

Yong Pei

Assistant Professor
Computer Science and Engineering Department
Wright State University
Dayton, OH 45435-0001
Tel: (937) 775-5111 Fax: (937) 775-5133
ypei@cs.wright.edu

EDUCATION:

B.S. (Electrical Power Engineering), Tsinghua University, Beijing, China, 1996
M.S. (Electrical Engineering), Rensselaer Polytechnic Institute, Troy, New York, 1999
Ph.D. (Electrical Engineering), Rensselaer Polytechnic Institute, Troy, New York, 2002

PROFESSIONAL CAREER:

08/2003 – Date: Assistant Professor, Computer Science and Engineering Department,
Wright State University, Dayton, Ohio
10/2003 – Date: Director, Mobile Information and Communication Systems Lab,
Wright State University, Dayton, Ohio
08/2002 – 06/2003: Visiting Assistant Professor, Electrical and Computer Engineering Department,
University of Miami, Coral Gables, Florida
04/2002 – 08/2002: Post-Doctoral Research Associate, Electrical, Computer and System Engineering
Department, Rensselaer Polytechnic Institute, Troy, New York
01/1998 – 04/2002: Research Assistant, Center for Image Processing Research, Rensselaer Polytechnic
Institute, Troy, New York
09/1996 – 10/1997: Research Assistant, Institute of Electronics, Chinese Academy of Sciences, Beijing,
China
08/1994 – 07/1996: Research Assistant, Electrical Power Engineering Group, Tsinghua University,
Beijing, China

RESEARCH INTEREST

Multimedia Networking
Wireless Communication Systems and Networks
Network-Enabled Virtual Environment for Tele-Collaboration
Ultra-High-Speed (100Mbps-100Gbps) Wireless “Last-Mile” Distribution Networks
Multi-Hop Free Space Optics Last-Mile Networks
Image and Signal Processing for Communications and Biomedical systems
Information Theory and Coding
Molecular Signaling & Complex Systems Research

PROFESSIONAL ACTIVITIES AND AFFILIATIONS

- TPC Member, International Conference on Image Processing (ICIP 2004), Singapore, Oct. 2004;

- TPC Member, International Workshop on Broadband Wireless Services and Applications (BroadWISE), San José, CA, USA, Oct. 2004;
- TPC Member for VTC 2003, Symposium on Adaptation of wireless systems and related parameters estimation.
- TPC Member for VTC 2003, Symposium on Channel estimation and tracking for wireless communication systems.
- TPC Member for VTC 2003, Symposium on Interference cancellation for wireless mobile radio systems.
- Proposal Reviewer, NSF ITR Program, 2003 – Date.
- Paper Reviewer, IEEE Journal for Selected Areas in Communications, 2000 – Date.
- Paper Reviewer, IEEE Trans. on Multimedia, 2004 – Date.
- Paper Reviewer, IEEE Multimedia Magazine, 2003 – Date.
- Paper Reviewer, Globecom, VTC, ISCAS, ICC, ICIP, WiOpt.
- Member, IEEE, IEEE Computer Society, IEEE Signal Processing Society, IEEE Communications Society and IEEE Information Theory Society, 1999 to Present.
- Professional Member, ACM, 2002 to Present
- NSF Engineering Research Center (NSF-ERC) CenSSIS, The Center for Subsurface Sensing and Imaging Systems, 1999 to 2002.
- NSF Industry/University Co-Operative Research Center for Next Generation Video, 2000 to 2002.
- NSF Industry/University Co-Operative Research Center for Digital Image and Video Processing, 1998 to 2000.
- Center for Image Processing Research, RPI, 1998 to 2002.
- “863 High-Tech Plan” Research Group for Air-Borne Remote Sensing Data Processing and Information Extraction, Chinese Academy of Sciences, China, 1996-1997.
- National Key Lab for Power System Security and Automation Research, Beijing, China, 1994 to 1996.

RECENT PRESENTATIONS

- “A Cross Layer Design for Real-Time Wireless Multimedia Networking”, *CS Dept., University of Miami*, Feb.10, 2003.
- “A Cross Layer Design for Real-Time Wireless Multimedia Networking”, *CSE Dept., Wright State University*, Dec. 06, 2002.
- “A Cross Layer Design for Real-Time Wireless Multimedia Networking”, *Information Systems Laboratory, Stanford University*, June 03, 2002.
- “Robust Video Coding and Transmission Over Wireless Networks”, *ECSE, RPI*, Apr, 2002.
- “Convergence of Multimedia, Wireless and Internet”, *ECE, WPI*, March, 2002.

- “Digital Video Transmission Over Wireless Fading Channels Using an Adaptive Multi-Resolution Modulation and Coding Scheme”, *NSF Center for Next Generation Video*, Troy, NY, Dec. 2001.
- “Digital Video Transmission Over Wireless Fading Channels Using an Adaptive Multi-Resolution Modulation and Coding Scheme”, *NSF-ERC CenSSIS*, Boston, MA, May 2001.

PUBLICATIONS

(Names of co-authors appearing in bold typeface indicate current or former **supervised students**.)

2004

- **Q. Qu**, Y. Pei and J. W. Modestino, “A Motion-Based Adaptive Unequal Error Protection Approach For Real-Time Video Transport over Wireless IP Networks”, Under revision, *IEEE Trans. on Image Processing*, June 2004.
- Y. Pei, **V. S. Ambetkar**, J.W. Modestino, **Q. Qu** and **X. Wang**, “Enabling Real-Time H.264 Video Services over Wireless Ad Hoc Networks Using Joint Admission and Transmission Power Control”, To appear in *Telecommunication Systems Journal, Special Issue on "Multimedia Streaming over Next Generation Telecommunication Networks"*, Dec., 2004.
- **Qi Qu**, Yong Pei, Xusheng Tian and James W. Modestino, "Robust Source-Adaptive Real-Time Video Streaming over Wireless Multi-hop Networks", To appear in the *International Journal of Wireless and Mobile Computing (IJWMC), Special Issue on " Media streaming over Wireless and Mobile networks"*, 2004.
- Y. Pei and J.W. Modestino, “Interactive Video Coding and Transmission Over Heterogeneous Wired-to-Wireless IP Networks Using An Edge Proxy”, *EURASIP Journal on Applied Signal Processing, Special Issue on "Multimedia over IP and Wireless Networks"*, vol.2, pp. 253-264, Feb., 2004.
- **Qi Qu**, Yong Pei, X.S. Tian and James W. Modestino, "Network-Aware Source-Adaptive Video Coding for Wireless Applications", To appear in *MILCOM 2004*.
- **Q. Qu**, Y. Pei, J. W. Modestino and X. Tian, “Error-Resilient Video Transmission over Wireless Networks using Unequal Error Protection and Packet Interleaving”, To appear in *International Conference on Image Processing (ICIP2004)*, Oct. 2004.
- **Qi Qu**, Yong Pei, X.S. Tian and James W. Modestino, "Motion-based FEC Coding for Wireless Video Transport over Bursty 3G UMTS Networks: A Cross-layer Approach", To appear in *60th IEEE Vehicular Technology Conference (VTC2004-Fall)*, Sep. 2004.

- **Q. Qu**, Y. Pei, J. W. Modestino and X. Tian, " VIDEO TRANSPORT OVER WIRELESS IP NETWORKS: A CROSS-LAYER APPROACH ", in Proceeding of *The 2004 International Conference on Internet Computing (IC'04)*, Las Vegas, Nevada, USA, June 21-24, 2004.
- Y.S. Chan, Y. Pei, **Q. Qu** and J. W. Modestino, "On Cross-layer Adaptivity and Optimization for Multimedia CDMA Mobile Wireless Networks", in Proceeding of *The First IEEE-EURASIP International Symposium on Control, Communications, and Signal Processing*, March 2004.

2003

- Su Yi, Y. Pei and S. Kalyanaraman, "On the capacity of ad hoc wireless networks using directional antennas", in Proceeding of *ACM International Symposium on Mobile Ad Hoc Networking and Computing (MobiHoc2003)*, pp. 108-116, 2003.
- Y. Pei, J.W. Modestino and **Q. Qu**, "Support of Packet Video over Ad Hoc Wireless Networks", in Proceeding of *The 37th Asilomar Conference on Signals, Systems, and Computers*, pp.1694-1697, Nov. 2003.
- Y. Pei, J.W. Modestino and **X.Wang**, "On the Capacity of Hybrid Wireless Networks Using an L-maximum-hop routing strategy", in Proceeding of *IEEE 58th Vehicular Technology Conference (VTC-2003/Fall)*, pp. 2173 – 2176, Oct, 2003.
- **Q. Qu**, Y. Pei and J.W. Modestino," Robust H.26L video Coding and Transmission over Bursty Packet Loss Wireless Networks", in Proceeding of *IEEE 58th Vehicular Technology Conference (VTC-2003/Fall)*, pp. 3395 – 3399, Oct, 2003.
- Y. Pei and J.W. Modestino, "Robust Packet Video Transmission Over Heterogeneous Wired-to-Wireless IP Networks Using Concatenated FEC Coding", Proc. of *9th International Conference on Distributed Multimedia Systems (DMS'2003)*, pp. 72-77, Miami, FL, October 2003.
- Y. Pei , J.W. Modestino, **Q. Qu** and **X.Wang**, "Enabling Real-Time H.26L Video Services over Wireless Ad Hoc Networks Using Power Control", in Proceeding of *SPIE Visual Communications and Image Processing (VCIP'03)*, pp. 1741-1751, 2003.
- Y. Pei and J.W. Modestino, "Interactive Video Coding and Transmission Over Wired-to-Wireless Networks Using Edge Proxy", in Proceeding of *IEEE International Conference on Multimedia and Expo (ICME'03)*, pp. 437-440, 2003.
- Y. Pei and J.W. Modestino, "Use of Concatenated FEC Coding for Real-Time Packet Video Over Heterogeneous Wired-to-Wireless IP Networks", in Proceeding of *International Symposium on Circuits and Systems (ISCAS '03)*, vol. 2, pp.840-843, 2003.

- Y. Pei and J.W. Modestino, “Interactive Video Coding and Transmission Over Wired-to-Wireless Networks Using Edge Proxy”, in Proceeding of *IEEE International Conference on Acoustics, Speech, and Signal Processing (ICASSP '03)*, vol.4, pp. 281-284, 2003.

2002 and Before

- Y. Pei and J.W. Modestino, “H.263+ Packet Video Over Wireless IP Networks Using Rate-Compatible Punctured Turbo (RCPT) Codes with Joint Source-Channel Coding”, in Proceeding of *International Conference on Image Processing (ICIP'02)*, vol. 1, pp.541-544, 2002.
- Y. Pei and J.W. Modestino, “Robust Video Transmission Over Heterogeneous Wired-to-Wireless Networks Using ALF Together with Edge Proxies”, in Proceeding of *the European Wireless 2002 (EW2002)*, Florence, Italy, Feb. 2002
- Y. Pei and J.W. Modestino, “Multi-layered Video Transmission over Wireless Channels using an Adaptive Modulation and Coding Scheme”, in Proceeding of *International Conference on Image Processing (ICIP'01)*, vol. 2. pp.1009-1012, Thessaloniki, Greece, Oct. 2001.
- Y. Pei and J.W. Modestino, “A Joint Source-Channel Coding Approach for Packet Video Transport over Wireless IP Networks”, in Proceeding of *the 11th International Packet Video Workshop (PV2001)*, pp. 41-50, Kyongju, Korea, Apr. 2001.
- M. Bystrom, J.W. Modestino and Y. Pei, "Combined Source-Channel Coding for Wireless Transmission of H.263 Coded Video", in Proceeding of *UCSD Conference on Wireless Communications*, pp. 36-49, San Diego, CA, Feb. 1999.

THESIS AND DISSERTATION ADVISING

Graduate Student:

Viraj Ambetkar, CSE Dept. at Wright State University, Sep. 2003 – Date
 Peng Xie, CSE Dept. at Wright State University, Jan. 2004 – Jul. 2004
 Qingnan Yao, CSE Dept. at Wright State University, Jul. 2004 – Date
 Qi Qu, ECE Dept. at Univ. of Miami, Sep. 2002- Jul. 2004 (Graduated with M.S.)
 Xunqi Yu, ECE Dept. at Univ. of Miami, Sep. 2002-June 2003.
 Xiaochun Wang, ECE Dept. at Univ. of Miami, Sep. 2002-June 2003.

Undergraduate Student:

Jordan King, CSE Dept. at Wright State University, Apr. 2004 – Date

THESIS COMMITTEE SERVED

Jeremy Gwinnup, M.S., Wright State University, Dec. 2003

Shilpa Muniswamyreddy, M.S., Wright State University, Feb. 2004

Towsif Mannan, M.S., Wright State University, Jun. 2004

Sowjanya Chava, M.S., Wright State University, Jun. 2004

UNIVERSITY SERVICES

- Founding Director, Mobile Information and Communication Systems Lab, WSU
- Undergraduate Study Committee, CSE Department, WSU, Sep. 2003 – July, 2004.
- CSE Ph.D. Qualifying Examination Committee, CSE Department, WSU, 2003-Date.
- Faculty Search Committee, CSE Department, WSU, July 2004-Date.