Stanford



Fouad Tobagi

Professor of Electrical Engineering

Bio

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

COURSES

2026-27

- Internet Switching and Routing Protocols: EE 384A (Win)
- Introduction to Computer Networks: EE 284 (Aut)

2024-25

- Internet Switching and Routing Protocols: EE 384A (Win)
- Introduction to Computer Networks: EE 284 (Aut)
- Introduction to Internet of Things: EE 284A (Spr)

2023-24

- From the Internet for People to the Internet of Things: EE 84N (Win)
- Introduction to Computer Networks: EE 284 (Aut)
- Introduction to Internet of Things: EE 284A (Spr)

STANFORD ADVISEES

Doctoral Dissertation Reader (AC)

Jasmin Falconer

Master's Program Advisor

Annie Peng, Yongjiang Wu, Nika Zahedi

Publications

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.
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- **Physical topology design for all-optical networks** *OPTICAL SWITCHING AND NETWORKING*
  Liu, H., Tobagi, F. A.
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- **Cooperative and Non-cooperative Aloha Games with Channel Capture** *IEEE Global Telecommunications Conference (GLOBECOM 08)*
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- **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*
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- **Design of robust random access protocols for wireless networks using game theoretic models** *27th IEEE Conference on Computer Communications (INFOCOM 2008)*
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- **Interactions between the physical layer and upper layers in wireless networks** *AD HOC NETWORKS*
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- **Multimedia data transmission over wireless network with interference** *IEICE TRANSACTIONS ON COMMUNICATIONS*
  Murayama, S., Tobagi, F. A.
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- **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.
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- **Loss and delay measurements of Internet backbones** *COMPUTER COMMUNICATIONS*
  Markopoulou, A., Tobagi, F., Karam, M.
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- **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.
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- **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*
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- **On Optimization of CSMA/CA based Wireless LANs: Part II - Mitigating Efficiency Loss** *IEEE International Conference on Communications (ICC 2006)*
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  Awoniyi, O., Tobagi, F. A.
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- **Characterization of an IEEE 802.11a Receiver using Measurements in an Indoor Environment** *IEEE Global Telecommunications Conference (GLOBECOM 06)*
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- **Physical topology design for all-optical networks** *3rd International Conference on Broadband Communications Networks and Systems*
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- **Spanning Tree Backbone in Multihop Wireless Networks** *IEEE Global Telecommunications Conference (GLOBECOM 06)*
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- **Optical network design to minimize switching and transceiver equipment costs** *3rd International Conference on Broadband Communications Networks and Systems*
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- **On Optimization of CSMA/CA based Wireless LANs: Part I - Impact of Exponential Backoff** *IEEE International Conference on Communications (ICC 2006)*
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