

# JATINDER PAL SINGH

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## INTERESTS

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I am broadly interested in networking, wireless communications, computer and embedded systems, and multimedia communications. I have had a great time bringing my systems experience and analytical skills together to solve problems, work with some very bright people, and lead and inspire research and development teams while working in a variety of settings including industrial R&D and academia.

## EXPERIENCE

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DEUTSCHE TELEKOM, INC., R&D LABORATORIES, Los Altos, CA Jan 2008 - present  
**Director of Research**

- Leading research and development personnel in the areas of Clean Slate Internet Design, Services and Mobile Platforms, and Multimedia Communications and Systems.
- Delineated R&D expansion plans for Deutsche Telekom (parent company of T-Mobile) in Silicon Valley; facilitated the founding of a new research and development laboratory; assumed responsibility of leading the lab and driving its evolution.
- Bolstered relationship between Deutsche Telekom and Stanford via research with Stanford faculty and contribution to industrial affiliate programs.

STANFORD UNIVERSITY, Stanford, CA Dec 2007 - present  
**Consulting Assistant Professor, Department of Electrical Engineering**

- Conducting and advising research in wireless networking and multimedia systems (publications J1, J2, C2, C3, C4, C5, C6, C7, C8, C9, C10, and demos D1, D2, D3).
- Mentoring and working with several doctoral candidates in Information Systems Laboratory (ISL). Associate dissertation advisor (Dimitrios Tsamis), and dissertation committee member (Aditya Mavlankar).
- Delivered guest lectures in Network Architecture and Performance Engineering (EE 384S, Spring 2008).
- Facilitated research funding for several graduate students in ISL by identifying areas of mutual research significance for Stanford and Deutsche Telekom.
- Facilitated funding of the Clean Slate Internet Design program and joining of Deutsche Telekom as the founding member of Clean Slate Lab.

DEUTSCHE TELEKOM LABORATORIES, Berlin, Germany Jan 2006 - Jan 2008  
**Senior Research Scientist**

- Led, conducted, and managed research and development on bandwidth aggregation and load balancing for residential WiFi routers.
- Jointly invented (patents P1, P2, P3, P4, and P8) and managed the development of the solution for secure and controlled sharing of broadband access connections for ISPs and mobile carriers on residential routers.
- Constituted key part of the core team and performed technical interfacing for development of business case and commercialization of the developed technology on broadband access sharing as a potential spin-off.
- Facilitated funding for, mentored, and conducted joint research (publication C16) with doctoral candidates at Stanford University and a graduate student at the Indian Institute of Technology, Kanpur.

TECHNICAL UNIVERSITY OF BERLIN, Germany Jan 2006 - Sept 2007  
**Post-doctoral Researcher**

- Jointly proposed, analyzed, and evaluated Markov Decision Process based control schemes for network selection and  $H^\infty$  based robust control policies for rate allocation in a scenario where multi-homed devices access networks with heterogeneous characteristics (publications C13, C14, C15, and patents P5, P6).
- Jointly evaluated the performance of high definition video sequences that use a media aware convex-optimization based optimal framework for streaming over heterogeneous access networks (C12).
- Jointly worked on architecture, algorithms and framework for load balancing, fast distributed authentication based on certificates, and traceability support for broadband access sharing for residential wireless routers (publications C11, C19, and patents P1, P2, P3, P4).
- Jointly proposed and evaluated a gossip-based P2P streaming framework and the dynamics of large scale real world video streaming session (publication J5, and patent P7).
- Co-instructed the course - Designing Future Networking System, summer 2006.

IBM TJ WATSON RESEARCH CENTER, Hawthorne, NY

Summer 2003

**Intern**

- Worked with systems analysis and optimization department on policies for resilient overlay multicast.
- Proposed and analyzed failure-resilient augmentations to overlay trees in directed tree topologies where nodes and links are prone to failures.
- Developed closed form approximations for assessing connectivity of augmented trees and worked with the team to perform simulations for large network topologies (C22).

ROBERT BOSCH CORPORATION, Palo Alto, CA

Summer 2002

**Mobile Networks Intern**

- Assessed the performance of an IEEE 802.11b based wireless LAN in different vehicular mobility, inter-vehicle distance, and vehicular traffic scenarios.
- Proposed a cross-layer ad-hoc routing framework and system architecture for topology adaptive routing in vehicular networks.
- Implemented the proposed framework in a linux based system, deployed it in a vehicular test-bed, and conducted tests to evaluate the performance by measuring throughput and responsiveness of routing to varying link conditions between vehicles (C18, C21, C24, C25).

INTEL CORPORATION, San Jose, CA

Fall 2001

**Intern**

- Proposed a multi-class scheduler algorithm for IEEE 802.11e Hybrid Coordination Function targeting QoS and fairness guarantees for high priority traffic classes at 802.11 stations.
- Delineated scheduler architecture for the IEEE TGe workgroup meeting (C26).

IBM INDIA RESEARCH LAB, New Delhi

Summer 1999

**Intern**

- Worked on efficient routing in mobile ad-hoc networks and performance appraisal of TCP over different routing protocols.
- Jointly proposed and simulated using ns-2, a route-lifetime-assessment based routing protocol, and demonstrated excellent adaptation of the protocol to increasing node mobility. (C27, C28, C29).

## EDUCATION

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STANFORD UNIVERSITY  
Ph.D. in Electrical Engineering  
Awarded Stanford Graduate Fellowship  
Advisor: Prof. Nicholas Bambos  
Thesis: High Performance Wireless Networking - Adaptation of the Networking Stack to Radio Conditions

Stanford, CA  
March 2002 – Sept 2005  
G.P.A.: 4.13/4.00

STANFORD UNIVERSITY  
M.S. in Electrical Engineering  
Awarded Stanford Graduate Fellowship

Stanford, CA  
Sept 2000 – March 2002  
G.P.A.: 3.86/4.00

INDIAN INSTITUTE OF TECHNOLOGY  
B.Tech. in Electrical Engineering  
Awarded A.K. Mahalanabis Memorial Scholarship  
Thesis: Protocols for Wireless ATM Networks

Delhi, India  
August 1996 – May 2000  
G.P.A.: 9.38/10, Ranked 1/60

## HONORS AND DISTINCTIONS

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- Best student paper award (co-author), ACM Multimedia 2007.
- Deutsche Telekom Fellowship, Stanford Networking Research Center, Stanford University, 2005.
- P. Michael Farmwald Stanford Graduate Fellowship, Stanford University, 2000-2004.
- Research with Deutsche Telekom on bringing Internet access to high-speed trains in Germany reported by Stanford News Service in Stanford Report, June 2, 2004, and televised by Deutsche Well.
- Institute Silver Medal, 2000 - ranked 1<sup>st</sup> in the dept of EE, Indian Institute of Technology, Delhi.
- Institute Merit Awards in 5 semesters for listing among top 7% students in undergraduate program, IIT Delhi.
- Financial Awards and Graduate Study Offers - Stanford University (Stanford Graduate Fellowship), MIT (Research Assistantship), Princeton University (Gordon Wu Fellowship), Berkeley (Research and Teaching Assistantship), University of Michigan (Fellowship), Purdue University (Fellowship).
- Sixth in Regional (4 states in India) Mathematics Olympiad 1994; selected for Indian National Mathematics Olympiad 1995.
- Joint Endowment Scholarship (1996-1998) for meritorious high school performance, Ministry of Human Resource Development, Government of India.
- Selected and Trained by Mathematics Talent Search and Nurture Program (summer 1996), National Board for Higher Mathematics, Center of Advanced Study in Mathematics, Panjab University, India.
- Invited to meet the Prime Minister of India (1995), Ministry of Human Resource Development, Government of India.

## JOURNAL PUBLICATIONS

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- J1. XIAOQING ZHU, PIYUSH AGRAWAL, JATINDER PAL SINGH, TANSU ALPCAN, AND BERND GIROD, “*Distributed Rate Allocation Policies for Multi-homed Video Streaming over Heterogeneous Access Networks*,” **IEEE Transactions on Multimedia** (in press).
- J2. JATINDER PAL SINGH, TANSU ALPCAN, PIYUSH AGRAWAL, AND VARUN SHARMA, “*A Markov Decision Process based Flow Assignment Framework for Heterogeneous Network Access*,” **Wireless Networks, Springer** (in press).

- J3. TANSU ALPCAN, JATINDER PAL SINGH, AND TAMER BASAR, “*Robust Rate Control for Heterogeneous Network Access in Multi-homed Environments,*” **IEEE Transactions on Mobile Computing**, vol. 8, no. 1, pp. 41-51, Jan. 2009.
- J4. JATINDER PAL SINGH, YAN LI, NICHOLAS BAMBOS, AHMAD BAHAI, BANGNAN ZHU, AND GERD ZIMMERMANN, “*TCP Performance Dynamics and Link-layer Adaptation based Optimization Methods for Wireless Networks,*” **IEEE Transactions on Wireless Communications**, vol. 6, no. 5, pp. 1864-1879, May 2007.
- J5. SACHIN AGARWAL, JATINDER PAL SINGH, AND SHRUTI DUBE, “*Analysis and Implementation of Gossip based P2P Streaming with Distributed Incentive Mechanisms for Peer Cooperation,*” **Journal on Advances in Multimedia**, vol. 2007, no. 2, 2007.
- J6. XIAOQING ZHU, JATINDER PAL SINGH, AND BERND GIROD, “*Joint Routing and Rate Allocation for Multiple Video Streams in Ad-hoc Wireless Networks,*” **Journal of Zhejiang University**, vol. 7, no. 5, pp. 727-736, May 2006 (also presented at the **Packet Video Workshop**, Apr. 2006).

## CONFERENCE PUBLICATIONS

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- C1. ASHISH KHISTI, AND JATINDER PAL SINGH, “*On Multicasting Using Streaming Burst Erasure Codes,*” accepted, International Symposium on Information Theory (**ISIT 2009**).
- C2. DAVID CHEN, SAM TSAI, VIJAY CHANDRASEKHAR, GABRIEL TAKACS, JATINDER PAL SINGH, AND BERND GIROD, “*Tree Histogram Coding for Mobile Image Matching,*” accepted, Proc. IEEE Data Compression Conference (**DCC 2009**).
- C3. DAVID CHEN, SAM TSAI, VIJAY CHANDRASEKHAR, GABRIEL TAKACS, JATINDER PAL SINGH, AND BERND GIROD, “*Robust Image Retrieval using Scalable Vocabulary Trees,*” accepted, Proc. Visual Communications and Image Processing (**VCIP 2009**).
- C4. VIJAY CHANDRASEKHAR, GABRIEL TAKACS, DAVID CHEN, JATINDER PAL SINGH, AND BERND GIROD, “*Transform Coding of Image Feature Descriptors,*” accepted, Proc. Visual Communications and Image Processing (**VCIP 2009**).
- C5. DIMITRIOS TSAMIS, TANSU ALPCAN, JATINDER PAL SINGH, AND NICHOLAS BAMBOS, “*Dynamic Resource Modeling for Heterogeneous Wireless Networks,*” accepted, Proc. IEEE International Conference on Communications (**ICC 2009**).
- C6. DAVID CHEN, VIJAY CHANDRASEKHAR, GABRIEL TAKACS, JATINDER PAL SINGH, AND BERND GIROD, “*Color restoration for objects of interest using robust image features,*” Proc. IEEE International Workshop on Multimedia Signal Processing (**MMSP 2008**), Oct 2008.
- C7. CARRI CHAN, JATINDER PAL SINGH, AND NICHOLAS BAMBOS, “*Wireless Network Assisted Computing,*” Proc. IEEE International Symposium on Personal, Indoor and Mobile Radio Communications (**PIMRC 2008**).
- C8. SACHIN AGARWAL, JATINDER PAL SINGH, ADITYA MAVLANKAR, PIERPAOLO BACCICHET, AND BERND GIROD, “*Performance and Quality of Service Analysis of a Live P2P Video Multicast Session on the Internet,*” Proc. IEEE International Conference on Multimedia and Expo (**IWQoS 2008**), pp. 11-19, Jun. 2008.
- C9. ADITYA MAVLANKAR, PIERPAOLO BACCICHET, BERND GIROD, SACHIN AGARWAL, AND JATINDER PAL SINGH, “*Video Quality Assessment and Comparative Evaluation of Peer-to-Peer Video Streaming Systems,*” Proc. IEEE International Conference on Multimedia and Expo (**ICME 2008**), pp. 645-648, 2008.
- C10. SACHIN AGARWAL, JATINDER PAL SINGH, ADITYA MAVLANKAR, PIERPAOLO BACCICHET, AND BERND GIROD, “*Performance of P2P Live Video Streaming Systems on a Controlled Test-bed,*” Proc. ICST/IEEE/ACM International Conference on Testbeds and Research Infrastructures for the Development of Networks and Communities (**TridentCom 2008**).
- C11. NATHANAEL THOMPSON, ZUONING YIN, HAIYUN LUO, PETROS ZERFOS, AND JATINDER PAL SINGH, “*Authentication on the Edge: Distributed Authentication for a Global Open Wi-Fi Networks,*” extended abstract and poster, Annual International Conference on Mobile Computing and Networking (**MobiCom 2007**), pp. 334-337, 2007.

- C12. XIAOQING ZHU, PIYUSH AGRAWAL, JATINDER PAL SINGH, TANSU ALPCAN, AND BERND GIROD, “Rate Allocation for Multi-User Video Streaming over Heterogeneous Access Networks,” Proc. **ACM Multimedia**, pp. 37-46, 2007 (**best student paper award**).
- C13. TANSU ALPCAN, JATINDER PAL SINGH, AND TAMER BASAR, “A Robust Flow Control Framework for Heterogeneous Network Access,” Proc. 5th International Symposium on Modeling and Optimization in Mobile, Ad Hoc, and Wireless Networks (**WiOpt 2007**), Apr. 2007.
- C14. JATINDER PAL SINGH, TANSU ALPCAN, PIYUSH AGRAWAL, AND VARUN SHARMA, “An Optimal Flow Assignment Framework for Heterogeneous Network Access,” Proc. IEEE Symposium on a World of Wireless, Mobile and Multimedia Networks (**WoWMoM 2007**), Jun. 2007 (**amongst top 15 of the accepted papers**).
- C15. JATINDER PAL SINGH, TANSU ALPCAN, XIAOQING ZHU, AND PIYUSH AGRAWAL, “Towards heterogeneous network convergence: policies and middleware architecture for efficient flow assignment, rate allocation and rate control for multimedia applications,” Workshop on Middleware for next-generation converged networks and applications (**MNCNA 2007**), ACM/IFIP/USENIX Middleware Conference 2007.
- C16. ADITYA DUA, NICHOLAS BAMBOS, AND JATINDER PAL SINGH, “Performance Tradeoffs in Mobile Computing: To Fetch or Not to Fetch,” Proc. 5th ACM International Workshop on Mobility Management and Wireless Access Protocols (**MobiWac 2007**), pp. 99-106, 2007.
- C17. XIAOQING ZHU, JATINDER PAL SINGH, AND BERND GIROD, “Joint Routing and Rate Allocation for Multiple Video Streams in Ad-hoc Wireless Networks,” **Packet Video Workshop**, Apr. 2006.
- C18. JATINDER PAL SINGH, NICHOLAS BAMBOS, BHASKAR SRINIVASAN, AND DETLEF CLAWIN, “Cross-Layer Multihop Wireless Routing for Inter-Vehicle Communication,” Proc. 2nd International IEEE/Create-Net Conference on Testbeds and Research Infrastructures for the Development of Networks and Communities (**TridentCom 2006**), 10 pp., Feb. 2006.
- C19. MARCIN SOLARSKI, PABLO VIDALES, OLIVER SCHNEIDER, PETROS ZERFOS, AND JATINDER PAL SINGH, “An Experimental Evaluation of Urban Networking using IEEE 802.11 Technology,” Proc. 1st IEEE International Workshop On Operator-Assisted (Wireless Mesh) Community Networks (**OpComm 2006**), Sept. 2006.
- C20. JATINDER PAL SINGH, YAN LI, AND NICHOLAS BAMBOS, “Channel State Awareness based Transmission Power Adaptation for Efficient TCP Dynamics in Wireless Networks,” Proc. IEEE International Communications Conference (**ICC 2005**), May 2005.
- C21. JATINDER PAL SINGH, NICHOLAS BAMBOS, BHASKAR SRINIVASAN, DETLEF CLAWIN, AND YONGCHUN YAN, “Empirical Observations on Wireless LAN Performance in Vehicular Traffic Scenarios and Link Connectivity Based Enhancements for Multihop Routing,” IEEE Wireless Communications and Networking Conference (**WCNC 2005**).
- C22. JEREMY SILBER, SAMBIT SAHU, JATINDER PAL SINGH, AND ZHEN LIU, “Augmenting Overlay Trees for Failure Resiliency,” IEEE Global Telecommunications Conference (**GLOBECOM 2004**), Dec. 2004.
- C23. JATINDER PAL SINGH, NICHOLAS BAMBOS, KLAUS RADERMACHER, AND VOLKMAR KATZ-SCHARF, “Power Control For TCP Adaptation to High-mobility Broadband Systems,” IEEE Vehicular Technology Conference (**VTC Fall-2004**), Sept. 2004.
- C24. JATINDER PAL SINGH, NICHOLAS BAMBOS, BHASKAR SRINIVASAN, DETLEF CLAWIN, AND YONGCHUN YAN, “Proposal and Demonstration of Link Connectivity based Applications to Routing in Mobile Ad-hoc Networks,” IEEE Vehicular Technology Conference (**VTC Fall-2003**), pp. 2834-2838, vol. 5, Sept. 2003.
- C25. JATINDER PAL SINGH, NICHOLAS BAMBOS, BHASKAR SRINIVASAN, AND DETLEF CLAWIN, “Wireless LAN Performance under Varied Stress Conditions in Vehicular Traffic Scenarios,” IEEE Vehicular Technology Conference (**VTC Fall-2002**), pp. 743-747, vol. 2, Sept. 2002.
- C26. JATINDER PAL SINGH AND DUNCAN KITCHIN, “Central Scheduling Algorithms for HCF: Proposals and Implementation,” doc: IEEE 802.11-01/616, presented under Task Group E, at IEEE workgroup meeting (**IEEE TGe**), Austin TX, Nov. 2001.
- C27. SULABH AGARWAL, ASHISH AHUJA, JATINDER PAL SINGH, AND RAJEEV SHOREY – “Route-lifetime Assessment Based Routing (RABR) Protocol for Mobile Ad-hoc Networks,” IEEE International Conference on Communications (**ICC 2000**), pp. 1697-1701, 2000.

- C28. SULABH AGARWAL ASHISH AHUJA, JATINDER PAL SINGH, AND RAJEEV SHOREY “*Performance of TCP over Different Routing Protocols in Mobile Ad-hoc Networks,*” IEEE Vehicular Technology Conference (VTC Fall-2000), pp. 2315-2319, Sept. 2000.
- C29. JATINDER PAL SINGH, SULABH AGARWAL, AND ASHISH AHUJA – “*Link Connectivity Assessment Based Applications for Mobile Ad-hoc Networks Networks,*” 42nd Annual Technical Convention of the Institution of Electronics and Telecommunication Engineers (IETE 2000), Sept. 2000.
- C30. JATINDER PAL SINGH, SACHIN ADLAKHA, SUBRAT KAR, AND SURENDRA PRASAD – “*Proposal, Simulation and Performance Appraisal of an Optimal Medium Access Protocol for Wireless ATM Networks,*” IEEE International Conference on Personal Wireless Communications (ICPWC 2000) , pp. 525-527, Dec. 2000.
- C31. JATINDER PAL SINGH, SACHIN ADLAKHA, SUBRAT KAR, AND SURENDRA PRASAD – “*Dynamic Resource Allocation with Network-initiated Bandwidth Renegotiation (DRABR) Protocol for Provising Seamless Handoffs in Wireless ATM Networks,*” IEEE International Conference on Personal Wireless Communications (ICPWC 2000), pp. 422-423, Dec. 2000.

## DEMOS

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- D1. SAM S. TSAI, DAVID CHEN, JATINDER PAL SINGH, AND BERND GIROD, “*Image-based Retrieval with a Camera-phone,*” IEEE International Conference on Acoustics, Speech and Signal Processing (ICASSP), Apr. 2009.
- D2. SAM S. TSAI, DAVID CHEN, JATINDER PAL SINGH, AND BERND GIROD, “*Rate-Efficient, Real-time CD Cover Recognition on a Camera Phone,*” ACM Multimedia, Oct. 2008.
- D3. XIAOQING ZHU, JATINDER PAL SINGH, AND BERND GIROD, “*Video Streaming over Wireless: Where TCP is not Enough,*” The Future of TCP: Train Wreck or Evolution, Stanford Clean Slate Internet, Apr. 1, 2008, Stanford, CA.

## PATENTS

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- P1. M SOLARSKI, P VIDALES, P ZERFOS, AND J P SINGH — Method and System to Trace the IP Traffic Back to the Sender or Receiver of User Data in Public Wireless Networks — European Patent Application EP 07 118 890.8, filed Oct. 19, 2007.
- P2. P VIDALES, M SOLARSKI, P ZERFOS, AND J P SINGH — System and Method for Embedding Content in Web Pages Distributed by a Wireless Access Point — European Patent Application EP 07 118 783.5, filed Oct. 18, 2007.
- P3. J P SINGH, P ZERFOS, P VIDALES, AND M SOLARSKI — Method and System for Load Balancing and QoS Provisioning in a Controlled Broadband Access Sharing System — European Patent Application EP 07 019 136.6, filed Sept. 28, 2007.
- P4. P ZERFOS, J P SINGH, P VIDALES, AND M SOLARSKI AND N THOMPSON AND H LAO — Method and System for Distributed, Localized Authentication in the framework of 802.11 — US Patent Application US 60/970.595, filed Sept. 7, 2007.
- P5. T ALPCAN AND J P SINGH — Method and Multi-homed Communication Device for Dynamic Transmission Rate Control — European Patent Application EP 07 007 596.5, filed Apr. 13, 2007.
- P6. J P SINGH AND T ALPCAN — Method and Communication System for Dynamical Traffic Flow Assignment to a Plurality of Access Networks — European Patent Application EP 07 006 381.3, filed Mar. 28, 2007.
- P7. S AGARWAL AND J P SINGH — Method and System for Peer-to-Peer Content Dissemination — European Patent Application EP 06 025 429.9, filed Dec. 8, 2006.
- P8. J P SINGH, P ZERFOS, P VIDALES AND M SOLARSKI — Method and IEEE 802.11e Capable Access Point for Centralized Scheduling of Traffic Streams in a WLAN — European Patent Application EP 06 022 169.4, filed Oct. 23, 2006.

- P9. J P SINGH — Method and Communication System for Channel State Awareness Based Transmission Power Adaptation for the optimization of TCP Throughput in a Wireless Network — European Patent Application EP 06 021 752.8, filed Oct. 17, 2006.
- P10. J P SINGH, B XU, AND G ZIMMERMANN — Method and Communication System for Optimizing the Throughput of a TCP Flow in a Wireless Network — US Patent Application US 11/494,822, filed July 28, 2006.
- P11. J P SINGH, N BAMBOS, AND V SCHARF-KATZ — Method and system to model TCP throughput, assess power control measures, and compensate for fading and path loss, for highly mobile broadband systems. — Patent numbers US2006063554, WO2006034242.

## SELECTED TALKS

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- “Resource Allocation in Next Generation Converged Networks,” EE 384S, Network Architectures and Performance Engineering, *Stanford University*, Stanford, CA, May 22 and May 27, 2008.
- “Cellular Networks - Architectural and Functional Overview, Evolving Trends, and Clean Slate Design Paradigms,” Clean Slate Internet Research Seminar, *Stanford University*, Stanford, CA, Oct. 16, 2007.
- “Secure and Controlled Broadband Access Sharing and Heterogeneous Network Access for Applications with Elastic Utilities,”
  - *IBM T.J. Watson Research Center*, Hawthorne, NY, Aug. 7, 2007
  - *DoCoMo Communication Laboratories*, Palo Alto, CA, Nov. 11 2005
- “Heterogeneous Network Access and Wireless/Wireline Convergence,” Broadband Wireless Access Workshop, *Deutsche Telekom Laboratories*, Berlin, Germany, Dec. 8, 2006.
- “Extended HotSpots - Spin-off Deutsche Telekom Laboratories,” Spin-off Committee Meeting, *Deutsche Telekom headquarters*, Bonn, Germany, Oct. 25, 2006.
- “Cross-layer Multi-hop Wireless Routing for Inter-vehicle Communication,” 2<sup>nd</sup> *International IEEE/Create-Net Conference on Testbeds and Research Infrastructures for the Development of Networks and Communities (Trident-Com)*, Barcelona, Spain, Feb. 2006.
- “Ubiquitous Wireless Access via Operational Adaptability of the Networking Stack to Radio Conditions,”
  - *Deutsche Telekom laboratories*, Berlin, Germany, Jan. 2005
  - *Atheros Communications*, CA, Apr. 2005
  - *Intel Labs*, OR, Apr. 2005
  - *Stanford University*, Stanford, CA, May 27, 2005
  - *Sprint Labs*, Burlingame, CA, Aug. 2, 2005
  - *Motorola Labs*, Chicago, IL, Oct. 28, 2005

## SERVICES AND MEMBERSHIPS

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- Served as a reviewer for forums including IEEE Journal on Selected Areas in Communications, IEEE Transactions on Parallel and Distributed Systems, IEEE Transactions on Wireless Communications, Wireless Networks (Springer), IEEE Transactions on Vehicular Technology, Celtic Telecommunication Solutions.
- TPC, ACM Multimedia 2009, ICST/IEEE/ACM International Conference on Testbeds and Research Infrastructures for the Development of Networks and Communities (TRIDENTCOM 2008), International Workshop on Next Generation Networking Middleware (NGNM 2008), International Conference on Mobile Computing, Applications, and Services (MobiCASE 2009).

- Publicity Chair, International Conference on Mobile Wireless Middleware, Operating Systems, and Applications (Mobilware 2009).
- Industry track chair, International Conference on Mobile Computing, Applications, and Services (MobiCASE 2009).
- Professional member, IEEE, ACM.
- Member and Volunteer, National Service Scheme, India (1996-2000).

#### OTHER INTERESTS

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I write fiction, engage in meditation and spiritual reading, play a bit of golf and tennis, and regularly work out.

#### US IMMIGRATION STATUS

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Permanent Resident.

#### REFERENCES

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Dr. Nicholas Bambos  
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Dr. Petros Zerfos  
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