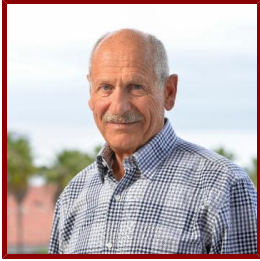


# Stanford

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## Fouad Tobagi

Professor of Electrical Engineering

### Bio

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#### BIO

Tobagi works on network control mechanisms for handling multimedia traffic (voice, video and TCP- based applications) and on the performance assessment of networked multimedia applications using user-perceived quality measures. He also investigates the design of wireless networks, including QoS-based media access control and network resource management, as well as network architectures and infrastructures for the support of mobile users, all meeting the requirements of multimedia traffic. He also investigates the design of metropolitan and wide area networks combining optical and electronic networking technologies, including topological design, capacity provisioning, and adaptive routing.

#### ACADEMIC APPOINTMENTS

- Professor, Electrical Engineering

#### PROFESSIONAL EDUCATION

- PhD, UCLA (1974)

### Teaching

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#### COURSES

##### 2017-18

- Internet Routing Protocols and Standards: EE 384A (Win)
- Introduction to Computer Networks: EE 284 (Aut)
- Wireless Local and Wide Area Networks: EE 384C (Spr)

##### 2016-17

- Internet Routing Protocols and Standards: EE 384A (Win)
- Introduction to Computer Networks: EE 284 (Aut)
- Multimedia Communication over the Internet: EE 384B (Spr)

##### 2015-16

- Internet Routing Protocols and Standards: EE 384A (Win)
- Introduction to Computer Networks: EE 284 (Aut)
- Wireless Local and Wide Area Networks: EE 384C (Spr)

##### 2014-15

- Internet Routing Protocols and Standards: EE 384A (Win)

- Introduction to Computer Networks: EE 284 (Aut)
- Multimedia Communication over the Internet: EE 384B (Spr)

## STANFORD ADVISEES

### Master's Program Advisor

Noah Gamboa

## Publications

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### PUBLICATIONS

- **Cross-tier Interference Mitigation for Two-tier OFDMA Femtocell Networks with Limited Macrocell Information** *IEEE Global Telecommunications Conference (GLOBECOM 2010)*  
Kim, M., Je, H. W., Tobagi, F. A.  
IEEE.2010
- **Optical network design to minimize switching and transceiver equipment costs** *8th International Workshop on Optical Networking Technologies*  
Chen, B. K., Tobagi, F. A.  
ELSEVIER SCIENCE INC.2009: 171–80
- **Band-distributed Channel-aware Fractional Frequency Reuse in OFDMA Systems** *70th IEEE Vehicular Technology Conference*  
Kim, M., Jeong, M. R., Watanabe, F., Tobagi, F.  
IEEE.2009: 1021–1025
- **Physical topology design for all-optical networks** *OPTICAL SWITCHING AND NETWORKING*  
Liu, H., Tobagi, F. A.  
2008; 5 (4): 219-231
- **Cooperative and Non-cooperative Aloha Games with Channel Capture** *IEEE Global Telecommunications Conference (GLOBECOM 08)*  
Cho, Y., Tobagi, F. A.  
IEEE.2008
- **On Improving Throughput and Fairness in Wireless Mesh Networks: A Listen-and-Learn Approach** in *Wireless Mesh Networking – With 802.16, 802.11, and Zigbee*  
Medepalli, K., Tobagi, F., A.  
edited by Aggelou, G.  
McGraw Hill.2008: 307–315
- **Design of robust random access protocols for wireless networks using game theoretic models** *27th IEEE Conference on Computer Communications (INFOCOM 2008)*  
Cho, Y., Hwang, C., Tobagi, F. A.  
IEEE.2008: 2423–2431
- **Interactions between the physical layer and upper layers in wireless networks** *AD HOC NETWORKS*  
Tobagi, F. A., Vyas, A. K., Ha, S., Awoniyi, O.  
2007; 5 (8): 1208-1219
- **Traffic grooming in WDM SONET rings with multiple line speeds** *IEEE JOURNAL ON SELECTED AREAS IN COMMUNICATIONS*  
Liu, H., Tobagi, F. A.  
2007; 25 (4): 68-81
- **Multimedia data transmission over wireless network with interference** *IEICE TRANSACTIONS ON COMMUNICATIONS*  
Murayama, S., Tobagi, F. A.  
2007; E90B (3): 651-659
- **Adaptive throughput optimization for MIMO systems in Rayleigh fading channels** *IEEE International Conference on Communications (ICC 2007)*  
Cho, Y., Kim, M., Tobagi, F. A.  
IEEE.2007: 2574–2579

- **Throughput analysis of a path in an IEEE 802.11 Multihop Wireless Network** *IEEE Wireless Communications and Networking Conference*  
Hira, M. M., Tobagi, F. A., Medepalli, K.  
IEEE.2007: 441–446
- **Network topology design to optimize link and switching costs** *IEEE International Conference on Communications (ICC 2007)*  
Chen, B. K., Tobagi, F. A.  
IEEE.2007: 2450–2456
- **Loss and delay measurements of Internet backbones** *COMPUTER COMMUNICATIONS*  
Markopoulou, A., Tobagi, F., Karam, M.  
2006; 29 (10): 1590-1604
- **Impact of interference on the throughput of a multihop path in a wireless network** *3rd International Conference on Broadband Communications Networks and Systems*  
Vyas, A. K., Tobagi, F. A.  
IEEE.2006: 405–414
- **Interactions Between the Physical Layer and Upper Layers in Wireless Networks, and their Impact on Applications**  
Tobagi, Fouad, A., Vyas, Amit, K., Ha, S., Awoniyi, O.  
2006
- **Towards performance modeling of IEEE 802.11 based wireless networks: A unified framework and its applications** *IEEE INFOCOM 2006 Conference/25th IEEE International Conference on Computer Communications*  
Medepalli, K., Tobagi, F. A.  
IEEE.2006: 1584–1595
- **On Optimization of CSMA/CA based Wireless LANs: Part II - Mitigating Efficiency Loss** *IEEE International Conference on Communications (ICC 2006)*  
Medepalli, K., Tobagi, F. A., Famolari, D., Kodama, T.  
IEEE.2006: 4799–4804
- **Packet error rate in OFDM-based wireless LANs operating in frequency selective channels** *IEEE INFOCOM 2006 Conference/25th IEEE International Conference on Computer Communications*  
Awoniyi, O., Tobagi, F. A.  
IEEE.2006: 2682–2694
- **Characterization of an IEEE 802.11a Receiver using Measurements in an Indoor Environment** *IEEE Global Telecommunications Conference (GLOBECOM 06)*  
Vyas, A. K., Tobagi, F. A., Narayanan, R.  
IEEE.2006
- **Physical topology design for all-optical networks** *3rd International Conference on Broadband Communications Networks and Systems*  
Liu, H., Tobagi, F. A.  
IEEE.2006: 492–501
- **Spanning Tree Backbone in Multihop Wireless Networks** *IEEE Global Telecommunications Conference (GLOBECOM 06)*  
Hira, M. M., Tobagi, F. A.  
IEEE.2006
- **Optical network design to minimize switching and transceiver equipment costs** *3rd International Conference on Broadband Communications Networks and Systems*  
Chen, B. K., Tobagi, F. A.  
IEEE.2006: 435–444
- **On Optimization of CSMA/CA based Wireless LANs: Part I - Impact of Exponential Backoff** *IEEE International Conference on Communications (ICC 2006)*  
Medepalli, K., Tobagi, F. A.  
IEEE.2006: 2089–2094
- **Power-law tradeoffs between optical and electronic switching** *IEEE INFOCOM 2006 Conference/25th IEEE International Conference on Computer Communications*  
Liu, H., Chen, B. K., Tobagi, F. A.

IEEE.2006: 266–278

- **Throughput analysis of IEEE 802.11 wireless LANs using an average cycle time approach** *IEEE Global Telecommunications Conference (GLOBECOM 05)*  
Medepalli, K., Tobagi, F. A.  
IEEE.2005: 3007–3011
- **Traffic Grooming in WDM SONET BLSR Rings with Multiple Line Speeds**  
Liu, H., Tobagi, Fouad, A.  
2005
- **Performance Improvement of Data and Voice over WLANs Using Adaptive Power Loading**  
Awoniyi, O., Oteri, O., Tobagi, F., A.  
2005
- **Video-Conferencing and Data Traffic over an IEEE 802.11g WLAN using DCF and EDCA**  
Hole, David, P., Tobagi, F., A.  
2005
- **A Top Down View of Quality of Service** *ST Journal of Research, Special Issue on Networked Multimedia*  
Tobagi, F., A.  
2005; 2 (1)
- **Adaptive power loading in OFDM-based WLANs and the resulting performance improvement in voice and data applications** *62nd IEEE Vehicular Technology Conference*  
Awoniyi, O., Oteri, O., Tobagi, F. A.  
IEEE.2005: 789–794
- **System Centric and User Centric Queueing Models for IEEE 802.11 based Wireless LANs** *2nd International Conference on Broadband Networks (BroadNets 05)*  
Medepalli, K., Tobagi, F. A.  
IEEE.2005: 656–665
- **Deo-conferencing and data traffic over an IEEE 802.11g WLAN using DCF and EDCA** *IEEE International Conference on Communications (ICC 2005)*  
Shimakawa, M., Hole, D. P., Tobagi, F. A.  
IEEE.2005: 1324–1330
- **Traffic grooming in WDM SONET UPSR rings with multiple line speeds** *24th Annual Joint Conference of the IEEE Computer and Communications Societies*  
Liu, H., Tobagi, F. A.  
IEEE COMPUTER SOC.2005: 718–729
- **Traffic grooming in WDM/SONET BLSR rings with multiple line speeds** *IEEE Global Telecommunications Conference (GLOBECOM 05)*  
Liu, H., Tobagi, F. A.  
IEEE.2005: 2096–2101
- **Assessment and optimization of schemes for tracking and routing to mobile users in packet-based networks** *COMPUTER NETWORKS-THE INTERNATIONAL JOURNAL OF COMPUTER AND TELECOMMUNICATIONS NETWORKING*  
Seibert, C. H., Tobagi, F. A.  
2004; 44 (1): 103-133
- **Effect of fading on the performance of VoIP in IEEE 802.11a WLANs** *IEEE International Conference on Communications (ICC 2004)*  
Awoniyi, O., Tobagi, F. A.  
IEEE.2004: 3712–3717
- **Voice over IP: The challenges behind the vision** *38th Asilomar Conference on Signals, Systems and Computers*  
Tobagi, F. A.  
IEEE.2004: 410–414
- **A novel efficient technique for traffic grooming in WDM SONET with multiple line speeds** *IEEE International Conference on Communications (ICC 2004)*  
Liu, H., Tobagi, F.  
IEEE.2004: 1694–1698

- **Capacity of an IEEE 802.11b wireless LAN supporting VoIP** *IEEE International Conference on Communications (ICC 2004)*  
Hole, D. P., Tobagi, F. A.  
IEEE.2004: 196–201
- **Hierarchical reliable multicast: Performance analysis and optimal placement of proxies** *COMPUTER COMMUNICATIONS*  
Guha, S., Markopoulou, A., Tobagi, F.  
2003; 26 (18): 2070-2081
- **Assessing the quality of voice communications over Internet backbones** *IEEE-ACM TRANSACTIONS ON NETWORKING*  
Markopoulou, A. P., Tobagi, F. A., Karam, M. J.  
2003; 11 (5): 747-760
- **Modeling and dimensioning hierarchical storage systems for low-delay video services** *IEEE TRANSACTIONS ON COMPUTERS*  
Chan, S. H., Tobagi, F. A.  
2003; 52 (7): 907-919
- **Provisioning IP backbone networks to support latency sensitive traffic** *22nd Annual Joint Conference of the IEEE Computer and Communications Societies*  
Fraleigh, C., Tobagi, F., Diot, C.  
IEEE.2003: 375–385
- **Optimizing mobility support in large switched LANs** *IEEE International Conference on Communications (ICC)*  
Hristea, C., Tobagi, F.  
IEEE.2003: 537–541
- **Analysis of delay and delay jitter of voice traffic in the Internet** *COMPUTER NETWORKS-THE INTERNATIONAL JOURNAL OF COMPUTER AND TELECOMMUNICATIONS NETWORKING*  
Karam, M. J., Tobagi, F. A.  
2002; 40 (6): 711-726
- **Improving the performance of interactive TCP applications using service differentiation** *COMPUTER NETWORKS*  
Noureddine, W., Tobagi, F.  
2002; 40 (1): 19-43
- **A network infrastructure for IP mobility support in metropolitan areas** *COMPUTER NETWORKS*  
Hristea, C., Tobagi, F.  
2002; 38 (2): 181-206
- **Improving the performance of interactive TCP applications using service differentiation** *21st Annual Joint Conference of the IEEE-Computer-and-Communications-Societies*  
Noureddine, W., Tobagi, F.  
IEEE.2002: 31–40
- **Is the Internet Ready for VoIP?**  
Tobagi, F., A., Markopoulou, A., P., Karam, M., J.  
2002
- **Analysis of measured single-hop delay from an operational backbone network** *21st Annual Joint Conference of the IEEE-Computer-and-Communications-Societies*  
Papagiannaki, K., Moon, S., Fraleigh, C., Thiran, P., Tobagi, F., Diot, C.  
IEEE.2002: 535–544
- **Assessment of VoIP quality over Internet backbones** *21st Annual Joint Conference of the IEEE-Computer-and-Communications-Societies*  
Markopoulou, A. P., Tobagi, F. A., Karam, M. J.  
IEEE.2002: 150–159
- **Tradeoff between system profit and user delay/loss in providing near video-on-demand service** *IEEE TRANSACTIONS ON CIRCUITS AND SYSTEMS FOR VIDEO TECHNOLOGY*  
Chan, S. H., Tobagi, F.  
2001; 11 (8): 916-927

- **Distributed servers architecture for networked video services** *IEEE-ACM TRANSACTIONS ON NETWORKING*  
Chan, S. H., Tobagi, F.  
2001; 9 (2): 125-136
- **Service Differentiation in the Internet for the Support of Multimedia Traffic** *In Springer Verlag LNCS*  
Tobagi, F., A., Noureddine, W., Chen, B., Markopoulou, A., Fraleigh, C., Karam, M.  
2001; 210
- **Design and Deployment of a Passive Monitoring Infrastructure**  
Fraleigh, Charles, J., Diot, C., Moon, S., Owezarski, P., Papagiannaki, D., Tobagi, Fouad, A.  
2001
- **IP Routing and Mobility**  
Hristea, C., Tobagi, F., A.  
2001
- **Service Differentiation in the Internet for the Support of Multimedia Traffic**  
Tobagi, F., A., Noureddine, W., Chen, B., Markopoulou, A., Fraleigh, C., Karam, M.  
2001
- **Analysis of the Delay and Jitter of Voice Traffic Over the Internet**  
Karam, M., J., Tobagi, F., A.  
2001
- **On traffic types and service classes in the Internet** *IEEE Global Telecommunications Conference (GLOBECOM 00)*  
Karam, M. J., Tobagi, F. A.  
IEEE.2000: 548–554
- **Performance Analysis of Hierarchical Reliable Multicast for placement of proxies**  
Markopoulou, A., Tobagi, F., A.  
2000
- **Rate and queue controlled random drop (RQRD): A buffer management scheme for Internet routers** *IEEE Global Telecommunications Conference (GLOBECOM 00)*  
Karam, M. J., Tobagi, F. A.  
IEEE.2000: 316–322
- **Perceived quality and bandwidth characterization of layered MPEG-2 video encoding** *Conference on Multimedia Systems and Applications II*  
Kimura, J., Tobagi, F. A., Pulido, J. M., EMSTAD, P. J.  
SPIE-INT SOCIETY OPTICAL ENGINEERING.1999: 308–319
- **Multicasting and Local Caching for Video Delivery in Distributed Servers Architecture**  
Chan, S., H., Tobagi, F., A.  
1999
- **Threshold-Based Admission Policies for Video Services**  
Chan, S., H., Tobagi, F., A.  
1999
- **On Maximizing Profit in Providing Near Video-On-Demand Services**  
Chan, S., H., Tobagi, F., A.  
1999
- **Caching Schemes in Distributed Servers Architecture for Video Services**  
Chan, S., H., Tobagi, F., A.  
1999
- **Delay of voice traffic over the Internet** *Conference on Multimedia Systems and Applications II*  
Karam, M. J., Tobagi, F. A.  
SPIE-INT SOCIETY OPTICAL ENGINEERING.1999: 94–105

- **Selective back-pressure in switched Ethernet LANs** *IEEE Global Communications Conference (GLOBECOM 99)*  
Noureddine, W., Tobagi, F.  
IEEE.1999: 1256–1263
- **Bandwidth planning in near video-on-demand** *IEEE International Symposium on Circuits and Systems (ISCAS 98)*  
Chan, S. H., Tobagi, F., Ko, T. M.  
IEEE.1998: C61–C64
- **Analysis of Timers used in Bridged LANs' Selective Multicast Registration Protocol**  
Tobagi, Fouad, A., Karam, Mansour, J., Fernandez, P. M.  
1998
- **Providing on-demand video services using request batching** *IEEE International Conference on Communications*  
Chan, S. H., Tobagi, F., Ko, T. M.  
IEEE.1998: 1716–1722
- **Performance evaluation of ATM networks carrying constant and variable bit-rate video traffic** *IEEE JOURNAL ON SELECTED AREAS IN COMMUNICATIONS*  
Dalgic, I., Tobagi, F. A.  
1997; 15 (6): 1115-1131
- **Performance evaluation of 10Base-T and 100Base-T Ethernets carrying multimedia traffic** *IEEE JOURNAL ON SELECTED AREAS IN COMMUNICATIONS*  
Tobagi, F. A., Dalgic, I.  
1996; 14 (7): 1436-1454
- **Cost-based scheduling and dropping algorithms to support integrated services** *IEEE TRANSACTIONS ON COMMUNICATIONS*  
Peha, J. M., Tobagi, F. A.  
1996; 44 (2): 192-202
- **On the performance of networks carrying multimedia traffic** *2nd International Workshop on Architecture and Protocols for High Performance Networks*  
Tobagi, F. A., Dalgic, I.  
KLUWER ACADEMIC PUBLISHERS.1996: 61–101
- **Study of MPEG-2 Coding Performance based on a Perceptual Quality Metric**  
Basso, A., Dalgic, I., Tobagi, F., A., Lambrecht, C., J.B.  
1996
- **Glitches as a Measure of Video Quality Degradation Caused by Packet Loss**  
Dalgic, I., Tobagi, F., A.  
1996
- **A Constant Quality MPEG-1 Video Encoding Scheme and its Traffic Characterization**  
Dalgic, I., Tobagi, F., A.  
1996
- **Routing of Multicast Audio/Video Streams in Reconfigurable WDM Optical Networks** *Journal of Network and Systems Management, Special issue on Routing in Broadband Networks*  
Noronha, C., A., Tobagi, F., A.  
1996; 4 (2): 155-179
- **Hierarchical storage systems for on-demand video servers** *Conference on High-Density Data Recording and Retrieval Technologies*  
Chan, S. H., Tobagi, F. A.  
SPIE - INT SOC OPTICAL ENGINEERING.1996: 103–120
- **A feedback control scheme for low latency constant quality MPEG-2 video encoding** *EUROPTO Conference on Digital Compression Technologies and Systems for Video Communications*  
Basso, A., Dalgic, I., Tobagi, F. A., Lambrecht, C. J.  
SPIE - INT SOC OPTICAL ENGINEERING.1996: 460–471

- **DISTANCE LEARNING WITH DIGITAL VIDEO** *IEEE MULTIMEDIA*  
Tobagi, F. A.  
1995; 2 (1): 90-93
- **Constant quality video encoding** *1995 IEEE International Conference on Communications - Communications: Gateway to Globalization*  
Dalgic, I., Tobagi, F. A.  
IEEE.1995: 1255-1261
- **Hierarchical Storage Systems for On-Demand Video Servers**  
Chan, S., H., Tobagi, F., A.  
1995
- **Quality Video Encoding**  
Dalgic, I., Tobagi, F., A.  
1995
- **Routing of Multimedia Streams in Reconfigurable WDM Optical Networks** *Journal of High-Speed Networks, Special Issue: WDM Networks, Part 2*  
Noronha, C., A., Tobagi, F., A.  
1995; 4 (2): 133-153
- **ANALYZING THE FAULT-TOLERANCE OF DOUBLE-LOOP NETWORKS** *IEEE-ACM TRANSACTIONS ON NETWORKING*  
Peha, J. M., Tobagi, F. A.  
1994; 2 (4): 363-373
- **GENERALIZED ACCESS-CONTROL STRATEGIES FOR INTEGRATED SERVICES TOKEN PASSING SYSTEMS** *IEEE TRANSACTIONS ON COMMUNICATIONS*  
PANG, J. W., Tobagi, F. A., Boyd, S.  
1994; 42 (8): 2561-2570
- **OPTIMUM ROUTING OF MULTICAST STREAMS** *Conference on Computer Communications - Networking for Global Communications (IEEE INFOCOM 94)*  
NORONHA, C. A., Tobagi, F. A.  
IEEE, COMPUTER SOC PRESS.1994: 865-873
- **Evaluation of Multicast Routing Algorithms for Multimedia Streams**  
Noronha, C., Tobagi, F., A.  
1994
- **EVALUATION OF 10BASE-T AND 100BASE-T ETHERNETS CARRYING VIDEO, AUDIO AND DATA TRAFFIC** *Conference on Computer Communications - Networking for Global Communications (IEEE INFOCOM 94)*  
Dalgic, I., Chien, W., Tobagi, F. A.  
IEEE, COMPUTER SOC PRESS.1994: 1094-1102
- **THE CHRISTMAS-TREE SWITCH - AN OUTPUT QUEUING SPACE-DIVISION FAST PACKET SWITCH BASED ON INTERLEAVING DISTRIBUTION AND CONCENTRATION FUNCTIONS** *COMPUTER NETWORKS AND ISDN SYSTEMS*  
Wang, W. J., Tobagi, F. A.  
1993; 25 (6): 631-644
- **The Evolution of Campus Networks Towards Multimedia**  
Noronha, C., A., Tobagi, F., A.  
1993
- **Starworks-A Video Applications Server**  
Tobagi, F., A., Pang, J.  
1993
- **Streaming RAID-A Disk Array Management System for Video Files**  
Tobagi, F., A., Pang, J., Baird, R.  
1993



- **Multimedia: The Challenge Behind the Vision** *Data Communications*  
Tobagi, F., A.  
1993
- **TOLERANCE OF DOUBLE-LOOP COMPUTER-NETWORKS TO MULTINODE FAILURES - COMMENTS** *IEEE TRANSACTIONS ON COMPUTERS*  
Peha, J. M., Tobagi, F. A.  
1992; 41 (11): 1488-1490
- **Client-Server Challenges for Digital Video**  
Tobagi, F., A., Long, J., E.  
1992
- **A Hybrid Shared-Memory/Space-Division Architecture for Large Fast Packet Switches**  
Chiussi, F., M., Tobagi, F., A.  
1992
- **Fast Bandwidth Reservation Scheme with Multi-Link and Multi-Path Routing in ATM Networks**  
Suzuki, H., Tobagi, F., A.  
1992
- **LARGE-SCALE ATM SWITCHING SYSTEMS FOR B-ISDN** *IEEE JOURNAL ON SELECTED AREAS IN COMMUNICATIONS*  
Stephens, W. E., DEPRYCKER, M., Tobagi, F. A., Yamaguchi, T.  
1991; 9 (8): 1157-1160
- **ARCHITECTURE, PERFORMANCE, AND IMPLEMENTATION OF THE TANDEM BANYAN FAST PACKET SWITCH** *IEEE JOURNAL ON SELECTED AREAS IN COMMUNICATIONS*  
Tobagi, F. A., Kwok, T., Chiussi, F. M.  
1991; 9 (8): 1173-1193
- **The Tandem Banyan Switching Fabric: A Simple High-Performance Fast Packet Switch**  
Tobagi, F., A., Kwok, T.  
1991
- **A 0.8-um BiCMOS Sea-Of-Gates Implementation of the Tandem Banyan Fast Packet Switch**  
Chiussi, F., M., Amano, H., Tobagi, F., A.  
1991
- **The Christmas-Tree: An Output-Queueing Space-Division Switching Fabric Based on Interleaving Distribution and Concentration Functions**  
Wang, W., Tobagi, F., A.  
1991
- **FAST PACKET SWITCH ARCHITECTURES FOR BROAD-BAND INTEGRATED SERVICES DIGITAL NETWORKS** *PROCEEDINGS OF THE IEEE*  
Tobagi, F. A.  
1990; 78 (1): 133-167
- **Packet Switch Architectures and the Tandem Banyan Switching Fabric**  
Tobagi, F., A., Kwok, T.  
1990
- **THROUGHPUT PERFORMANCE OF AN UNSLOTTED DIRECT-SEQUENCE SSMA PACKET RADIO NETWORK** *IEEE TRANSACTIONS ON COMMUNICATIONS*  
Storey, J. S., Tobagi, F. A.  
1989; 37 (8): 814-823
- **THROUGHPUT ANALYSIS OF A TIMER CONTROLLED TOKEN PASSING PROTOCOL UNDER HEAVY LOAD** *IEEE TRANSACTIONS ON COMMUNICATIONS*  
PANG, J. W., Tobagi, F. A.  
1989; 37 (7): 694-702

- **Throughput Analysis Of a Timer-Controlled Token-Passing Protocol Under Heavy Load** *IEEE Transactions on Communications*  
Pang, J., W. M., Tobagi, F., A.  
1989; 37 (7): 694-702
- **Telecommunications: The Nervous System of a Modern Society** *in Technology Shapes The Future*  
Tobagi, F., A.  
edited by Meindl, J.  
Stanford: Portable Stanford.1989: 1
- **Generalized Access Control Strategies for Token Passing Systems**  
Pang, J., Tobagi, F., A.  
1989
- **ON THE PERFORMANCE EFFECTS OF STATION LOCATIONS AND ACCESS PROTOCOL PARAMETERS IN ETHERNET NETWORKS** *IEEE TRANSACTIONS ON COMMUNICATIONS*  
Gonsalves, T. A., Tobagi, F. A.  
1988; 36 (4): 441-449
- **Supernodes in Spread-Spectrum Packet-Radio Networks Employing Code-Division Multiple Access** *Computer Networks and ISDN Systems*  
Birk, Y., Tobagi, F., A.  
1988; 15 (5): 341-357
- **Throughput Analysis of a Timer-Controlled Token-Passing Protocol under Heavy Load**  
Pang, J., Tobagi, F., A.  
1988
- **Bus-Oriented Interconnection Topologies for Single-Hop Communication among Multi-Transceiver Stations**  
Birk, Y., Tobagi, F., A., Marhic, M., E.  
1988
- **ON DISTRIBUTED COMPUTATIONS WITH LIMITED RESOURCES** *IEEE TRANSACTIONS ON COMPUTERS*  
KANAKIA, H. R., Tobagi, F. A.  
1987; 36 (5): 517-528
- **ISSUES IN PACKET RADIO NETWORK DESIGN** *PROCEEDINGS OF THE IEEE*  
LEINER, B. M., Nielson, D. L., Tobagi, F. A.  
1987; 75 (1): 6-20
- **Performance of the Expressnet with Voice Data Traffic**  
Gonsalves, T., A., Tobagi, F., A.  
1987
- **Transmission Scheduling Policies and their Implementation in Integrated-Services High-Speed Local Area Networks**  
Nassehi, M., M., Tobagi, F., A.  
1987
- **Advances in Local Area Networks**  
edited by Limb, J., O., Kummerle, K., Tobagi, F., A.  
New York: IEEE Press.1987
- **Theoretical Results on Distributed Processing with Limited Computing Resources** *IEEE Transactions on Computers*  
Kanakia, H., Tobagi, F., A.  
1987; C-36 (5): 517-528
- **SPECIAL ISSUE ON PACKET RADIO NETWORKS** *PROCEEDINGS OF THE IEEE*  
LEINER, B. M., Nielson, D. L., Tobagi, F. A.  
1987; 75 (1): 3-5
- **MODELING AND PERFORMANCE ANALYSIS OF MULTIHOP PACKET RADIO NETWORKS** *PROCEEDINGS OF THE IEEE*  
Tobagi, F. A.

- 
- 1987; 75 (1): 135-155
- **PACKET VOICE ON A LOCAL AREA NETWORK WITH ROUND-ROBIN SERVICE** *IEEE TRANSACTIONS ON COMMUNICATIONS*  
Fine, M., Tobagi, F. A.  
1986; 34 (9): 906-915
  - **PERFORMANCE EVALUATION OF CHANNEL ACCESS SCHEMES IN MULTIHOP PACKET RADIO NETWORKS WITH REGULAR STRUCTURE BY SIMULATION** *COMPUTER NETWORKS AND ISDN SYSTEMS*  
Tobagi, F. A., Shur, D. H.  
1986; 12 (1): 39-60
  - **Code-Assignment Policies for Multi-Receiver Nodes in CDMA Packet Radio Networks**  
Birk, Y., Tobagi, F., A.  
1986
  - **Performance Measurements of a Data Link Protocol**  
Kanakia, H., Tobagi, F., A.  
1986
  - **Integrating Voice and Data on Expressnet**  
Tobagi, F., A.  
1986
  - **Experimentation with a Fiber Optic Implementation of Expressnet**  
Marhic, M., E., Tobagi, F., A.  
1986
  - **Protocols and Real-Time Communications in Local Area Networks**  
Tobagi, F., A.  
1986
  - **SELECTIVE BROADCAST INTERCONNECTION - A NOVEL SCHEME FOR FIBER-OPTIC LOCAL-AREA NETWORKS** *OPTICS LETTERS*  
Marhic, M. E., BIRK, Y., Tobagi, F. A.  
1985; 10 (12): 629-631
  - **Supernodes in Packet Radio Networks Employing Code Division Multiple Access**  
Birk, Y., Tobagi, F., A.  
1985
  - **Fiber Optic Configurations for Local Area Networks**  
Tobagi, F., A., Nassehi, M., M., Marhic, M., E.  
1985
  - **Throughput Analysis of Spread Spectrum Multihop Packet Radio Networks**  
Brazio, J., M., Tobagi, F., A.  
1985
  - **Selective Broadcast Interconnection for Wideband Fiber Optic Local Area Networks**  
Birk, Y., Marhic, M., E., Tobagi, F., A.  
1985
  - **Theoretical Results on Distributed Processing with Limited Computing Resources**  
Tobagi, F., A., Kanakia, H.  
1985
  - **Computer Communications Networks** *in Reference Data for Radio Engineers: Radio, Electronics, Computer, and Communications*  
Tobagi, F., A.  
edited by Jordan, E.  
Indianapolis: Howard W. Sams. 1985; 7th: 26-1-26-32

- **FIBER OPTIC CONFIGURATIONS FOR LOCAL AREA NETWORKS** *IEEE JOURNAL ON SELECTED AREAS IN COMMUNICATIONS*  
NASSEHI, M. M., Tobagi, F. A., Marhic, M. E.  
1985; 3 (6): 941-949
- **DEMAND ASSIGNMENT MULTIPLE ACCESS SCHEMES IN BROADCAST BUS LOCAL AREA NETWORKS** *IEEE TRANSACTIONS ON COMPUTERS*  
Fine, M., Tobagi, F. A.  
1984; 33 (12): 1130-1159
- **Improvements in Throughput of a CDMA Packet Radio Network due to a Channel Load Sense Access Protocol**  
Tobagi, F., A., Storey, J., S.  
1984
- **Scheduling-Delay Multiple Access Schemes for Broadcast Local Area Networks**  
Fine, M., Tobagi, F., A.  
1984
- **Theoretical Results in Throughput Analysis of Multihop Packet Radio Networks**  
Brazio, J., M., Tobagi, F., A.  
1984
- **PACKET RADIO AND SATELLITE NETWORKS** *IEEE COMMUNICATIONS MAGAZINE*  
Tobagi, F. A., Binder, R., Leiner, B.  
1984; 22 (11): 24-?
- **EXPRESS-NET: A High-Performance Integrated-Services Local Area Network** *IEEE Journal on Selected Areas in Communications, Special Issue on Local Area Networks*  
Tobagi, F., A., Borgonovo, F., Fratta, L.  
1983; SAC-1 (5): 898-913
- **Performance of Unidirectional Broadcast Local Area Networks: Express-Net and Fasnet** *IEEE Journal on Selected Areas in Communications, Special Issue on Local Area Networks*  
Tobagi, F., A., Fine, M.  
1983; SAC-1 (5): 913-926
- **Foreword: Introduction and Overview** *IEEE Journal on Selected Areas in Communications, Special Issue on Local Area Networks*  
Kummerle, K., Stuck, B., W., Tobagi, F., A.  
1983; SAC-1 (5): 697-701
- **Throughput Analysis of Multihop Packet Radio Networks Under Various Channel Access Schemes**  
Tobagi, F., A., Brazio, J.  
1983
- **ON THE DESIGN AND PERFORMANCE EVALUATION OF PACKET RADIO SYSTEMS** *JOURNAL OF TELECOMMUNICATION NETWORKS*  
Tobagi, F. A.  
1982; 1 (1): 79-80
- **Performance Analysis of a Conflict-Free Round-Robin Scheme in a Unidirectional Broadcast System**  
Fine, M., Tobagi, F., A.  
1982
- **Multiaccess Link Control** *in Computer Network Architectures and Protocols*  
Tobagi, F., A.  
edited by Green Jr, Paul, E.  
New York: Plenum Press.1982: 145-189
- **Performance of Gateway-to-Gateway and End-to-End Flow Control Procedures in Internet Environments**  
Nassehi, M., Tobagi, F., A.  
1982

- **On CSMA-CD Local Networks and Voice Communication**  
Tobagi, F., A., Gonzalez-Cawley, N.  
1982
- **CSMA-CD LOCAL NETWORKS AND VOICE COMMUNICATION**  
Tobagi, F. A., GONZALEZCAWLEY, N.  
ELSEVIER SCIENCE BV.1982: 366-66
- **DISTRIBUTIONS OF PACKET DELAY AND INTER-DEPARTURE TIME IN SLOTTED ALOHA AND CARRIER SENSE MULTIPLE ACCESS** *JOURNAL OF THE ACM*  
Tobagi, F. A.  
1982; 29 (4): 907-927
- **CARRIER SENSE MULTIPLE ACCESS WITH MESSAGE-BASED PRIORITY FUNCTIONS** *IEEE TRANSACTIONS ON COMMUNICATIONS*  
Tobagi, F. A.  
1982; 30 (1): 185-200
- **MESSAGE-BASED PRIORITY FUNCTIONS IN LOCAL MULTIACCESS COMMUNICATION-SYSTEMS** *COMPUTER NETWORKS AND ISDN SYSTEMS*  
ROM, R., Tobagi, F. A.  
1981; 5 (4): 273-286
- **The EXPRESS-NET: A Local Area Communication Network Integrating Voice and Data**  
Fratta, L., Borgonovo, F., Tobagi, F., A.  
1981
- **MULTIACCESS PROTOCOLS IN PACKET COMMUNICATIONS-SYSTEMS - REPLY** *IEEE TRANSACTIONS ON COMMUNICATIONS*  
Tobagi, F. A.  
1981; 29 (6): 920-920
- **ANALYSIS OF A 2-HOP CENTRALIZED PACKET RADIO NETWORK .1. SLOTTED ALOHA** *IEEE TRANSACTIONS ON COMMUNICATIONS*  
Tobagi, F. A.  
1980; 28 (2): 196-207
- **Performance Analysis of Carrier Sense Multiple Access With Message-Based Priority Functions**  
Tobagi, F., A.  
1980
- **Message-Based Priority Functions in Multiaccess / Broadcast Communication Systems With a Carrier Sense Capability**  
Tobagi, F., A.  
1980
- **Efficient Round-Robin and Priority Schemes for Unidirectional Broadcast Systems**  
Tobagi, F., A., Rom, R.  
1980
- **ANALYSIS OF A 2-HOP CENTRALIZED PACKET RADIO NETWORK .2. CARRIER SENSE MULTIPLE ACCESS** *IEEE TRANSACTIONS ON COMMUNICATIONS*  
Tobagi, F. A.  
1980; 28 (2): 208-216
- **MULTI-ACCESS PROTOCOLS IN PACKET COMMUNICATION-SYSTEMS** *IEEE TRANSACTIONS ON COMMUNICATIONS*  
Tobagi, F. A.  
1980; 28 (4): 468-488
- **PERFORMANCE ANALYSIS OF CARRIER SENSE MULTIPLE ACCESS WITH COLLISION DETECTION** *COMPUTER NETWORKS AND ISDN SYSTEMS*  
Tobagi, F. A., HUNT, V. B.  
1980; 4 (5): 245-259

- **Performance Analysis of Carrier Sense Multiple Access With Collision Detection**  
Tobagi, F., A., Hunt, V., B.  
1979
- **MODELING AND MEASUREMENT TECHNIQUES IN PACKET COMMUNICATION NETWORKS** *PROCEEDINGS OF THE IEEE*  
Tobagi, F. A., Gerla, M., Peebles, R. W., Manning, E. G.  
1978; 66 (11): 1423-1447
- **Analysis of Slotted ALOHA in a Centralized Two-Hop Packet Radio Network**  
Tobagi, F., A.  
1978
- **The Effect of Acknowledgement Traffic on the Capacity of Packet-Switched Radio Channels** *IEEE Transactions on Communications*  
Tobagi, F., A., Kleinrock, L.  
1978; COM-26: 815-826
- **Performance Analysis of Packet Radio Communication Systems**  
Tobagi, F., A.  
1977
- **Packet Switching in Radio Channels: Part IV-Stability Considerations and Dynamic Control in Carrier Sense Multiple Access** *IEEE Transactions on Communications*  
Tobagi, F., A., Kleinrock, L.  
1977; COM-25: 1103-1119
- **Packet Switching in Radio Channels: Part III-Polling and (Dynamic) Split-Channel Reservation Multiple Access** *IEEE Transactions on Communications*  
Tobagi, F., A., Kleinrock, L.  
1976; COM-24: 832-844
- **On the Analysis and Simulation of Buffered Packet Radio Systems**  
Tobagi, F., A., Kleinrock, L.  
1976
- **On the Measurement Facilities in Packet Radio Systems**  
Tobagi, F., A., Lieberson, S., Kleinrock, L.  
1976
- **Random Access Techniques for Data Transmission Over Packet-Switched Radio Channels**  
Kleinrock, L., Tobagi, F., A.  
1975
- **Packet Switching in Radio Channels: Part II-The Hidden Terminal Problem in Carrier Sense Multiple Access and the Busy Tone Solution** *IEEE Transactions on Communications*  
Tobagi, F., A., Kleinrock, L.  
1975; COM-23: 1417-1433
- **Packet Switching in Radio Channels: Part I-Carrier Sense Multiple Access Modes and Their Throughput Delay Characteristics** *IEEE Transactions on Communications*  
Kleinrock, L., Tobagi, F., A.  
1975; COM-23: 1400-1416
- **Carrier Sense Multiple Access for Packet Switched Radio Channels**  
Kleinrock, L., Tobagi, F., A.  
1974