

# Sergey Gorinsky

Curriculum Vitae

(as of 2017/10/23)

IMDEA Networks Institute  
Avenida del Mar Mediterraneo, 22  
Leganes, Madrid, 28918, Spain

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Web: people.networks.imdea.org/~sergey\_gorinsky/

## RESEARCH INTERESTS

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Economics, technology, and security of networked systems: behavior of distributed entities, sharing of network resources, network structure, innovative business models, incentives, cost reduction, revenue maximization

## EDUCATION

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2003/8	<b>Ph.D. in Computer Science</b> <i>University of Texas at Austin, USA</i> Dissertation: "Robust Congestion Control for IP Multicast" Advisor: Dr. Harrick Vin	4.00 / 4.00 GPA
1999/5	<b>M.S. in Computer Science</b> <i>University of Texas at Austin, USA</i>	4.00 / 4.00 GPA
1994/2	<b>Engineer in Computer Engineering</b> <i>Moscow Institute of Electronic Technology, Russia</i> Thesis: "A Distributed Real-Time System for Control of a Knitting-Machine" Advisor: Dr. Aleksandr Shishkevich	5.00 / 5.00 GPA

## RESEARCH EXPERIENCE

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present – 2009/6	<b>Research Associate Professor (tenured)</b> <i>IMDEA Networks Institute, Spain</i> <i>Network economics; Internet interconnections; transit; peering; remote peering; content delivery networks; traffic attraction for revenue maximization; traffic offloading for cost reduction; structure and evolution of the Internet ecosystem; socially aware network design; Internet science</i>
2009/5 – 2003/9	<b>Assistant Professor (tenure track)</b> <i>Washington University in St. Louis, Department of Computer Science and Engineering, USA</i> <i>Internet architecture; incentive-oriented network design; delay-sensitive applications; fair efficient scheduling; transport protocols; network congestion control; link buffer sizing; router algorithms; robust protocols for untrustworthy network environments; virtual networks; virtual networking laboratories</i>
2003/8 – 1998/9	<b>Research Assistant</b> <i>University of Texas at Austin, Department of Computer Sciences, USA</i> Supervisor: Dr. Harrick Vin <i>Network congestion control; fair network sharing in the presence of misbehaving parties; utility of feedback in multicast; multicast protocols robust to receiver misbehavior</i>
1999/8 – 1999/5	<b>Summer Manager</b> <i>AT&amp;T Research Labs, Networking and Distributed Systems Research Center, USA</i> Mentors: Dr. K.K. Ramakrishnan, Dr. Matthias Grossglauser, and Dr. Nick Duffield <i>Scalable, efficient, and fair layered multicast congestion control in heterogeneous networks</i>

## RESEARCH EXPERIENCE (continued)

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- 1998/8 – 1998/5 **Engineer**  
*Lucent Bell Labs*, Network and Service Management Research Department, USA  
Mentors: Dr. Binay Sugla, Dr. Ajita John, and Keith Vanderveen  
*Network management with run-time specification of Management Information Bases*
- 1998/5 – 1997/6 **Research Assistant**  
*University of Texas at Austin*, Department of Computer Sciences, USA  
Supervisor: Dr. Aloysius Mok  
*Algorithms and admission control for real-time scheduling of multimedia applications*
- 1997/5 – 1994/9 **Faculty Assistant**  
*New Jersey Institute of Technology*, Department of Computer and Information Science, USA  
Supervisors: Dr. Alex Stoyenko and Dr. Sanjita Baruah  
*Efficient traffic characterization, traffic reshaping, and admission control for guaranteed-services networks*
- 1994/2 – 1990/9 **Undergraduate Research Assistant**  
*Moscow Institute of Electronic Technology*, Department of Computer Engineering, Russia  
Supervisor: Dr. Aleksandr Shishkevich  
*Distributed real-time control for a knitting-machine; hardware components; local-area network protocols*

## JOURNAL PUBLICATIONS\*

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- (11) I. Komnios, F. Tzapeli, and **S. Gorinsky**, “**Cost-Effective Multi-Mode Offloading with Peer-Assisted Communications**”, *Ad Hoc Networks*, 25(B), pp. 370-382, February 2015 (citation count: 5)
- (10) I. Castro, R. Stanojevic, and **S. Gorinsky**, “**Using Tuangou to Reduce IP Transit Costs**”, *IEEE/ACM Transactions on Networking*, 22(5), pp. 1415-1428, October 2014 (citation count: 20)
- (9) M. Podlesny and **S. Gorinsky**, “**Leveraging the Rate-Delay Trade-off for Service Differentiation in Multi-Provider Networks**”, *IEEE Journal on Selected Areas in Communications*, 29(5), pp. 997-1008, May 2011 (citation count: 15)
- (8) M. Georg and **S. Gorinsky**, “**Congestion Control with a Misbehaving Receiver: Robust TFRC and Other Protocols**”, *Journal of Internet Engineering*, 3(1), pp. 210-218, December 2009
- (7) **S. Gorinsky**, E.J. Friedman, S. Henderson, and C. Jechlitschek, “**Efficient Fair Algorithms for Message Communication**”, *Simulation Modelling Practice and Theory*, 17(3), pp. 513-527, March 2009 (citation count: 3)
- (6) **S. Gorinsky**, M. Georg, M. Podlesny, and C. Jechlitschek, “**A Theory of Load Adjustments and its Implications for Congestion Control**”, *Journal of Internet Engineering*, 1(2), pp. 82-93, October 2007 (citation count: 8)
- (5) **S. Gorinsky**, A. Kantawala, and J. Turner, “**Simulation Perspectives on Link Buffer Sizing**”, *Simulation: Transactions of the Society for Modeling and Simulation International* (special issue on New Challenges in Large-Scale Computer Systems and Network Modeling and Simulation), 83(3), pp. 245-257, March 2007 (citation count: 14)
- (4) D.K. Blandford, S.A. Goldman, **S. Gorinsky**, Y. Zhou, and D.R. Dooly, “**Smartacking: Improving TCP Performance from the Receiving End**”, *Journal of Internet Engineering*, 1(1), pp. 6-21, January 2007 (citation count: 8)
- (3) **S. Gorinsky**, S. Jain, H. Vin, and Y. Zhang, “**Design of Multicast Protocols Robust against Inflated Subscription**”, *IEEE/ACM Transactions on Networking*, 14(2), pp. 249-262, April 2006 (citation count: 18)

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\*The citation counts are according to a Google Scholar search on 2017/10/23.

## JOURNAL PUBLICATIONS (continued)

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- (2) S. Baruah, D. Chen, **S. Gorinsky**, and A. Mok, “**Generalized Multiframe Tasks**”, *Journal of Real-Time Systems*, 17(1), pp. 5-22, July 1999 (citation count: 253)
- (1) P. Sinha, **S. Gorinsky**, P. Laplante, A. Stoyenko, and T. Marlowe, “**Classification and Overview of Research in Real-Time Imaging**”, *Journal of Electronic Imaging*, 5(4), pp. 466-478, October 1996 (citation count: 5)

## CONFERENCE AND WORKSHOP PUBLICATIONS

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- (37) P. Bangera, S. Hasan, and **S. Gorinsky**, “**An Advertising Revenue Model for Access ISPs**”, *Proceedings of IEEE Symposium on Computers and Communications (ISCC 2017)*, pp. 582-589, July 2017
- (36) P. Bangera and **S. Gorinsky**, “**Ads versus Regular Contents: Dissecting the Web Hosting Ecosystem**”, *Proceedings of IFIP Networking 2017*, pp.1-9, June 2017 (citation count: 1)
- (35) I. Castro and **S. Gorinsky**, “**Estimating the Real with the Virtual: How does the Accuracy Relate to the Internet Penetration?**”, *Proceedings of COMSNETS 2016*, pp. 1-8, January 2016
- (34) I. Castro, A. Panda, B. Raghavan, S. Shenker, and **S. Gorinsky**, “**Route Bazaar: Automatic Interdomain Contract Negotiation**”, *Proceedings of USENIX HotOS XV*, pp. 1-7, May 2015 (citation count: 12)
- (33) I. Castro, J. C. Cardona, **S. Gorinsky**, and P. Francois, “**Remote Peering: More Peering without Internet Flattening**”, *Proceedings of ACM CoNEXT 2014*, pp. 185-197, December 2014 (citation count: 30)
- (32) P. Bangera and **S. Gorinsky**, “**Economics of Traffic Attraction by Transit Providers**”, *Proceedings of IFIP Networking 2014*, pp.1-9, June 2014 (citation count: 6)
- (31) S. Hasan, **S. Gorinsky**, C. Dovrolis, and R. Sitaraman, “**Trade-offs in Optimizing the Cache Deployments of CDNs**”, *Proceedings of IEEE INFOCOM 2014*, pp. 460-468, April 2014 (citation count: 35)
- (30) P. Bangera and **S. Gorinsky**, “**An Economic Perspective on Traffic Attraction by Internet Transit Providers**”, *Proceedings of IEEE ICNP 2013*, pp. 1-2, October 2013 (citation count: 2)
- (29) M. Podlesny, **S. Gorinsky**, and B. Rengarajan, “**AIST: Insights into Queuing and Loss on Highly Multiplexed Links**”, *Proceedings of IEEE/ACM IWQoS 2012*, pp.1-9, June 2012
- (28) S. Hasan and **S. Gorinsky**, “**Obscure Giants: Detecting the Provider-Free ASes**”, *Proceedings of IFIP Networking 2012*, pp. 149-160, May 2012 (citation count: 15)
- (27) I. Castro and **S. Gorinsky**, “**T4P: Hybrid Interconnection for Cost Reduction**”, *Proceedings of NetEcon 2012*, pp. 178-183, March 2012 (citation count: 18)
- (26) R. Stanojevic, I. Castro, and **S. Gorinsky**, “**CIPT: Using Tuangou to Reduce IP Transit Costs**”, *Proceedings of ACM CoNEXT 2011*, pp.1-12, December 2011 (citation count: 34)
- (25) P. Bangera and **S. Gorinsky**, “**Impact of Prefix Hijacking on Payments of Providers**”, *Proceedings of COMSNETS 2011*, pp. 1-10, January 2011 (citation count: 19)
- (24) M. Podlesny and **S. Gorinsky**, “**Stateless RD Network Services**”, *Proceedings of IFIP Networking 2010*, pp. 135-147, May 2010 (citation count: 3)
- (23) M. Podlesny and **S. Gorinsky**, “**RD Network Services: Differentiation through Performance Incentives**”, *Proceedings of ACM SIGCOMM 2008*, pp. 255-266, August 2008 (citation count: 35)
- (22) **S. Gorinsky**, K.K. Ramakrishnan, and H. Vin, “**Addressing Heterogeneity, Scalability, and Privacy in Layered Multicast Congestion Control**”, *Proceedings of the International Conference on Computer Communications and Networks (ICCCN 2008)*, pp. 1-8, August 2008 (citation count: 25)
- (21) **S. Gorinsky** and H. Vin, “**Effairness: Dealing with Time in Congestion Control Evaluation**”, *Proceedings of the International Conference on Networking and Services (ICNS 2008)*, pp. 40-45, March 2008 (citation count: 2)

- (20) C. Wiseman, K. Wong, T. Wolf, and **S. Gorinsky**, “**Operational Experience with a Virtual Networking Laboratory**”, *Proceedings of ACM SIGCSE 2008*, pp. 427-431, March 2008 (citation count: 15)
- (19) M. Podlesny and **S. Gorinsky**, “**Price of Asynchrony: Queuing under Ideally Smooth Congestion Control**”, *Proceedings of IEEE International Conference on Network Protocols (ICNP 2007)*, pp. 332-333, October 2007 (citation count: 2)
- (18) **S. Gorinsky** and C. Jechlitschek, “**Fair Efficiency, or Low Average Delay without Starvation**”, *Proceedings of the International Conference on Computer Communications and Networks (ICCCN 2007)*, pp. 424-429, August 2007 (citation count: 15)
- (17) M. Podlesny and **S. Gorinsky**, “**MCP: Few Bits for Fairing and Small Queues in the Stable State**”, *Proceedings of IEEE Symposium on Computers and Communications (ISCC 2007)*, pp. 1079-1084, July 2007 (citation count: 7)
- (16) M. Georg, C. Jechlitschek, and **S. Gorinsky**, “**Improving Individual Flow Performance with Multiple Queue Fair Queuing**”, *Proceedings of IEEE International Workshop on Quality of Service (IWQoS 2007)*, pp. 141-144, June 2007 (citation count: 6)
- (15) **S. Gorinsky**, C. Jechlitschek, and N.S.V. Rao, “**A Network Architecture for Large-Scale Science**”, *Proceedings of IEEE High-Speed Networks (HSN 2007)*, pp. 1-5, May 2007
- (14) M. Podlesny and **S. Gorinsky**, “**Multimodal Congestion Control for Low Stable-State Queuing**”, *Proceedings of IEEE INFOCOM 2007*, pp. 2466-2470, May 2007 (citation count: 12)
- (13) K. Wong, T. Wolf, **S. Gorinsky**, and J. Turner, “**Teaching Experiences with a Virtual Network Laboratory**”, *Proceedings of ACM SIGCSE 2007*, pp. 481-485, March 2007 (citation count: 37)
- (12) **S. Gorinsky** and N.S.V. Rao, “**Dedicated Channels as an Optimal Network Support for Effective Transfer of Massive Data**”, *Proceedings of IEEE INFOCOM 2006*, pp. 1-5, April 2006 (citation count: 28)
- (11) M. Georg and **S. Gorinsky**, “**Protecting TFRC from a Selfish Receiver**”, *Proceedings of the Joint International Conference on Autonomic and Autonomous Systems and International Conference on Networking and Services (ICAS/ICNS 2005)*, pp. 57-62, October 2005 (citation count: 9)
- (10) **S. Gorinsky**, A. Kantawala, and J. Turner, “**Link Buffer Sizing: A New Look at the Old Problem**”, *Proceedings of IEEE Symposium on Computers and Communications (ISCC 2005)*, pp. 507-514, June 2005 (citation count: 63)
- (9) **S. Gorinsky**, “**Feedback Modeling in Internet Congestion Control**”, *Proceedings of Next Generation Teletraffic and Wired/Wireless Advanced Networking (NEW2AN 2004)*, pp. 231-234, February 2004 (citation count: 15)
- (8) **S. Gorinsky**, S. Jain, H. Vin, and Y. Zhang, “**Robustness to Inflated Subscription in Multicast Congestion Control**”, *Proceedings of ACM SIGCOMM 2003*, pp. 87-98, August 2003 (citation count: 31)
- (7) **S. Gorinsky**, S. Jain, H. Vin, and Y. Zhang, “**Robustness of Multicast Congestion Control to Inflated Subscription**”, *Proceedings of ACM SIGMETRICS 2003*, pp. 312-313, June 2003 (citation count: 1)
- (6) **S. Gorinsky**, S. Jain, and H. Vin, “**Multicast Congestion Control with Distrusted Receivers**”, *Proceedings of Networked Group Communication (NGC 2002)*, pp. 19-26, October 2002 (citation count: 19)
- (5) **S. Gorinsky** and H. Vin, “**The Utility of Feedback in Layered Multicast Congestion Control**”, *Proceedings of Network and Operating Systems Support for Digital Audio and Video (NOSSDAV 2001)*, pp. 93-102, June 2001 (citation count: 39)
- (4) S. Baruah, G. Buttazzo, **S. Gorinsky**, and G. Lipari, “**Scheduling Periodic Task Systems to Minimize Output Jitter**”, *Proceedings of Real-Time Computing Systems and Applications (RTCSA 1999)*, pp. 62-69, December 1999 (citation count: 109)

## CONFERENCE AND WORKSHOP PUBLICATIONS (continued)

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- (3) **S. Gorinsky**, S. Baruah, and A. Stoyen, “**Boosting the Network Performance via Traffic Reshaping**”, *Proceedings of the International Conference on Computer Communications and Networks (ICCCN 1997)*, pp. 285-290, September 1997 (citation count: 5)
- (2) **S. Gorinsky**, S. Baruah, T. Marlowe, and A. Stoyenko, “**Exact and Efficient Analysis of Schedulability in Fixed-Packet Networks: A Generic Approach**”, *Proceedings of IEEE INFOCOM 1997*, pp. 584-591, April 1997 (citation count: 14)
- (1) **S. Gorinsky**, S. Baruah, and A. Stoyenko, “**Traffic Reshaping in Packet-Switched Virtual-Circuit Fixed-Packet Network**”, *Proceedings of Resource Allocation Problems in Multimedia Systems (RAPMS 1996)*, pp. 1-5, December 1996 (citation count: 5)

## SELECTED TECHNICAL REPORTS

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- (2) **S. Gorinsky** and H. Vin, “**Extended Analysis of Binary Adjustment Algorithms**”, *Technical Report TR2002-39, Department of Computer Sciences, University of Texas at Austin*, August 2002 (citation count: 27)
- (1) **S. Gorinsky** and H. Vin, “**Additive Increase Appears Inferior**”, *Technical Report TR2000-18, Department of Computer Sciences, University of Texas at Austin*, May 2000 (citation count: 31)

## HONORS

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- |                 |   |
|-----------------|---|
| 2017            | <b>Distinguished Member</b> of the Technical Program Committee, <i>IEEE INFOCOM 2017</i>  |
| 2016            | <b>Distinguished Member</b> of the Technical Program Committee, <i>IEEE INFOCOM 2016</i>  |
| 2015            | <b>Distinguished Member</b> of the Technical Program Committee, <i>IEEE INFOCOM 2015</i>  |
| 2013            | <b>I3 Certification</b> (Promotion, Incorporation and Intensification of Research Activities)<br><i>Ministry of Economy and Competitiveness, Spain</i>                                    |
| 2008            | <b>Best Paper Award</b> for “Effairness: Dealing with Time in Congestion Control Evaluation”<br><i>International Conference on Networking and Services (ICNS 2008)</i>                    |
| 2007            | <b>Best Paper Award Nomination</b> for “Fair Efficiency, or Low Average Delay without Starvation”<br><i>International Conference on Computer Communications and Networks (ICCCN 2007)</i> |
| 1996/5 – 1994/9 | <b>REAP Fellowship</b> (merit scholarship for graduate students from Russia and Eastern Europe)<br><i>Association of International Educators, NAFSA, USIA, USA</i>                        |
| 1994            | <b>Diploma with Honors</b> (graduation with the highest honors)<br><i>Moscow Institute of Electronic Technology, Russia</i>   |
| 1993/5 – 1992/1 | <b>Moscow Mayor’s Fellowship</b> (merit scholarship for undergraduate students)<br><i>City of Moscow, Russia</i>  |

## RESEARCH FUNDING

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|------------------|---|
| 2018/9 – 2014/10 | “ <b>Cloud4BigData: Efficient Cloud and BigData Infrastructure</b> ”, project member<br><i>Regional Government of Madrid, Department of Education, Youth, and Sports, grant S2013/ICE-2894</i><br>500,020 Euros (4 partners)  |
| 2016/12 – 2015/1 | “ <b>HyperAdapt: Modeling and Online Performance Optimization of Adaptive Networks</b> ”, project member<br><i>Spanish Ministry of Science and Innovation, State Program for Research, Development, and Innovation Aimed at Society’s Challenges, grant TEC2014-55713-R</i><br>175,450 Euros (single institution) |

## RESEARCH FUNDING (continued)

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- 2015/5 – 2011/12 **“EINS: Network of Excellence in Internet Science”**, PI  
*European Commission, FP7-ICT grant 288021*  
4,997,000 Euros (33 partner institutions)
- 2014/12 – 2010/1 **“Secure Networked Systems”**, sole PI  
*Spanish Ministry of Science and Innovation, Ramon y Cajal grant RYC-2009-04660*  
192,480 Euros
- 2013/12 – 2010/1 **“MEDIANET: Integration of Next Generation Multimedia Services in the Internet of the Future”**, project member  
*Regional Government of Madrid, Department of Education grant S2009/TIC-1468*  
858,840 Euros (4 partners)
- 2013/6 – 2010/7 **“MEDIEVAL: MultimEDIA transport for mobiIE Video AppLIcations”**, key personnel  
*European Commission, FP7-ICT grant 258053*  
3,470,885 Euros (9 partner institutions)
- 2013/6 – 2010/7 **“FLAVIA: FLexible Architecture for Virtualizable wireless future Internet Access”**, key personnel  
*European Commission, FP7-ICT grant 257263*  
3,653,886 Euros (10 partner institutions)
- 2013/2 – 2010/10 **“AMAROUT: Network Service Differentiation via Built-in Performance Incentives”**, PI  
*European Commission, FP7-PEOPLE grant 229599*  
75,596 Euros (out of the total 3,830,000 Euros)
- 2009/8 – 2006/9 **“An Architecture for a Diversified Internet”**, Co-PI  
*U.S. National Science Foundation, NSF grant CNS-0626661, \$1,098,834*
- 2009/8 – 2006/9 **“Technologies for Improving Laboratory Experiences in Advanced Technical Education”**, Co-PI  
*U.S. National Science Foundation, NSF grant REC-0632580, \$439,620*
- 2007/12 – 2004/1 **“Technologies for Dynamically Extensible Networks”**, project member  
*U.S. National Science Foundation, NSF grant ANI-0325298, \$2,100,000*
- 2005/8 – 2004/9 **“Virtual Networking – Enabling Network Service Innovation”**, Co-PI  
*U.S. National Science Foundation, NSF grant CNS-0435173, \$250,000*
- 2003/8 – 2000/9 **“Multicast Congestion Control Protocols”**, project member  
*U.S. National Science Foundation, NSF grant ANI-0082294, \$600,000*

## PROFESSIONAL SERVICE

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- present – 2004 **Advising of Doctoral Students**  
Vadim Kirilin, Carlos III University of Madrid, Spain, from 2016
- Dr. Pradeep Bangera, *“Alternative Revenue Sources for Internet Service Providers”*, Carlos III University of Madrid, Spain, 2016/11 (Ph.D. in Telematics Engineering; defended on 2016/11/14; currently with PriceFlier, India)
- Dr. Syed Hasan, *“The Role of Topology and Contracts in Internet Content Delivery”*, Carlos III University of Madrid, Spain, 2016/6 (Ph.D. in Telematics Engineering; defended on 2016/6/20; currently with PriceFlier, India)
- Dr. Ignacio Castro, *“Economics of Internet Interdomain Interconnections”*, Open University of Catalonia, Spain, 2015/7 (Ph.D. in Information and Knowledge Society; defended on 2015/7/20; currently a postdoctoral researcher in Dr. Steve Uhlig’s group at Queen Mary University of London, United Kingdom)

## PROFESSIONAL ACTIVITIES (continued)

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- Dr. Maxim Podlesny, "*Networking Mechanisms for Delay-Sensitive Applications*", Washington University in St. Louis, USA, 2009/8 (Ph.D. in Computer Science; defended on 2009/7/28; currently a senior associate at PwC Canada)
- present – 2003 **Service on Doctoral Dissertation Committees**
- Dr. Ilya Nikolaevskiy, "*Scalability and Resiliency of Static Routing*", Aalto University, Finland, 2016/12 (Doctor of Science in Computer Science; defended on 2016/12/20, pre-examiners: Dr. Alon Efrat and Dr. Sergey Gorinsky; opponent: Dr. Yevgeni Koucheryavy; instructors: Dr. Andrei Gurtov and Dr. Andrey Lukyanenko; supervisor: Dr. Antti Ylä-Jääski)
- Dr. Marco Chiesa, "*The Role of Routing Policies in the Internet: Stability, Security, and Load-Balancing*", Roma Tre University, Italy, 2014/6 (Ph.D. in Computer Science and Engineering; defended on 2014/6/9, reviewers: Dr. Sergey Gorinsky and Dr. Gordon Wilfong; advisee of Dr. Giuseppe Di Battista)
- Dr. Tatiana Polishchuk, "*Enabling Multipath and Multicast Data Transmission in Legacy and Future Internet*", University of Helsinki, Finland, 2013/9 (Ph.D. in Computer Science; defended on 2013/9/9, pre-examiners: Dr. Sergey Gorinsky and Dr. Guillaume Urvoy-Keller; opponent: Dr. Bob Briscoe; instructor: Dr. Andrei Gurtov; supervisor: Dr. Jussi Kangasharju)
- Dr. Arun Vishwanath, "*Routers and Networks with Near-Zero Buffers*", University of New South Wales, Australia, 2011/3 (Ph.D. in Electrical Engineering and Telecommunications; advisee of Dr. Vijay Sivaraman)
- Dr. Ruibiao Qiu, "*Design Issues for Reserved Delivery Subnetworks*", Washington University in St. Louis, USA, 2006/5 (D.Sc. in Computer Science; defended on 2006/1/6; advisee of Dr. Jonathan Turner)
- Dr. Edward Spitznagel, "*High Performance Packet Classification*", Washington University in St. Louis, USA, 2005/12 (D.Sc. in Computer Science; defended on 2005/6/21; advisee of Dr. Jonathan Turner)
- Dr. Anshul Kantawala, "*Improving the Performance of Internet Data Transport*", Washington University in St. Louis, USA, 2005/5 (D.Sc. in Computer Science; defended on 2005/2/16; advisee of Dr. Jonathan Turner)
- Dr. Prashanth Pappu, "*Scheduling Algorithms for CIOQ Switches*", Washington University in St. Louis, USA, 2004/8 (Ph.D. in Computer Engineering; defended on 2004/7/27; advisee of Dr. Jonathan Turner)
- present – 2014 **Membership in Conference Steering Committees**  
*COMSNETS Association*
- present – 2006 **Service on Journal Editorial Boards**  
*Journal of Communications, Journal of Internet Engineering*
- present – 2007 **Chairing of Program Committees**
- ICNP 2017 Chair* (with Dr. Jörg Liebeherr)
- ICCCN 2017 Track Chair* (with Dr. Baochun Li)
- NetSciCom 2014 (INFOCOM Network Science for Communication Networks) Chair* (with Dr. Nishanth Sastry and Dr. Thrasyvoulos Spyropoulos)
- COMSNETS 2013 Chair* (with Dr. Prashant Shenoy and Dr. Srikrishna Bhashyam)
- E6 2012 (COMSNETS Energy in Communication, Information, and Cyber-physical Systems) Chair* (with Dr. Shivkumar Kalyanaraman)

## PROFESSIONAL ACTIVITIES (continued)

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- IMDEA Networks Workshop 2011 (Internet Science) *Chair*
- ICCCN 2009 *Vice-Chair* (with Dr. Lavy Libman, Dr. Yang Yang, and Dr. Xiaobo Zhou)
- HSN 2008 (INFOCOM High-Speed Networks) *Chair* (with Dr. Ashwin Gumaste)
- FIAP 2008 (ICCCN Future Internet Architectures and Protocols) *Chair* (with Dr. Tilman Wolf)
- present – 2005 **Service on Program Committees**  
*SIGCOMM 2016, 2012; CoNEXT 2017–2015; INFOCOM 2018–2006; ICNP 2017–2010, 2008 (Area Chair: 2016, 2013; TPC Chair: 2017); Networking 2016, 2012, 2011; ICCCN 2017, 2009–2007; PAM 2017, 2014; IC2E 2017; ITC 28 (2016); AINTEC 2016; NetEcon 2015, 2011; NetSciCom 2014; W-PIN+NetEcon 2014; COMSNETS 2013–2009; ICDCS 2013, 2012; E6 2012; Global Internet 2012–2010; LANMAN 2011, 2008; ANTS 2011; HSN 2008, 2007; ICT 2008; NEW2AN 2008–2006; LCN 2005*
- present – 1996 **Other Conference and Workshop Organization**  
General Chair: *SIGCOMM 2018* (with Dr. Janos Tapolcai), *COMSNETS 2017* (with Dr. Niloy Ganguly and Dr. Ashutosh Sabharwal), and *WoWMoM 2013*  
Publication Chair: *SIGCOMM 2017, SIGCOMM 2010, and INFOCOM 2008* (with Dr. Aleksandar Kuzmanovic)  
Publicity Chair: *INFOCOM 2012* (with Dr. Lavy Libman and Dr. Yu Cheng) and *LANMAN 2011* (with Dr. Asis Nasipuri and Dr. Arata Koike)  
Best Paper Award Committee Member: *CoNEXT 2017, 2015; ICNP 2015, 2014*  
Poster Committee Member: *SIGCOMM 2004*  
Innovator Committee Member: *COMSNETS 2016*  
Student Mentor: *SIGCOMM 2016*  
Student Research Competition Judge: ACM Student Research Competition, *SIGCOMM 2016; Ph.D. Forum, SustainIT 2015*  
Panelist:  
(3) **”Net Neutrality: Is it Good, Bad, or Confusing for the Telecom Industry?”**, *COMSNETS 2016* (with Dr. Henning Schulzrinne, Dr. V. Sridhar, Dr. D. Manjunath, Sean Blagsvedt, and Anand Agarwal; moderator: Vijay Mann)  
(2) **”The Future of Information-Centric Networking”**, *ICNP 2013* (with Dr. K. K. Ramakrishnan, Dr. Dan Rubenstein, and Dr. Lixia Zhang; moderator: Dr. Ken Calvert)  
(1) **”Is Network Science Really a Science or Just a Buzzword?”**, *NetSciCom 2013* (with Dr. Nishanth Sastry and Dr. Thrasylvoulos Spyropoulos; moderator: Dr. Ram Ramanathan)  
Session Chair: *SIGCOMM 2016, 2012; CoNEXT 2015, 2014; INFOCOM 2014, 2012–2010, 2008–2006; ICNP 2016; Networking 2017, 2016, 2012; ISCC 2017; CloudCom 2016; COMSNETS 2012, 2011; e-Energy 2012; SustainIT 2015; NetSciCom 2014; NetEcon 2012; IWQoS 2012; E6 2012; RAIT 2012; NetSciCom 2011; ICCCN 2008, 2007; HSN 2008, 2007; ISCC 2005*  
Organizing Committee Assistant: *ICECCS 1996*
- present – 1996 **Reviewing**  
Research Funding Proposals: *European Commission* (Horizon 2020, FP7); *COST Association; EDGE MSCA COFUND Postdoctoral Fellowships; U.S. National Science Foundation; U.S. GENI Project Office* (Global Environment for Network Innovations); *Swiss National Science Foundation; Israel Science Foundation (ISF); National Research, Development, and Innovation Office of Hungary (NKFIH); Research Foundation Flanders (FWO); ETH Zurich Research Commission*

## PROFESSIONAL ACTIVITIES (continued)

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Ongoing Research Projects: *European Commission* (Horizon 2020); *Information Technology Research Academy, India* (ITRA-Mobile)

Journals: *IEEE/ACM Transactions on Networking, IEEE Journal on Selected Areas in Communications, ACM Transactions on Internet Technology, ACM Transactions on the Web, ACM Transactions on Modeling and Performance Evaluation of Computing Systems, IEEE Transactions on Communications, IEEE Transactions on Computers, IEEE Transactions on Parallel and Distributed Systems, IEEE Transactions on Multimedia, IEEE Transactions on Mobile Computing, IEEE Transactions on Network and Service Management, IEEE Transactions on Circuits and Systems for Video Technology, IEEE Transactions on Services Computing, IEEE Network, ACM Computer Communication Review, Wireless Networks, IEEE Communications Letters, Computer Networks, Journal of Internet Engineering, Journal of Computer and System Sciences, Simulation Modelling Practice and Theory, International Journal of Parallel Programming, Performance Evaluation, Theoretical Computer Science, ACM Computing Surveys, Journal of Scheduling*

Conferences and Workshops: *SIGCOMM, CoNEXT, INFOCOM, ICNP, ICDCS, Multimedia, COMSNETS, Networking, IC2E, ITC, AINTEC, NetEcon, W-PIN+NetEcon, PAM, NOSSDAV, IWQoS, Global Internet, DSN, ICC, HSN, ICCCN, GLOBECOM, NEW2AN, ANTS, ICT, LANMAN, RTAS, LCN, WIAPP, MMCN, ICECCS*

Books: *Addison Wesley, Prentice Hall, John Wiley & Sons*

present – 2004

### **Institutional Service**

Coordinator (with Dr. Jaime Garcia), *IMDEA-UC3M Research Seminar Series 2017–2010*, IMDEA Networks Institute

Committee member, *Undergraduate Council Study Group on Emerging Technologies and Teaching and Learning*, 2009–2006, Washington University in St. Louis

Judge, *Graduate Student Research Symposium 2004*, Washington University in St. Louis

2010 – 2008

### **Service on Professional Society Committees**

*Vice-Chairmanship, IEEE Communications Society (ComSoc) Technical Committee on High-Speed Networking (TCHSN)*

present – 1997

### **Membership in Professional Societies**

ACM and its SIGCOMM; IEEE and its Communications Society

present – 1995

### **Attendance of Conferences and Workshops**

*SIGCOMM 2016, 2015, 2013–2011, 2009–1999; CoNEXT 2015, 2014; INFOCOM 2014–2010, 2008–2005, 2002, 2001, 1997; ICNP 2016, 2013, 2007, 1998; COMSNETS 2017, 2016, 2013–2011; Networking 2017, 2016, 2014, 2012, 2010; ISCC 2017, 2005, 1998; CloudCom 2016; RIPE 73 (2016); Neutral Peering Days 2016; HotOS XV (2015); EPF10 (2015); MTA-BME Future Internet Research 2015; SustainIT 2015; NetSciCom 2014, 2013, 2011, 2010; CCSSES 2014; CNTCV 2014; CoNEXT Student Workshop 2014; Space Internetworking 2014; NPSec 2013; DEV 2013; WoWMoM 2013; 1st Internet Science Conference (2013); CSWS 2013; iGov2 2013; e-Energy 2012; E6 2012; NetEcon 2012; IWQoS 2012, 2007; RAIT 2012; WISARD 2012; IMDEA Networks Workshop 2016, 2015 (Big Data and Cloud Computing), 2012 (Data), 2011 (Internet Science), 2010 (Energy Efficiency and Networking); WIE 2011; W-MUST 2011; EaGL-SysNet 2011; 2021, 2020 Networking Summit (2011, 2010); R2S 2010; ICCCN 2008, 2007, 1997, 1996; HSN 2008–2006; ICNS 2008; CCW 2007; SIGMETRICS 2005; GLOBECOM 2005; ICSE 2005; ICAS/ICNS 2005; PERCOM 2005; NEW2AN 2004; PINS 2004; RTSS 2002, 1996; HotNets-I; NGC 2002; NOSSDAV 2001, 2000; RAPMS 1996; ICECCS 1996, 1995; RSP 1995*

## SELECTED TALKS

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- 2017/7/4      **“An Advertising Revenue Model for Access ISPs”**  
*ISCC 2017, Heraklion, Crete, Greece*
- 2017/6/14      **“Ads versus Regular Contents: Dissecting the Web Hosting Ecosystem”**  
*Networking 2017, Stockholm, Sweden*
- 2016/7/26      **“Transit, CDN, IXP, and Other Beasts of the Internet Ecosystem”** *(invited talk)*  
*Applied Research Center for Computer Networks (ARCCN), Moscow, Russia*
- 2016/6/9      **“Route Bazaar”** *(invited talk)*  
*IMDEA Networks Workshop 2016, IMDEA Networks Institute, Leganes, Madrid, Spain*
- 2016/1/8      **“Estimating the Real with the Virtual: How does the Accuracy Relate to the Internet Penetration?”**  
*COMSNETS 2016, Bangalore, India*
- 2015/9/22      **“Remote Peering: Findings and Questions”** *(with Dr. Ignacio Castro)*  
*European Peering Forum (EPF10), Madrid, Spain*
- 2015/9/2      **“Routes and Interconnectivity: An Internet Trend and an Architectural Proposal”** *(invited talk)*  
*Ericsson Hungary Research, Budapest, Hungary*
- 2015/8/13      **“Routes and Interconnectivity: An Internet Trend and an Architectural Proposal”** *(invited talk)*  
*University of Cambridge, Cambridge, United Kingdom*
- 2015/1/5      **“Remote Peering: More Peering without Internet Flattening”** *(invited talk)*  
*Budapest University of Technology and Economics (BME), Budapest, Hungary*
- 2014/12/1      **“Remote Peering: More Peering without Internet Flattening”** *(invited talk)*  
*NICTA, Sydney, Australia*
- 2014/6/10      **“Service Differentiation in the Internet for All”** *(invited talk)*  
*Space Internetworking 2014, Xanthi, Greece*
- 2014/6/3      **“Economics of Traffic Attraction by Transit Providers”**  
*Networking 2014, Trondheim, Norway*
- 2014/5/5      **“Innovations in Internet Interconnections”** *(invited talk)*  
*University of Toronto, Toronto, Canada*
- 2014/4/29      **“Trade-offs in Optimizing the Cache Deployments of CDNs”**  
*INFOCOM 2014, Toronto, Canada*
- 2014/2/28      **“The Internet as a Science, in Europe”** *(invited talk)*  
*National Research University of Electronic Technology (MIET), Moscow, Russia*
- 2013/10/7      **“Internet Traffic Management: Security vs. Economics”** *(keynote address)*  
*NPSec 2013, Göttingen, Germany*
- 2013/8/29      **“Innovations in Internet Interconnections”** *(invited talk)*  
*University of Oslo (UiO), Oslo, Norway*
- 2013/8/27      **“Innovations in Internet Interconnections”** *(invited talk)*  
*Simula Research Laboratory, Fornebu, Norway*
- 2012/9/7      **“T4P and CIPT: New Economic Models for Network Interconnection”** *(invited talk)*  
*Budapest University of Technology and Economics (BME), Budapest, Hungary*
- 2012/9/6      **“T4P and CIPT: New Economic Models for Network Interconnection”** *(invited talk)*  
*Eotvos Lorand University (ELTE), Budapest, Hungary*

SELECTED TALKS (continued)

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- 2012/6/4      **“AIST: Insights into Queuing and Loss on Highly Multiplexed Links”**  
*IWQoS 2012*, Coimbra, Portugal
- 2012/5/24      **“Obscure Giants: Detecting the Provider-Free ASes”**  
*Networking 2012*, Prague, Czech Republic
- 2012/3/15      **“On the Real Side of the Internet”** (*keynote address*)  
*RAIT 2012*, Dhanbad, Jharkhand, India
- 2012/3/15      **“Technologies and Economics of Internet Content Dissemination”** (*tutorial*)  
*RAIT 2012*, Dhanbad, Jharkhand, India
- 2011/12/2      **“CIPT: Using Tuangou to Reduce IP Transit Costs”** (*invited talk*)  
*WIE 2011*, La Jolla, California, USA
- 2011/9/9       **“Traffic Attraction through Prefix Deaggregation: An Economic Perspective”** (*invited talk*)  
*Basque Center for Applied Mathematics (BCAM)*, Bilbao, Spain
- 2011/9/6       **“Traffic Attraction through Prefix Deaggregation: An Economic Perspective”** (*invited talk*)  
*Eotvos Lorand University (ELTE)*, Budapest, Hungary
- 2011/1/19      **“Networking and Meaning of Life”** (*invited talk*)  
*2nd Workshop on Far-Out Research Ideas*, Institute IMDEA Networks, Leganes, Madrid, Spain
- 2010/11/19     **“Institute IMDEA Networks and its Research (Assistants)”** (*invited talk*)  
*Madrid Science Week*, Carlos III University of Madrid, Leganes, Madrid, Spain
- 2010/11/10     **“Technico-Economic Design of Network Protocols and Algorithms”** (*invited talk*)  
*IMDEA-AETIC-UC3M Technology Transfer Symposium*, Leganes, Madrid, Spain
- 2009/11/11     **“Research at IMDEA Networks: Activities and Opportunities”** (*invited talk*)  
*Madrid Science Week*, Carlos III University of Madrid, Leganes, Madrid, Spain
- 2009/3/19      **“Innovating the Multi-Provider Internet: RD Network Services and their Incremental Deployment Incentives”** (*interview talk*)  
*Pompeu Fabra University*, Barcelona, Spain
- 2009/3/17      **“Innovating the Multi-Provider Internet: RD Network Services and their Incremental Deployment Incentives”** (*interview talk*)  
*Institute IMDEA Networks*, Leganes, Madrid, Spain
- 2009/3/16      **“Innovating the Multi-Provider Internet: RD Network Services and their Incremental Deployment Incentives”** (*interview talk*)  
*Telefonica Research*, Barcelona, Spain
- 2008/12/18     **“Innovating the Multi-Provider Internet”** (*invited talk*)  
*University of Konstanz*, Konstanz, Germany
- 2008/11/21     **“Innovating the Multi-Provider Internet”** (*interview talk*)  
*Katholieke Universiteit Leuven (K.U.Leuven)*, Heverlee, Leuven, Belgium
- 2008/11/13     **“Innovating the Multi-Provider Internet: RD Network Services and their Incremental Deployment Incentives”** (*invited talk*)  
*Massachusetts Institute of Technology (MIT)*, Cambridge, Massachusetts, USA
- 2008/10/16     **“RD Network Services: Differentiation through Performance Incentives”** (*invited talk*)  
*Intel Research Berkeley*, Berkeley, California, USA
- 2008/10/10     **“RD Network Services: Differentiation through Performance Incentives”** (*invited talk*)  
*University of Texas at Austin*, Austin, Texas, USA

SELECTED TALKS (continued)

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- 2008/8/4      **“Addressing Heterogeneity, Scalability, and Privacy in Layered Multicast Congestion Control”**  
*ICCCN 2008*, St. Thomas, Virgin Islands, USA
- 2008/3/17      **“Effairness: Dealing with Time in Congestion Control Evaluation”**  
*ICNS 2008*, Gosier, Guadeloupe, France
- 2007/8/14      **“Fair Efficiency, or Low Average Delay without Starvation”**  
*ICCCN 2007*, Kahuku, Hawaii, USA
- 2007/5/11      **“A Network Architecture for Large-Scale Science”**  
*HSN 2007*, Anchorage, Alaska, USA
- 2007/2/5      **“Fair Efficiency, or Low Average Delay without Starvation”** (*invited talk*)  
*CCW 2007*, Pittsburgh, Pennsylvania, USA
- 2006/11/8      **“Bulk-Data Metanet: Virtualization by Example”** (*invited talk*)  
*NSF FIND kickoff meeting of Principal Investigators*, Chantilly, Virginia, USA
- 2006/4/24      **“Dedicated Channels as an Optimal Network Support for Effective Transfer of Massive Data”**  
*INFOCOM 2006*, Barcelona, Spain
- 2005/7/30      **“Washington University in St. Louis: Graduate Studies and Beyond”** (*invited talk*)  
*U.S. Education Advising Center*, Moscow, Russia
- 2005/6/29      **“Link Buffer Sizing: A New Look at the Old Problem”**  
*ISCC 2005*, La Manga del Mar Menor, Spain
- 2004/2/20      **“Robust Congestion Control for IP Multicast”** (*invited talk*)  
*University of North Carolina*, Chapel Hill, North Carolina, USA
- 2004/2/6      **“Feedback Modeling in Internet Congestion Control”**  
*NEW2AN 2004*, St. Petersburg, Russia
- 2003/8/26      **“Robustness to Inflated Subscription in Multicast Congestion Control”**  
*SIGCOMM 2003*, Karlsruhe, Germany
- 2003/8/6      **“Robust Congestion Control for IP Multicast”** (*Ph.D. defense*)  
*University of Texas at Austin*, Austin, Texas, USA
- 2003/4 – 2003/2      **“Robust Congestion Control for Multicast Communications”** (*interview talk*)  
*Eleven universities in the USA and Canada*
- 2002/10/24      **“Multicast Congestion Control with Distrusted Receivers”**  
*NGC 2002*, Boston, Massachusetts, USA
- 2001/11/8      **“Effairness: A Metric for Congestion Control Evaluation in Dynamic Networks”** (*invited talk*)  
*Stanford University*, Stanford, California, USA
- 2001/6/25      **“The Utility of Feedback in Layered Multicast Congestion Control”**  
*NOSSDAV 2001*, Port Jefferson, New York, USA
- 2000/11/20      **“Efficient and Scalable Multicast Congestion Control”** (*Ph.D. proposal*)  
*University of Texas at Austin*, Austin, Texas, USA
- 1997/9/23      **“Boosting the Network Performance via Traffic Reshaping”**  
*ICCCN 1997*, Las Vegas, Nevada, USA
- 1997/4/10      **“Exact and Efficient Analysis of Schedulability in Fixed-Packet Networks”**  
*INFOCOM 1997*, Kobe, Japan

## SELECTED TALKS (continued)

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- 1996/12/3      **“Traffic Reshaping in Packet-Switched Virtual-Circuit Fixed-Packet Network”**  
RAPMS 1996, Washington, DC, USA
- 1995/6/8      **“Development of a Real-Time Motion Image Encoder Using Codesign Methodology”**  
RSP 1995, Chapel Hill, North Carolina, USA

## TEACHING EXPERIENCE

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- 2009/5 – 2009/1      **“Protocols for Computer Networks”**, Washington University in St. Louis  
*Graduate networking course; experimental evaluation in the Open Network Laboratory (ONL); 4 (1 undergraduate and 3 graduate) students*
- 2008/12 – 2008/9      **“Introduction to Computer Networks”**, Washington University in St. Louis  
*Undergraduate senior-level networking course; broad coverage of Internet designs; experimental assignments in the Open Network Laboratory (ONL); 15 (11 undergraduate and 4 graduate) students; 1 teaching assistant*
- 2008/5 – 2008/1      **“Protocols for Computer Networks”**, Washington University in St. Louis  
*Graduate networking course; experimental evaluation in ONL; 12 (6 undergraduate and 6 graduate) students*
- 2007/12 – 2007/9      **“Introduction to Computer Networks”**, Washington University in St. Louis  
*Undergraduate senior-level networking course; broad coverage of Internet designs; assignments in ONL; 16 (11 undergraduate and 5 graduate) students; 1 teaching assistant*
- 2007/12 – 2004/9      **“Research Seminar on Networking”**, Washington University in St. Louis  
*Discussion of networking research publications*
- 2007/5 – 2007/1      **“Protocols for Computer Networks”**, Washington University in St. Louis  
*Graduate networking course; experimental evaluation in ONL; 21 (3 undergraduate and 18 graduate) students; 2 teaching assistants*
- 2006/12 – 2006/9      **“Introduction to Computer Networks”**, Washington University in St. Louis  
*Undergraduate senior-level networking course; broad coverage of Internet designs; assignments in ONL; 18 (7 undergraduate and 11 graduate) students; 2 teaching assistants*
- 2006/5 – 2006/1      **“Protocols for Computer Networks”**, Washington University in St. Louis  
*Graduate networking course; experimental evaluation in ONL; 19 (3 undergraduate and 16 graduate) students; 1 teaching assistant*
- 2005/5 – 2005/1      **“Protocols for Computer Networks”**, Washington University in St. Louis  
*Graduate networking course; experimental evaluation in PlanetLab; 20 (3 undergraduate and 17 graduate) students; 1 teaching assistant*
- 2004/12 – 2004/9      **“Introduction to Computer Networks”**, Washington University in St. Louis  
*Undergraduate senior-level networking course; broad coverage of Internet designs; 51 (32 undergraduate and 19 graduate) students; 4 teaching assistants*
- 2004/5 – 2004/1      **“Advanced Topics in Networking”**, Washington University in St. Louis  
*Graduate networking course; experimental evaluation in ns-2; 12 (6 undergraduate and 6 graduate) students*
- 2003/12 – 2003/9      **“Introduction to Computer Networks”**, Washington University in St. Louis  
*Undergraduate senior-level networking course; broad coverage of Internet designs; 52 (37 undergraduate and 15 graduate) students; 4 teaching assistants*

TEACHING EXPERIENCE (continued)

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- 2002/5 – 2002/1 **“Current Topics in Computer Science”**, University of Texas at Austin  
Supervisors: Dr. Lorenzo Alvisi, Dr. Michael Dahlin, and Dr. Bruce Porter  
*Graduate course in support of faculty hiring*
- 1998/5 – 1997/6 **“Introduction to Computer Science”**, University of Texas at Austin  
Supervisors: Dr. Bruce Porter and Dr. Roger Priebe  
*Undergraduate classroom and lab sessions covering new material*
- 1997/5 – 1995/9 **“Data Communications”** and **“Introduction to Computability and Complexity”**, NJIT  
Supervisors: Dr. Boris Verkhovsky and Dr. Alex Stoyenko  
*Undergraduate and graduate course material preparation and serving as a lecturer on call*