level Languages" (Raj Yavatkar, L. Stevens), Communications Design Conference, 2001.
- "IXA Portability Framework: Preserving Software Investment in Network Processor Applications" (Uday Naik, Raj Yavatkar, Don Hooper, Prashant Chandra), Intel Technology Journal, Vol. 6, Issue 3, August 2002, 50-60.
- "A CPU Scheduling Algorithm for Continuous Media Applications" (Raj Yavatkar, K. Lakshman), Proc. 5th Intl. Workshop on Network and Operating

- System Support for Digital Audio and Video (NOSSDAV), April 1995. pp. 223-226.
- "Reliable Dissemination for Large-Scale Wide-Area Information Systems", (Raj Yavatkar) In Proceedings of the 3rd IEEE Workshop on the Architecture and Implementation of High Performance Communication Subsystems (HPCS'95), August 1995.
 - "Clique: A Toolkit for Group Communication Using IP Multicast" (Raj Yavatkar, J. Griffioen), In Proceedings of the Workshop on Services in Distributed and Networked Environments, June 1994.
 - "Content-based Multimedia Data Management and Efficient Remote Access" (Robert Adams, J. Griffioen, Raj Yavatkar), *Revue Informatique et Statistique dans les Sciences Humaines [RISSH]*, vol. 33, 1997.
 - "Automatic and Dynamic Identification of Metadata in Multimedia" (R. Adams, J. Griffioen, R. Yavatkar), Proceedings of the First IEEE Metadata Conference, April 1996.
 - "Quality-of-Service Guarantees for Wireless Computer Vision" (J. Griffioen, Raj Yavatkar), Proceedings of the Int. Soc. for Optical Engr: Sensor Fusion and Networked Robotics, Vol. 2589, pp. 122-133, October 1995.
 - "MOODS: A Multimedia Information Modeling System" (J. Griffioen, R. Yavatkar, R. Mehrotra), Proceedings of the ACM Multimedia '94 Conference Workshop on Multimedia Database Management Systems, October 1994.
 - "Unify: A Scalable Approach to Multicomputer Design" (J. Griffioen, R. Yavatkar, R. Finkel), In IEEE Computer Society Bulletin of the Technical Committee on Operating Systems and Application Environment, July, 1995
 - "An Introductory Course in Computer Communication and Networks" (T. Narten, R. Yavatkar), *ACM Computer Communication Review*, January 1992.
 - "A Flexible Prototyping Method for Simulating Experimental Communication Networks" (Raj Yavatkar, D. Comer, J. Griffioen), *International Journal in Computer Simulation*, Vol. 3, No. 4, November 1993.
 - "Multiple Target Tracking Across Reliable Multicast Wireless Networks" (B. Seales, J. Griffioen, R. Yavatkar), Proceedings of the SPIE Conference on Sensor Fusion and Distributed Robotic Agents, Oct 1997.
 - "Connection establishment for multi-party real-time communication", (Bettati, D. Ferrari, A. Gupta, W. Heffner, W. Howe, M. Moran, Q. Nguyen, R. Yavatkar), Proceedings of the Fifth International Workshop on Network and Operating System Support for Digital Audio and Video, Durham, NH, April 1995.