

Dmitri Loguinov

Computer Science and Engineering
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<http://irl.cse.tamu.edu/dmitri>

- Research Interests** ◇ Peer-to-peer networks, Internet measurement, stochastic modeling of networks, congestion control, random graphs and topology analysis, web crawling, bandwidth estimation, video streaming.
- Education** ◇ 6/2002 PhD in Computer Science (GPA 4.0/4.0)
City University of New York, New York, NY 10016
Thesis: “Adaptive Scalable Internet Streaming”
Co-advisors: Hayder Radha and Kaliappa Ravindran
- ◇ 6/1995 BS (with honors) in Computer Science (GPA 4.85/5.0)
Moscow State University, Moscow, Russia 119991
Thesis: “Optimal Multi-Processor Scheduling Algorithms”
Advisor: Meran Furugian
- Experience** ◇ 9/2007– Associate Professor
Director of the Internet Research Lab (IRL)
Department of Computer Science and Engineering
Texas A&M University, College Station, TX 77843
- ◇ 9/2002–8/2007 Assistant Professor
Director of the Internet Research Lab (IRL)
Department of Computer Science and Engineering
Texas A&M University, College Station, TX 77843
- Publications** ◇ **Refereed Journal** († marks officially advised students)
- 2009 1. Y. Zhang[†], Y. Xiong, S. Liu, and D. Loguinov, “Queuing Dynamics and Single-Link Stability of Delay-Based Window Congestion Control,” *Accepted to Elsevier Computer Networks*, 12 pages.
2. X. Wang[†] and D. Loguinov, “Understanding and Modeling the Internet Topology: Economics and Evolution Perspective,” *Accepted to IEEE/ACM Trans. Networking*, 14 pages.
3. M. Dai[†], Y. Zhang[†], and D. Loguinov, “A Unified Traffic Model for MPEG-4 and H.264 Video Traces,” *IEEE Trans. Multimedia*, vol. 11, no. 5, pp. 1010–1023, Aug. 2009.
4. H.-T. Lee[†], D. Leonard[†], X. Wang[†], and D. Loguinov, “IRLbot: Scaling to 6 Billion Pages and Beyond,” *ACM Trans. Web*, vol. 3, no. 3, pp. 1-33, Jun. 2009.
5. X. Wang[†], Z. Yao[†], and D. Loguinov, “Residual-Based Estimation of Peer and Link Lifetimes in P2P Networks,” *IEEE/ACM Trans. Networking*, vol. 17, no. 3, pp. 726–739, Jun. 2009.
6. Y. Zhang[†] and D. Loguinov, “On Delay-Independent Diagonal Stability of Max-Min Congestion Control,” *IEEE Trans. Automatic Control*, vol. 54, no. 5, pp. 1111–1116, May 2009.

7. Y. Zhang[†], S. Jain[†], and D. Loguinov, "Towards Experimental Evaluation of Explicit Congestion Control," *Elsevier Computer Networks*, vol. 53, no. 7, pp. 1027–1039, May 2009.
8. Z. Yao[†], X. Wang[†], D. Leonard[†], and D. Loguinov, "Node Isolation Model and Age-Based Neighbor Selection in Unstructured P2P Networks," *IEEE/ACM Trans. Networking*, vol. 17, no. 1, pp. 144–157, Feb. 2009.
- 2008 9. D. Leonard[†], Z. Yao[†], X. Wang[†], and D. Loguinov, "On Static and Dynamic Partitioning Behavior of Large-Scale P2P Networks," *IEEE/ACM Trans. Networking*, vol. 16, no. 6, pp. 1475–1488, Dec. 2008.
10. Y. Zhang[†] and D. Loguinov, "Local and Global Stability of Delayed Congestion Control Systems," *IEEE Trans. Automatic Control*, vol. 53, no. 10, pp. 2356–2360, Nov. 2008.
11. Y. Zhang[†], D. Leonard[†], and D. Loguinov, "JetMax: Scalable Max-Min Congestion Control for High-Speed Heterogeneous Networks," *Elsevier Computer Networks*, vol. 52, no. 6, pp. 1193–1219, Apr. 2008.
12. X. Liu, K. Ravindran, and D. Loguinov, "A Stochastic Foundation of Available Bandwidth Estimation: Multi-Hop Analysis," *IEEE/ACM Trans. Networking*, vol. 16, no. 1, pp. 130–143, Feb. 2008.
- 2007 13. X. Liu, K. Ravindran, and D. Loguinov, "A Queuing-Theoretic Foundation of Available Bandwidth Estimation: Single-Hop Analysis," *IEEE/ACM Trans. Networking* vol. 15, no. 4, pp. 918–931, Aug. 2007.
14. Y. Zhang[†], S.-R. Kang[†], and D. Loguinov, "Delay-Independent Stability and Performance of Distributed Congestion Control," *IEEE/ACM Trans. Networking*, vol. 15, no. 4, pp. 838–851, Aug. 2007.
15. X. Wang[†] and D. Loguinov, "Load-Balancing Performance of Consistent Hashing: Asymptotic Analysis of Random Node Join," *IEEE/ACM Trans. Networking*, vol. 15, no. 4, pp. 892–905, Aug. 2007.
16. D. Leonard[†], Z. Yao[†], V. Rai[†], and D. Loguinov, "On Lifetime-Based Node Failure and Stochastic Resilience of Decentralized Peer-to-Peer Networks," *IEEE/ACM Trans. Networking*, vol. 15, no. 3, pp. 644–656, Jun. 2007.
17. S.-R. Kang[†] and D. Loguinov, "Modeling Best-Effort and FEC Streaming of Scalable Video in Lossy Network Channels," *IEEE/ACM Trans. Networking*, vol. 15, no. 1, pp. 187–200, Feb. 2007.
- 2006 18. M. Dai[†], D. Loguinov, and H. Radha, "Rate-Distortion Analysis and Quality Control in Scalable Internet Streaming," *IEEE Trans. Multimedia*, vol. 8, no. 6, pp. 1135–1146, Dec. 2006.
19. X. Liu, K. Ravindran, and D. Loguinov, "Towards a Generalized Stochastic Model of End-to-End Packet-Pair Sampling," *IEEE JSAC Special Issue on Sampling the Internet*, vol. 24, no. 12, pp. 2249–2262, Dec. 2006.
- 2005 20. D. Loguinov, J. Casas[†], and X. Wang[†], "Graph-Theoretic Analysis of Structured Peer-to-Peer Systems: Routing Distances and Fault Resilience," *IEEE/ACM Trans. Networking*, vol. 13, no. 5, pp. 1107–1120, Oct. 2005.
- 2004 21. M. Dai[†], C. Peng, A.K. Chan, and D. Loguinov, "Bayesian Wavelet Shrinkage with Edge Detection for SAR Image Despeckling," *IEEE Trans. Geoscience and Remote Sensing*, vol. 42, no. 8, pp. 1642–1648, Aug. 2004.
- 2003 22. S.A. Khayam, S. Karande, H. Radha, and D. Loguinov, "Performance Analysis and Modeling of Errors and Losses over 802.11b LANs for High-Bitrate Real-Time Multimedia," *Elsevier Signal Processing: Image Communication*, vol. 18, no. 7, pp. 575–595, Aug. 2003.

23. D. Loguinov and H. Radha, "End-to-End Rate-Based Congestion Control: Convergence Properties and Scalability Analysis," *IEEE/ACM Trans. Networking*, vol. 11, no. 4, pp. 564–577, Aug. 2003.
- 2002 24. D. Loguinov and H. Radha, "Retransmission Schemes for Streaming Internet Multimedia: Evaluation Model and Performance Analysis," *ACM SIGCOMM Computer Communication Review (CCR)*, vol. 32, no. 2, pp. 70–83, Apr. 2002.
25. D. Loguinov and H. Radha, "Large-Scale Experimental Study of Internet Performance Using Video Traffic," *ACM SIGCOMM Computer Communication Review (CCR)*, vol. 32, no. 1, pp. 7–19, Jan. 2002.
- ◇ **Refereed Conference and Workshop**
26. M. Smith[†] and D. Loguinov, "Enabling High-Performance Internet-Wide Measurements on Windows," *Passive and Active Measurement Conference (PAM)*, 10 pages, Apr. 2010 (29.1%).
- 2009 27. C. Reddy[†], D. Leonard[†], and D. Loguinov, "Optimizing Capacity-Heterogeneous Unstructured P2P Networks for Random-Walk Traffic," *IEEE P2P*, pp. 41–50, Sep. 2009 (**best paper award**) (19.8%).
28. X. Wang[†], Z. Yao[†], Y. Zhang[†], and D. Loguinov, "Robust Lifetime Measurement in Large-Scale P2P Systems with Non-Stationary Arrivals," *IEEE P2P*, pp. 101–110, Sep. 2009 (19.8%).
- 2008 29. Y. Zhang[†] and D. Loguinov, "ABS: Adaptive Buffer Sizing for Heterogeneous Networks," *IEEE IWQoS*, pp. 90–99, Jun. 2008 (36%).
30. S. Jain[†], Y. Zhang[†], and D. Loguinov, "Towards Experimental Evaluation of Explicit Congestion Control," *IEEE IWQoS*, pp. 121–130, Jun. 2008 (36%).
31. S.A. Khayam, H. Radha, and D. Loguinov, "Worm Detection at Network Endpoints Using Information-Theoretic Traffic Perturbations," *IEEE ICC*, pp. 1561–1565, May 2008 (36%).
32. H.-T. Lee[†], D. Leonard[†], X. Wang[†], and D. Loguinov, "IRLbot: Scaling to 6 Billion Pages and Beyond," *WWW*, pp. 427–436, Apr. 2008 (**best paper award**) (11%).
33. S.-R. Kang[†] and D. Loguinov, "IMR-Pathload: Robust Available Bandwidth Estimation under End-Host Interrupt Delay," *Passive and Active Measurement Conference (PAM)*, pp. 172–181, Apr. 2008 (32%).
34. X. Wang[†], X. Liu, and D. Loguinov, "Modeling the Evolution of Degree Correlation in Scale-Free Topology Generators," *IEEE INFOCOM*, pp. 1768–1776, Apr. 2008 (20.5%).
35. Z. Yao[†] and D. Loguinov, "Understanding Disconnection and Stabilization of Chord," *IEEE INFOCOM*, pp. 1723–1731, Apr. 2008 (20.5%).
36. Z. Yao[†] and D. Loguinov, "Link Lifetimes and Randomized Neighbor Selection in DHTs," *IEEE INFOCOM*, pp. 637–645, Apr. 2008 (20.5%).
37. D. Leonard[†] and D. Loguinov, "Turbo King: Framework for Large-Scale Internet Delay Measurements," *IEEE INFOCOM*, pp. 430–438, Apr. 2008 (20.5%).
- 2007 38. S. Bhandarkar, A.L.N. Reddy, Y. Zhang[†], and D. Loguinov, "Emulating AQM from End Hosts," *ACM SIGCOMM*, pp. 349–360, Aug. 2007 (13.6%).
39. S. Jain[†] and D. Loguinov, "PIQI-RCP: Design and Analysis of Rate-Based Explicit Congestion Control," *IEEE IWQoS*, pp. 10–20, Jun. 2007 (**nominated for the best student paper award**) (27%).
40. Z. Yao[†], X. Wang[†], D. Leonard[†], and D. Loguinov, "On Node Isolation under Churn in Unstructured P2P Networks with Heavy-Tailed Lifetimes," *IEEE INFOCOM*, pp. 2126–2134, May 2007 (18%).

41. X. Wang[†], Z. Yao[†], and D. Loguinov, “Residual-Based Measurement of Peer and Link Lifetimes in Gnutella Networks,” *IEEE INFOCOM*, pp. 391–399, May 2007 (18%).
- 2006 42. Y. Zhang[†] and D. Loguinov, “On Delay-Independent Diagonal Stability of Max-Min Congestion Control,” *IEEE CDC*, pp. 621–626, Dec. 2006 (64%).
43. Z. Yao[†], D. Leonard[†], X. Wang[†], and D. Loguinov, “Modeling Heterogeneous User Churn and Local Resilience of Unstructured P2P Networks,” *IEEE ICNP*, pp. 32–41, Nov. 2006 (14.2%).
44. S.-R. Kang[†], X. Liu, A. Bhati[†], and D. Loguinov, “On Estimating Tight Link Bandwidth Characteristics over Multi-Hop Paths,” *IEEE ICDCS*, pp. 1–10, Jul. 2006 (13.9%).
45. Y. Zhang[†], D. Leonard[†], and D. Loguinov, “JetMax: Scalable Max-Min Congestion Control for High-Speed Heterogeneous Networks,” *IEEE INFOCOM*, pp. 1–13, Apr. 2006 (18%).
46. X. Wang[†] and D. Loguinov, “Wealth-Based Evolution Model for the Internet AS-Level Topology,” *IEEE INFOCOM*, pp. 1–11, Apr. 2006 (18%).
47. X. Liu, K. Ravindran, and D. Loguinov, “Measuring Probing Response Curves over the RON Testbed,” *Passive and Active Measurement Conference (PAM)*, pp. 191–200, Mar. 2006 (25%).
- 2005 48. D. Leonard[†], Z. Yao[†], X. Wang[†], and D. Loguinov, “On Static and Dynamic Partitioning Behavior of Large-Scale Networks,” *IEEE ICNP*, pp. 345–357, Nov. 2005 (17%).
49. X. Liu, K. Ravindran, and D. Loguinov, “Multi-Hop Probing Asymptotics in Available Bandwidth Estimation: Stochastic Analysis,” *ACM/USENIX IMC*, pp. 173–186, Oct. 2005 (24.3%).
50. S.-R. Kang[†] and D. Loguinov, “Impact of FEC Overhead on Scalable Video Streaming,” *ACM NOSSDAV*, pp. 123–128, Jun. 2005 (38%).
51. D. Leonard[†], V. Rai[†], and D. Loguinov, “On Lifetime-Based Node Failure and Resilience of Decentralized Peer-to-Peer Networks,” *ACM SIGMETRICS*, pp. 26–37, Jun. 2005 (**nominated for the best student paper award**) (13.1%).
52. M. Dai[†] and D. Loguinov, “Analysis and Modeling of H.264 and MPEG-4 Multi-Layer Video Traffic,” *IEEE INFOCOM*, pp. 2257–2267, Mar. 2005 (17.2%).
53. X. Liu, K. Ravindran, and D. Loguinov, “What Signals Do Packet-Pair Dispersions Carry?” *IEEE INFOCOM*, pp. 281–292, Mar. 2005 (17.2%).
- 2004 54. M. Dai[†] and D. Loguinov, “Wavelet and Time-Domain Modeling of Multi-Layer VBR Video Traffic,” *Packet Video*, pp. 1–10, Dec. 2004 (50%).
55. Y. Zhang[†] and D. Loguinov, “Local and Global Stability of Symmetric Heterogeneously-Delayed Control Systems,” *IEEE CDC*, pp. 5004–5009, Dec. 2004 (50%).
56. X. Li[†], D. Leonard[†], and D. Loguinov, “On Reshaping of Clustering Coefficients in Degree-Based Topology Generators,” *Workshop on Algorithms and Models for the Web-Graph (WAW)*, pp. 68–79, Oct. 2004 (45%).
57. X. Liu, K. Ravindran, B. Liu, and D. Loguinov, “Single-Hop Probing Asymptotics in Available Bandwidth Estimation: Sample-Path Analysis,” *ACM IMC*, pp. 300–313, Oct. 2004 (19%).
58. S.-R. Kang[†], X. Liu, M. Dai[†], and D. Loguinov, “Packet Pair Bandwidth Estimation: Stochastic Analysis of a Single Congested Node,” *IEEE ICNP*, pp. 316–325, Oct. 2004 (15.5%).

59. M. Dai[†], D. Loguinov, and H. Radha, “Rate-Distortion Modeling of Scalable Video Coders,” *IEEE ICIP*, pp. 1093–1096, Oct. 2004 (46%).
60. M. Dai[†], D. Loguinov, and H. Radha, “A Hybrid Wavelet Framework for Modeling VBR Video Traffic,” *IEEE ICIP*, pp. 3125–3128, Oct. 2004 (46%).
61. X. Liu, K. Ravindran, and D. Loguinov, “Evaluating the Potential of Bandwidth Estimators,” *New York Metro Area Networking Workshop (NYMAN)*, pp. 1–4, Sep. 2004.
62. Y. Zhang[†], S.-R. Kang[†], and D. Loguinov, “Delayed Stability and Performance of Distributed Congestion Control,” *ACM SIGCOMM*, pp. 307–318, Aug. 2004 (9.1%).
63. Y. Zhang[†] and D. Loguinov, “Oscillations and Buffer Overflows in Video Streaming under Non-Negligible Delay,” *ACM NOSSDAV*, pp. 88–93, Jun. 2004 (25%).
64. X. Wang[†], Y. Zhang[†], X. Li[†], and D. Loguinov, “On Zone-Balancing of Peer-to-Peer Networks: Analysis of Random Node Join,” *ACM SIGMETRICS*, pp. 211–222, Jun. 2004 (12.4%).
65. S.-R. Kang[†], Y. Zhang[†], M. Dai[†], and D. Loguinov, “Multi-layer Active Queue Management and Congestion Control for Scalable Video Streaming,” *IEEE ICDCS*, pp. 768–777, Mar. 2004 (17.7%).
- 2003 66. M. Dai[†], D. Loguinov, and H. Radha, “Statistical Analysis and Distortion Modeling of MPEG-4 FGS,” *IEEE ICIP*, pp. 301–304, Sep. 2003 (44%).
67. D. Loguinov, A. Kumar[†], V. Rai[†], and S. Ganesh[†], “Graph-Theoretic Analysis of Structured Peer-to-Peer Systems: Routing Distances and Fault Resilience,” *ACM SIGCOMM*, pp. 395–406, Aug. 2003 (10.3%).
68. M. Dai[†] and D. Loguinov, “Analysis of Rate-Distortion Functions and Congestion Control in Scalable Internet Video Streaming,” *ACM NOSSDAV*, pp. 60–69, Jun. 2003 (30%).
- 2002 69. D. Loguinov and H. Radha, “Open-loop Rate Control for Real-time Video Streaming: Analysis of Binomial Algorithms,” *IEEE ICIP*, pp. 193–196, Sep. 2002 (55%).
70. D. Loguinov and H. Radha, “Video-Receiver Based Real-time Estimation of Channel Capacity,” *IEEE ICIP*, pp. 213–216, Sep. 2002 (55%).
71. D. Loguinov and H. Radha, “Effects of Channel Delays on Underflow Events of Compressed Video Over the Internet,” *IEEE ICIP*, pp. 205–208, Sep. 2002 (55%).
72. D. Loguinov and H. Radha, “End-to-End Internet Video Traffic Dynamics: Statistical Study and Analysis,” *IEEE INFOCOM*, pp. 723–732, Jun. 2002 (20.5%).
73. D. Loguinov and H. Radha, “Increase-Decrease Congestion Control for Real-time Streaming: Scalability,” *IEEE INFOCOM*, pp. 525–534, Jun. 2002 (20.5%).
- 2001 74. D. Loguinov and H. Radha, “Measurement Study of Low-bitrate Internet Video Streaming,” *ACM IMW*, pp. 281–293, Nov. 2001 (26.4%).
75. H. Radha and D. Loguinov, “Encoder Buffer Constraints for Video Transmission over Networks with No Quality-of-Service Guarantees,” *IEEE ISCC*, pp. 359–363, Jul. 2001 (55%).
76. K. Ravindran, D. Loguinov, K. Bhat, T.-J. Gong, and K. Gould, “Performance Engineering of End-Systems for High Bandwidth Multimedia Communications,” *SCS SPECTS*, Jul. 2001 (60%).

77. D. Loguinov and H. Radha, “On Retransmission Schemes for Real-time Streaming in the Internet,” *IEEE INFOCOM*, pp. 1310–1319, Apr. 2001 (23.1%).
78. K. Ravindran, A. Sabbir, D. Loguinov, and G. Bloom, “Cost Optimal Multicast Trees for Multi-Source Data Flows,” *IEEE INFOCOM*, pp. 966–975, Apr. 2001 (23.1%).
79. K. Ravindran, D. Loguinov, and T.-J. Gong, “Flow & QoS Based Routing Control for Multicast Protocols,” *SCS WMC*, Jan. 2001.
- 1998 80. K. Ravindran and D. Loguinov, “Incorporation of Flow and QoS Control in Multicast Routing Architectures,” *IEEE ICCCN*, pp. 312–320, Oct. 1998 (41%).

◇ **Invited Abstracts**

81. X. Wang[†] and D. Loguinov, “Modeling the Dynamics of the Internet AS-Level Structure: An Economic Perspective,” *ISMA Workshop on the Internet Topology (WIT)*, May 2006.
82. D. Loguinov, “What Does it Take to Disconnect a P2P Network?” *Allerton Conference on Communication, Control, and Computing*, Sep. 2005.

◇ **Book Chapters**

83. H. Radha and D. Loguinov, “Channel Modeling and Analysis for the Internet,” *Multimedia over IP and Wireless Networks*, Eds. Mihaela van der Schaar and Philip Chou, Academic Press, pp. 229–270, Mar. 2007.

◇ **Technical Reports**

84. M. Dai[†], Y. Zhang[†], and D. Loguinov, “A Unified Traffic Model for MPEG-4 and H.264 Video Traces (extended version),” *Texas A&M Technical Report 2009-4-3*, 14 pages, April 2009.
85. H.-T. Lee[†], D. Leonard[†], X. Wang[†], and D. Loguinov, “IRLbot: Scaling to 6 Billion Pages and Beyond (extended version),” *Texas A&M Technical Report 2008-2-2*, 14 pages, February 2008.
86. X. Wang[†], X. Liu, and D. Loguinov, “Modeling the Evolution of Degree Correlation in Scale-Free Topology Generators (extended version),” *Texas A&M Technical Report 2007-12-1*, 21 pages, December 2007.
87. Z. Yao[†], D. Leonard[†], X. Wang[†], and D. Loguinov, “Modeling Heterogeneous User Churn and Local Resilience of Unstructured P2P Networks (extended version),” *Texas A&M Technical Report 2006-8-1*, 17 pages, August 2006.
88. X. Liu, K. Ravindran, and D. Loguinov, “Multi-Hop Probing Asymptotics in Available Bandwidth Estimation: Stochastic Analysis (extended version),” *CUNY Technical Report TR-2005010*, 18 pages, August 2005.
89. X. Liu, K. Ravindran, B. Liu, and D. Loguinov, “Single-Hop Probing Asymptotics in Available Bandwidth Estimation: Sample-Path Analysis (extended version),” *CUNY Technical Report TR-2004012*, 19 pages, August 2004.

◇ **In Submission**

90. Z. Yao[†], D. Leonard[†], X. Wang[†], and D. Loguinov, “Modeling Heterogeneous User Churn and Local Resilience of Unstructured P2P Networks,” *Under submission to IEEE Trans. Parallel and Distributed Systems*, 14 pages.
91. Z. Yao[†] and D. Loguinov, “Understanding Disconnection and Stabilization of Chord,” *Under submission to IEEE Trans. Parallel and Distributed Systems*, 12 pages.
92. X. Wang[†], Z. Yao[†], Y. Zhang[†], and D. Loguinov, “Robust Lifetime Measurement in Large-Scale P2P Systems with Non-Stationary Arrivals,” *Under submission to IEEE/ACM Trans. Networking*, 14 pages.

93. Z. Yao[†] and D. Loguinov, “Link Lifetimes and Randomized Neighbor Selection in DHTs,” *Under submission to IEEE Trans. Parallel and Distributed Systems*, 13 pages.
94. Y. Zhang[†] and D. Loguinov, “ABS: Adaptive Buffer Sizing for Heterogeneous Networks,” *Under submission to Elsevier Computer Networks*, 12 pages.

Funding

◇ Research Grants

1. D. Loguinov (PI), “Bridging Analytical and Empirical Understanding of Churn in Decentralized P2P Networks,” *National Science Foundation CNS-0720571 (Computer Systems)*, \$318,990, 2007-2010.
2. D. Loguinov (PI), “Distributed Congestion Control for Heterogeneous Networks,” *National Science Foundation CNS-0519442 (Networking)*, \$300,000, 2005-2008.
3. D. Loguinov (PI), “Topology Models for Decentralized Random Graphs,” *National Science Foundation CNS-0434940 (Networking)*, \$335,541, 2004-2007.
4. D. Loguinov (PI), “Efficient Self-Organizing Content Distribution Network for Scalable Video Streaming Services,” *National Science Foundation ANI-0312461 (ITR)*, \$274,999, 2003-2006.
5. D. Loguinov (PI), “Optimal-Diameter Routing and Error Resilience in Peer-to-Peer Networks,” *National Science Foundation CCR-0306246 (Distributed Systems and Compilers)*, \$248,283, 2003-2006.

◇ Research Experience for Undergrads (REU)

6. D. Loguinov (PI), “REU: Bridging Analytical and Empirical Understanding of Churn in Decentralized P2P Networks,” PI: D. Loguinov, *National Science Foundation (Computer Systems)*, 2007-2010, \$12,000.
7. D. Loguinov (PI), “REU: Efficient Self-Organizing Content Distribution Network for Scalable Video Streaming Services,” PI: D. Loguinov, *National Science Foundation (ITR)*, 2003-2006, \$6,000.

Patents

◇ United States

1. D. Loguinov, “Method for Supporting Non-Linear, Highly Scalable Increase-Decrease Congestion Control Methods,” *U.S. Patent no. 7,206,285*, Issued: Apr. 17, 2007.
2. D. Loguinov, “Scheme for Supporting Real-Time Packetization and Retransmission in Rate-Based Streaming Applications,” *U.S. Patent no. 7,164,680*, Issued: Jan. 16, 2007.
3. D. Loguinov and H. Radha, “Method for Efficient Retransmission Timeout Estimation in NACK-based protocols,” *U.S. Patent no. 6,907,460*, Issued: Jun. 14, 2005.
4. H. Radha and D. Loguinov, “System and Method for Controlling the Delay Budget of a Decoder Buffer in a Streaming Data Receiver,” *U.S. Patent no. 6,700,893*, Issued: Mar. 2, 2004.

Awards

◇ Research

- *Best Paper Award* (among 25 accepted and 124 submitted), IEEE P2P 2009.
- *TEES Fellow*, Texas A&M University (for outstanding long-term research performance and commitment to excellence in engineering research initiatives in the Texas Engineering Experiment Station), 2008/2009.
- *Best Paper Award* (among 97 accepted and 880 submitted), WWW 2008.

- *TEES Select Young Faculty*, Texas A&M University (for outstanding research performance and commitment to excellence in engineering research initiatives in the Texas Engineering Experiment Station), 2005/2006.

◇ **Undergraduate Mentoring**

- *First place award*, REU/USRG poster competition at Texas A&M University, Autumn Breese “Characterizing DNS Implementations and their Cache-Poisoning Vulnerabilities,” Aug. 2009.
- *First place award*, REU/USRG poster competition at Texas A&M University, Drew Fisher “Efficient HTML Parsing for Web Crawlers,” Aug. 2008.

**Professional
Activities**

◇ **Societies**

- IEEE: Student Member 1999-2002, Member 2003-2007, Senior Member 2008–
- ACM: Student Member 2000-2002, Member 2003-2007, Senior Member 2008–
- SIGCOMM: Member 2004-2008

◇ **Technical Program Committees (TPC)**

- WWW 2009, 2010
- IEEE BroadNets 2008, 2009
- ACM NOSSDAV 2008
- IEEE INFOCOM 2004, 2005, 2006
- IEEE ICIP 2004, 2005
- IEEE ICME 2003

◇ **Journal Reviewer (# of papers)**

- IEEE Communications Letters (3)
- IEEE Journal of Selected Topics in Signal Processing (1)
- IEEE Journal on Selected Areas in Communications (1)
- IEEE Trans. on Automatic Control (2)
- IEEE Trans. on Circuits and Systems for Video Technology (1)
- IEEE Trans. on Circuits and Systems II (1)
- IEEE Trans. on Computers (2)
- IEEE Trans. on Multimedia (7)
- IEEE/ACM Trans. on Networking (21)
- IEEE Trans. on Parallel and Distributed Systems (7)
- IEEE Trans. on Vehicular Technology (1)
- IEEE Trans. on Wireless Communications (1)
- ACM SIGCOMM Computer Communication Review (2)
- ACM Trans. on Multimedia Computing, Comm., and Applications (2)
- Elsevier Computer Networks Journal (5)
- Elsevier Journal of Visual Communications and Image Representation (2)
- Springer VLDB Journal (1)

◇ **Conference Reviewer (non-TPC)**

- Packet Video 2007
- ACC 2006
- IEEE CDC 2005

- IEEE ICC 2003
- IEEE INFOCOM 1999
- ◇ **Session Chair**
 - IEEE ICME 2003
- ◇ **External Proposal Reviewer**
 - NSF panels: 2006, 2008
 - Research Foundation, City University of New York: 2004

**Students
Advised**

- ◇ **PhD Thesis**
 1. Clint Sparkman, “Analyzing Large-Scale Web Data and Algorithms,” *PhD in Computer Science, Texas A&M University*, May 2010.
 2. Xiaoming Wang, “Robust and Scalable Sampling Algorithms for Network Measurement,” *PhD in Computer Science, Texas A&M University*, Aug. 2009.
 3. Zhongmei Yao, “Understanding Churn in Decentralized Peer-to-Peer Networks,” *PhD in Computer Science, Texas A&M University*, Aug. 2009.
 4. Seong-Ryong Kang, “Performance Analysis and Network Path Characterization for Scalable Internet Streaming,” *PhD in Computer Science, Texas A&M University*, May 2008.
 5. Yueping Zhang, “Stable and Scalable Congestion Control for High-Speed Heterogeneous Networks,” *PhD in Computer Engineering, Texas A&M University*, May 2008.
 6. Min Dai, “Rate-Distortion Analysis and Traffic Modeling for Scalable Video Coders,” *PhD in Electrical Engineering, Texas A&M University*, Dec. 2004 (co-advised with Dr. Chan).
- ◇ **MS Thesis**
 7. Chandan Reddy, “Capacity-Proportional Unstructured Peer-To-Peer Networks,” *MS in Computer Engineering, Texas A&M University*, Aug. 2009.
 8. Videsh Sadafal, “Measurement and Analysis of BitTorrent,” *MS in Computer Science, Texas A&M University*, Aug. 2008.
 9. Hsin-Tsang Lee, “IRLbot: Design and Performance Analysis of a Large-Scale Web Crawler,” *MS in Computer Science, Texas A&M University*, May 2008.
 10. Kunal Patel, “Dispatch: Distributed Peer-to-Peer Simulations,” *MS in Computer Science, Texas A&M University*, Aug. 2007.
 11. Saurabh Jain, “Evaluation of Explicit Congestion Control for High-Speed Networks,” *MS in Electrical Engineering, Texas A&M University*, May 2007 (co-advised with Dr. Reddy).
 12. Prasanth Nittala, “Deterministic Routing Algorithms in Large Scale Wireless Sensor Networks,” *MS in Computer Science, Texas A&M University*, Dec. 2004.
 13. Amit Bhati, “Envelope: A Method to Estimate Bottleneck and Available Bandwidth over a Network Path with Multiple Congested Links,” *MS in Computer Science, Texas A&M University*, Dec. 2004.
 14. Geetha Kakarlapudi, “Analysis of Beacon Triangulation in Random Graphs,” *MS in Computer Science, Texas A&M University*, Dec. 2004.
 15. Bharat Iyer, “Capacity and Scale-Free Dynamics of Evolving Wireless Networks,” *MS in Electrical Engineering, Texas A&M University*, Aug. 2003 (co-advised with Dr. Reddy).

16. Sai Ganesh, “Nonlinear Continuous Feedback Controllers,” *MS in Computer Science, Texas A&M University*, Aug. 2003.

◇ **Undergraduate Research**

17. Autumn Breese “Characterizing DNS Implementations and their Cache-Poisoning Vulnerabilities,” *Texas A&M University*, NSF REU, Summer 2009.
18. Drew Fisher, “Efficient HTML Parsing for Web Crawlers,” *Texas A&M University*, NSF REU, Summer 2008.
19. Matt Smith, “Mapping the Internet with Reverse Traceroute,” *Texas A&M University*, NSF REU, Spring 2008.
20. Robert Lychev, “Distributed Computing of Monte Carlo Simulations in Peer-to-Peer Networks,” *Texas A&M University*, NSF REU, Summer 2005.
21. Juan Casas, “Performance Analysis of Structured P2P Networks: Graph Diameter and Average Distance,” *Texas A&M University*, NSF REU, Summer 2004.

◇ **In Progress**

22. Derek Leonard, expected PhD in 2010
23. Tanzir Ahmed, projected PhD in 2013
24. Xiaoyong Li, projected PhD in 2013
25. Ye Tian, projected PhD in 2014
26. Ankur Nandwani, expected MS in 2010
27. Brad Sattem, expected MS in 2010
28. Matt Smith, expected MS in 2010
29. Vivek Bhoj, expected MS in 2011
30. Sadhan Sood, expected MS in 2011
31. Xiaoxi Zhang, expected MS in 2011
32. Rand Dusing, undergrad research, Spring 2010
33. Patrick Webster, undergrad research, Spring 2010

University Service

◇ **Department**

1. Graduate Advisory Committee (GAC): Member 2007–
2. Department Advisory Committee (AdCom): Elected Member 2006-2007
3. Undergraduate Curriculum Committee (UGCC): Member 2005-2007
4. Space Committee: Member 2004-2005
5. Graduate Admissions and Awards Committee (GAAC): Member 2002-2004, 2007-2009
6. Computing Services Advisory Committee: Member 2002-2004

Student Committees

◇ **PhD Thesis**

1. Ni Qin, “Algorithms, Protocols & System for Remote Observation Using Networked Robotic Cameras,” *PhD in Computer Science, Texas A&M University*, May 2008.
2. Qian Xu, “Layered Wyner-Ziv Video Coding: A New Approach to Video Compression and Delivery,” *PhD in Electrical and Computer Engineering, Texas A&M University*, Aug. 2007.

3. Zhixin Liu, "Slepian-Wolf Coded Nested Quantization for Wyner-Ziv Coding: High-Rate Performance Analysis, Code Design, and Application to Cooperative Networks," *PhD in Electrical and Computer Engineering, Texas A&M University*, Aug. 2007.
4. Sumitha Bhandarkar, "Congestion Control Algorithms of TCP in Emerging Networks," *PhD in Electrical and Computer Engineering, Texas A&M University*, Aug. 2006.
5. Soohyun Cho, "Congestion Control Schemes for Single and Parallel TCP Flows in High Bandwidth-Delay Product Networks," *PhD in Computer Science, Texas A&M University*, Dec. 2005.
6. Xinwen Fu, "On Traffic Analysis Attacks and Countermeasures," *PhD in Computer Engineering, Texas A&M University*, Dec. 2005.
7. Eun-Sun Jung, "Energy Efficiency in Wireless Networks," *PhD in Computer Science, Texas A&M University*, Aug. 2005.
8. Yong Xiong, "Modeling and Control of Network Traffic for Performance and Secure Communications," *PhD in Computer Science, Texas A&M University*, Dec. 2004.

◇ **MS Thesis**

9. Kiran Kotla, "Adapting A Delay Based Protocol To Heterogeneous Environments," *MS in Computer Engineering, Texas A&M University*, Aug. 2008.
10. Praveen Kota, "Rate-Adaptive H.264 for TCP/IP Networks," *MS in Electrical Engineering, Texas A&M University*, May 2006.
11. Mallik Kommaraju, "Predictor Development for Controlling Real-time Applications over the Internet," *MS in Mechanical Engineering, Texas A&M University*, Dec. 2005.
12. Qian Xu, "Layered Wyner-Ziv Video Coding for Noisy Channels," *MS in Electrical Engineering, Texas A&M University*, Jun. 2004.

Invited Talks

◇ **University**

- Georgia Institute of Technology, "On the Partitioning Behavior of Churn-Based Peer-to-Peer Systems," *Networking and Telecommunications Seminar*, Mar. 2006.
- University of Illinois, Urbana-Champaign, "JetMax: Scalable Max-Min Congestion Control for High-Speed Heterogeneous Networks," *Computer Engineering Seminar*, Feb. 2006.
- Washington University in St. Louis, "JetMax: Scalable Max-Min Congestion Control for High-Speed Heterogeneous Networks," *Computer Science & Engineering Colloquium*, Jan. 2006.
- Texas A&M University, "On Lifetime-Based Node Failure and Stochastic Resilience of Decentralized Peer-to-Peer Networks," *Computer Science Colloquium*, Apr. 2005.
- Texas A&M University, "Routing in Structured P2P Networks: Diameter-Degree Tradeoffs," *Computer Science Colloquium*, Apr. 2004.
- Texas A&M University, "Adaptive Scalable Internet Streaming," *Computer Science Colloquium*, Oct. 2002.

◇ **Conference**

- D. Loguinov, "What Does it Take to Disconnect a P2P Network?" *Allerton Conference on Communication, Control, and Computing*, Sep. 2005.

**Courses
Taught**

◇ **Undergraduate**

- CPSC 463, “Networks and Distributed Processing,” Fall 2004, Fall 2005, Fall 2006, Fall 2007, Spring 2009, Fall 2009, Spring 2010

◇ **Graduate**

- CPSC 619, “Networks and Distributed Processing,” Spring 2004, Spring 2005, Spring 2006, Spring 2008, Spring 2010
- CPSC 662, “Distributed Systems,” Spring 2003
- CPSC 689, “Special Topics in Overlay Networks,” Spring 2008, Spring 2009
- CPSC 689, “Special Topics in Congestion Control,” Fall 2006
- CPSC 689, “Special Topics in P2P Networks,” Spring 2005, Fall 2005
- CPSC 689, “Special Topics in Networking,” Fall 2002, Fall 2003

Other

◇ **Student Travel Grants**

- ACM SIGCOMM, 2001
- IEEE INFOCOM, 2001

◇ **Fellowships**

- Internet Video Project, Philips Research USA, 1998–2001
- Computer Science, City University of New York, 1997–1998

◇ **Teaching Assistant**

- Computer Science, City College of New York, 1996–1997
- Computer Science, Kansas State University, 1995–1996

◇ **Fun Stuff**

- Erdős number 3 (Paul Erdős → Stephan A. Burr → Gary S. Bloom → me)
- Top score on the PhD qualifying exam, Computer Science, City University of New York, 1997
- 9-way tie for top score (out of 1261 applicants), entrance exams to the Department of Computer Science, Moscow State University, 1991