

CURRICULUM VITAE

Chunsheng Xin

Department of Computer Science

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Education

- Ph.D., Computer Science and Engineering, State Univ. of New York at Buffalo, September, 2002
Dissertation: Optical Network Control, Engineering & Switching
Advisor: Chunming Qiao
Industrial Mentor: Sudhir Dixit, Senior & Site Manager, Nokia Research Center, Boston, MA
- M.E., Computer Engineering, Chinese Academy of Sciences, Beijing, China, June 1997
Thesis: Design and Implementation of a Simplified-Unsimplified Chinese Conversion System
Advisor: Yufang Sun
- B.S., Computer Science, Wuhan University, Wuhan, China, June 1994

Honors

- Outstanding Researcher of year 2003, School of Science and Technology, Norfolk State University, Norfolk, VA
- Summer Research Awards, summer 2003 (\$7,000), 2004 (\$7,500), 2005 (\$7500), 2006 (\$7500) School of Science and Technology, Norfolk State University, Norfolk, VA
- Patent Pending Award (\$1500), Mar. 2002, Nokia, Boston, MA
- Presidential Fellowship (\$16,000), 1997 – 2001, State Univ. of New York at Buffalo, Buffalo, NY
- Graduate Fellowship, 1994 – 1996, Chinese Academy of Sciences, Beijing, China
- Dean's Scholarship, 1991 – 1993, Wuhan Univ., Wuhan, China

Professional Activities

- Invited talk, "Traffic Grooming in Optical Networks", Computer Science Department, University of Delaware, Newark, DE, Mar. 15, 2004
- Technical conference organization
 - Publication Chair, International Conference in Communications and Networking in China (China-Com), 2007
 - Session Chair
 - * IEEE International Conference on Broadband Communications, Networks and Systems (Broad-Nets), 2004–2006
 - * International Workshop on Traffic Grooming in WDM Networks, 2004, 2005
 - * IEEE 2003 International Conference on Computer Communications and Networks (ICCCN), 2003, 2006

- Technical Program Committee Member
 - * IEEE Vehicular Technology Conference (VTC), 2007
 - * Second International Conference on Cognitive Radio Oriented Wireless Networks and Communications (CrownCom), 2007
 - * IEEE CogNet Workshop “Towards Cognition in Wireless Networks”, 2007
 - * First IEEE Workshop on Networking Technologies for Software Defined Radio (SDR) Networks, 2006
 - * IEEE International Conference on Wireless Information Networks and Systems (WINSYS), 2005–2007
 - * IEEE International Conference on Broadband Communications, Networks and Systems (BroadNets), 2004–2007
 - * IEEE International Conference on Computer Communications and Networks (ICCCN), 2004–2007
 - * International Conference in Communications and Networking in China (ChinaCom), 2006–2007
 - * International Workshop on Traffic Grooming in WDM Networks, 2004, 2005
 - * International Workshop on Optical Optical Burst Switching (WOBS), 2003, 2004
 - * International Conference on E-business and Telecommunication Networks (ICETE), 2005, 2006
 - * Annual Conference on Communication Networks and Services Research (CNSR), 2006–2007.
 - * IEEE Global Communications Conference (GlobeCom), 2003, 2006, 2007
 - * Second International Human.Society@Internet Conference, 2003
- Referee for journals
 - IEEE/ACM Transactions on Networking
 - IEEE Journal on Selected Areas in Communications (JSAC)
 - IEEE Journal of Parallel and Distributed Computing
 - IEEE Journal of Lightwave Technology
 - IEEE Communications Letters
 - IEEE Communications Magazine
 - IEEE Optical Communications
 - OSA Journal of Optical Networking
 - Elsevier International Journal of Computer Networks
 - Elsevier International Journal of Performance Evaluation
 - Elsevier Journal of Computer Communications
 - Journal of High Speed Networks
 - International Journal of Computers and Applications
 - Computers and Operations Research (C&OR) Journal
 - International Journal of Communication Systems
 - International Journal of Ad Hoc and Ubiquitous Computing (IJAHUC)
- Reviewer for conferences
 - All conferences served as Technical Program Committee (TPC) member
 - IEEE International Symposium for Circuits and Systems (ISCAS), 2007
 - The IEEE Conference on Computer Communications (Infocom) 2004, 2005, 2006
 - Hawaii International Conference on System Sciences (HICSS), Jan 4-7, 2006, Kauai, Hawaii.

- The 30th Annual IEEE Conference on Local Computer Networks, Nov. 15-17, 2005, Sydney, Australia.
- IEEE Global Communications Conference (GlobeCom), 2003–2006
- The 2005 International Conference on Parallel Processing (ICPP-05), June 14-17, 2005, Univ. of Oslo, Norway
- IEEE International Conference on Communications (ICC), 2003–2006
- 11th IEEE International Conference on Networks (ICON 2003), Sep. 28 to Oct. 1, 2003, Sydney, Australia
- 4th Annual Optical Networking and Communications conference (OptiComm 2003)
- 7th International Federation for Information Processing (IFIP) working conference on Optical Network Design and Modeling (ONDM 2003), Feb. 3-5, 2003, Budapest, Hungary
- 3rd Annual Optical Networking and Communications Conference (Opticomm 2002)
- Outside PhD Dissertation Committee Members
 - Kennie Jones, Department of Computer Science, Old Dominion University, Norfolk, VA
 - Cheryl Hinds, Department of Computer Science, University of Idaho, Moscow, ID
- Invited to serve as an external expert to evaluate the PhD dissertation proposal of a PhD candidate student in the International Graduate School in Information and Communication Technologies, University of Trento, Povo di Trento, Italy

Experiences

- 09/02 – present, Assistant Professor, Dept. of CS, Norfolk State University, Norfolk, VA
- 05/00 – 08/02, Research Co-op, Nokia Research Center, Boston, MA
- 8/97 – 5/00, Research & Teaching Assistant, Dept. of CSE, SUNY at Buffalo, Buffalo, New York
- 9/94 – 7/97, Research Assistant, Institute of Software, Chinese Academy of Sciences, Beijing, China

Patent

- “Method and System for Efficient Management and Transport of Traffic over a Network”, pending

Book Chapter

- **Chunsheng Xin**, Sudhir Dixit, and Chunming Qiao, Chapter 14 “IP-over-WDM Control and Signaling” in IP Over WDM: Building the Next Generation Optical Internet, ISBN: 0-471-21248-2, John Wiley & Sons, Mar. 2003
- Sami Sheeshia, Xiaojun Cao, Vishal Anand, **Chunsheng Xin**, Chunming Qiao, “Optical Networks,” in Section “Physical Layer: Optical Fiber”, Volume “Parallel and Distributed Systems”, Encyclopedia of Computer Science and Engineering, to be published by John Wiley and Sons

Standardization Contribution

- Y. Ye, **Chunsheng Xin**, A. Maislos, “MPCP State Machines,” presented in the May 2002 meeting of IEEE 802.3ah Ethernet in the First Mile Task Force

Proposals

- PI, “Collaborative Research: NeTS-WN: Toward High Performance Mesh Networks”, submitted to NSF in Jan 2007.
- PI, “Collaborative Research: NeTS-ProWiN: Toward Virtual Spectrum”, submitted to NSF in Jan 2006, review result “Recommend”, not funded.
- Co-PI, “CRI: Infrastructure for Collaborative Wireless Grid”, a joint proposal with NSU and ODU CS department faculty (Drs. Ahmad, Mona, Olariu, etc.), submitted to NSF CISE CRI solicitation in Aug. 22 2005, not funded.
- PI, “Collaborative Research: NeTS-ProWiN: Toward Virtual and Open Spectrum”, submitted to NSF in Jan 2005, review result “Recommend”, not funded.
- PI, “A Novel Layered Graph Model for Topology Formation and Routing in XG networks”, submitted to United Negro College Fund Special Programs Corporation (UNCFSP) with association to U.S. Department of Defense (DoD) in Mar 2005, not funded.
- PI, “Collaborative Research: NeTS-ProWiN: Toward Virtual and Open Spectrum”, submitted to NSF in Apr. 2004, review result “Recommend”, not funded.

Journal Papers

1. **Chunsheng Xin**, “Resource Planning for Dynamic Traffic Grooming in WDM Optical Network,” to be submitted to *Elsevier Journal of Computer Communications*
2. **Chunsheng Xin**, “Dynamic Traffic Grooming in Optical Networks With Wavelength Conversion,” submitted to *IEEE Journal of Selected Areas in Communications (JSAC)*
3. **Chunsheng Xin**, “Blocking Analysis of Dynamic Traffic Grooming on Mesh WDM Optical Networks,” accepted to appear in *IEEE/ACM Transactions on Networking*.
4. **Chunsheng Xin**, Bin Wang, Xiaojun Cao, Jikai Li, “Logical Topology Design for Dynamic Traffic Grooming in Mesh WDM Optical Networks,” *IEEE Journal of Lightwave Technology*, vol 24(6), pp. 2267-75, June 2006.
5. **Chunsheng Xin** and Chunming Qiao, “Hybrid Optical Switching in WDM Optical Networks,” accepted to *IEEE Communication Magazine*.
6. Xiaojun Cao, Vishal Anand, Jikai Li, and **Chunsheng Xin**, “Waveband Switching Networks with Limited Wavelength Conversion,” *IEEE Communications Letters*, vol 9(6), pp. 646 – 648, June 2005.
7. **Chunsheng Xin**, Chunming Qiao, Sudhir Dixit, “Traffic Grooming in the Mesh WDM Optical Network – Performance Analysis,” *IEEE Journal of Selected Areas in Communications (JSAC)*, vol 22(9), pp. 1658-69, Nov. 2004.
8. H. Zang, P. Ho, Y. Ye, **Chunsheng Xin**, and W. Wen, “Issues in Designing Optical Switched Networks – Topics Overview on APOC 2001,” *Optical Networks Magazine*, May/Jun. 2003, Vol. 4, NO. 3, pp.49-64
9. **Chunsheng Xin**, Yinghua Ye, Sudhir Dixit, Chunming Qiao, “A Joint Lightpath Routing Approach in Survivable Optical Networks,” *Optical Networks Magazine*, May/Jun. 2002, Vol. 3, NO. 3, pp. 13-20
10. **Chunsheng Xin**, Yinghua Ye, Sudhir Dixit, Chunming Qiao, “An Emulation-based Comparative Study of Centralized and Distributed Control Schemes for Optical Networks,” *Optical Networks Magazine*, Sep./Oct. 2002, Vol. 3, NO. 5, pp. 44-51

11. **Chunsheng Xin**, Yinghua Ye, Ti-Shiang Wang, Myungsik Yoo, Sudhir Dixit, and Chunming Qiao, "On an IP-Centric Optical Control Plane," *IEEE Communications Magazine*, Sep. 2001, Vol. 39, pp. 88-93
12. **Chunsheng Xin**, Yufang Sun, "Design and Implementation of a Simplified-Unsimplified Chinese Character Conversion System," *Journal of Software*, Nov. 2000, Vol. 11, NO. 11, pp. 1534-1540 (a journal published in China)
13. **Chunsheng Xin**, Yufang Sun, "Simplified-Unsimplified Chinese Conversion and Word Segmentation," *Mini-Micro System*, Sep. 2000, Vol. 21, NO. 9, pp. 982-985 (a journal published in China)

Conference Papers

1. **Chunsheng Xin**, "A Layered Graph Interface Assignment Algorithm for Multi-Channel Wireless Networks," in *Proceeding of IEEE International Conference on Computer Communications and Networks*, Oct. 2006, Arlington, VA
2. **(Invited Paper) Chunsheng Xin**, "Wavelength Converter Placement for Dynamic Traffic Grooming in Optical Networks," in *Proceeding of IEEE International Conference on Broadband Communications, Networks, and Systems (BroadNets)*, Oct 2-6, 2006, San Jose, CA, (to appear).
3. **Chunsheng Xin** and Chien-Chung Sheng, "Reliable Routing in Programmable Radio Wireless Networks," in *Proceeding of the First IEEE Workshop on Networking Technologies for Software Defined Radio (SDR)*, Sep 25, 2006, Reston, VA.
4. Kennie H. Jones, Kenneth N. Lodding, Stephan Olariu, Larry Wilson, **Chunsheng Xin**, "Biology Inspired Approach for Communal Behavior in Sensor Networks," in *Proceeding of the 39th Hawaii International Conference on System Sciences (HICSS-39)*, Jan. 4-7, 2006, Kauai, Hawaii.
5. Kennie H. Jones, Kenneth N. Lodding, Stephan Olariu, Larry Wilson, **Chunsheng Xin**, "Biology-inspired Architecture for Situation Management," in *Proceeding of MILCOM*, Workshop on Situation Management (SIMA), Oct. , 2006, Washington DC.
6. **Chunsheng Xin**, Bo Xie, Chien-Chung Shen, "A Novel Layered Graph Model for Topology Formation and Routing in Dynamic Spectrum Access Networks," in *Proceeding of First IEEE Symposium on New Frontiers in Dynamic Spectrum Access Networks*, Nov 8-11, 2005, Baltimore, MD.
7. Kennie H. Jones, Kenneth N. Lodding, Stephan Olariu, Larry Wilson, **Chunsheng Xin**, "An Ecosystem Model for Massively-Deployed Sensor Networks," in *Proceeding of 2005 International Conference on Intelligent Sensors, Sensor Networks and Information Processing (ISSNIP 2005)*, Dec. 5-8, 2005, Melbourne, Australia.
8. Kennie H. Jones, Kenneth N. Lodding, Stephan Olariu, Larry Wilson, **Chunsheng Xin**, "Sensor Networks for Situation Management: A Biomimetic Model," in *Proceeding of MILCOM*, Workshop on Situation Management (SIMA), Oct. 17, 2005, Atlantic City, NJ.
9. Kennie H. Jones, Kenneth N. Lodding, Stephan Olariu, Larry Wilson, **Chunsheng Xin**, "Biology-Inspired Distributed Consensus in Massively-Deployed Sensor Networks," in *Proceeding of 4th International Conference on AD-HOC Networks & Wireless (AD-HOC NOW)*, Oct. 6 - 8, 2005, Cancun, Mexico.
10. Kennie H. Jones, Kenneth N. Lodding, Stephan Olariu, Larry Wilson, **Chunsheng Xin**, "Energy Usage in Biomimetic Models for Massively-Deployed Sensor Networks," in *Proceeding of Third International Symposium on Parallel and Distributed Processing and Applications (ISPA'05)*, First International Workshop on Mobile Ad-hoc and Ubiquitous Sensor Networks (MASN), Nov 2 -5, 2005, Najing, China.
11. Kennie H. Jones, Kenneth N. Lodding, Stephan Olariu, Larry Wilson, **Chunsheng Xin**, "Biomimetic Models for an Ecological Approach to Massively-Deployed Sensor Networks," in *Proceeding of 18th International Conference on Parallel and Distributed Computing Systems (PDCS)*, Sep 12-14, 2005, Las Vegas, NE.

12. Bin Wang, Tianjian Li, **Chunsheng Xin**, “On Survivable Service Provisioning in WDM Optical Networks Under a Scheduled Traffic Model,” in *Proceeding of the IEEE 2005 Global Communications Conference (Globecom)*, Nov 29 – Dec 2, 2005, St. Louis, MO.
13. Bin Wang, Tianjian Li, **Chunsheng Xin**, “On Service Provisioning Under a Scheduled Traffic Model in Reconfigurable WDM Optical Networks,” in *Proceeding of IEEE International Conference on Broadband Networks (BroadNets)*, Oct. 3 – 7, 2005, Boston, MA.
14. **Chunsheng Xin**, Jikai Li, Xiaojun Cao, Bin Wang, “A Route Segment Technique for Blocking Analysis of Dynamic Traffic Grooming,” in *Proceeding of IEEE International Conference on Broadband Networks (BroadNets)*, Second International Workshop on Traffic Grooming in WDM Networks, Oct. 7, 2005, Boston, MA.
15. **Chunsheng Xin**, Bin Wang, Xiaojun Cao, Jikai Li, “Formulation of Multi-Hop Dynamic Traffic Grooming in WDM Optical Networks,” in *Proceeding of IEEE International Conference on Broadband Networks (BroadNets)*, Second International Workshop on Traffic Grooming in WDM Networks, Oct. 7, 2005, Boston, MA.
16. **Chunsheng Xin**, Bin Wang, Xiaojun Cao, Jikai Li, “Computing Loss Probability for Dynamic Traffic Grooming in Optical Networks with Wavelength Conversion,” in *Proceeding of the IEEE 2005 Global Communications Conference (Globecom)*, Nov 29 – Dec 2, 2005, St. Louis, MO.
17. **Chunsheng Xin**, Bin Wang, Xiaojun Cao, Jikai Li, “A Heuristic Logical Topology Design Algorithm for Multi-Hop Dynamic Traffic Grooming in WDM Optical Networks,” in *Proceeding of the IEEE 2005 Global Communications Conference (Globecom)*, Nov 29 – Dec 2, 2005, St. Louis, MO.
18. Jikai Li, Xiaojun Cao, **Chunsheng Xin**, “Double Reservation in Optical Burst Switching Networks,” in *Proceeding of IEEE Sarnoff Symposium*, 2005, pp. 180 – 183.
19. **Chunsheng Xin**, Feng He, “Cross-Layer Path Computation for Dynamic Traffic Grooming in Mesh WDM Optical Networks,” in *Proceeding of the 43rd ACM Southeast Conference*, 2005.
20. **Chunsheng Xin**, Bin Wang, “Logical Topology Design for Dynamic Traffic Grooming in Mesh WDM Optical Networks,” in *Proceeding of IEEE International Conference on Communication (ICC)*, 2005, Seoul, South Korea.
21. **Chunsheng Xin**, “Computing Blocking Probability of Dynamic Traffic Grooming in Mesh WDM Optical Networks,” in *Proceeding of IEEE International Conference on Broadband Networks (BroadNets)*, 2004.
22. **Chunsheng Xin**, Chunming Qiao, “Performance Analysis of Multi-Hop Traffic Grooming in Mesh WDM Optical Networks”, in *Proceeding of the IEEE 2003 Internal Conference on Computer Communications and Networks (ICCCN)*, 2003, pp. 237 – 242.
23. **Chunsheng Xin**, Chunming Qiao, Sudhir Dixit, “Analysis of Single-Hop Traffic Grooming in Mesh WDM Optical Networks”, in *Proceeding of the International Society for Optical Engineering (SPIE)*, Vol. 5285, the Fourth Annual Optical Networking and Communications Conference (Opticomm 2003), pp. 91 – 101.
24. **Chunsheng Xin**, Chunming Qiao, Sudhir Dixit, “Traffic Grooming in Mesh WDM Optical Networks – Performance Analysis,” in *Proceeding of the IEEE 2003 Global Communications Conference (Globecom)*, 2003, pp. 3732 – 3736.
25. **Chunsheng Xin**, Chunming Qiao, Yinghua Ye, Sudhir Dixit, “A Hybrid Optical Switching Approach,” in *Proceeding of the IEEE 2003 Global Communications Conference (Globecom)*, 2003, pp. 3808 – 3812.
26. **Chunsheng Xin**, Yinghua Ye, Sudhir Dixit, Chunming Qiao, “An Agent-based Traffic Grooming & Management Mechanism for IP over Optical Networks,” in *Proceeding of the IEEE International Conference on Computer Communications and Networks (ICCCN)*, 2002, Miami, FL, pp. 425 - 430

27. **Chunsheng Xin**, Yinghua Ye, Sudhir Dixit, Chunming Qiao, "An Integrated Traffic Transport Approach in Optical Networks," in *Proceeding of the International Society for Optical Engineering (SPIE)*, Vol. 4874, the Third Optical Networking and Communications Conference (Opticomm 2002), Jul. 29 – Aug. 1, 2002, Boston, MA, pp. 51-60
28. **Chunsheng Xin**, Yinghua Ye, Sudhir Dixit, Chunming Qiao, "An Integrated Lightpath Provisioning Approach in Mesh Optical Networks," in *IEEE/OSA Optical Fiber Communications (OFC) Technical Digest*, OFC 2002, Mar. 16-22, 2002, Anaheim, California, pp. 547 – 549
29. **Chunsheng Xin**, Yinghua Ye, Sudhir Dixit, Chunming Qiao, "A Joint Lightpath Routing Approach in Survivable Optical Networks," in *Proceeding of the International Society for Optical Engineering (SPIE)*, Vol. 4585, the Asian-Pacific Optical and Wireless Communications Conference (APOC) 2001, Nov. 12-16, 2001, Beijing, China, pp. 139 - 146
30. **Chunsheng Xin**, Yinghua Ye, Sudhir Dixit, Chunming Qiao, "A Joint Working and Protection Path Selection Approach in WDM Optical Networks," in *Proceeding of the IEEE 2001 Global Communications Conference (Globecom)*, 2001, Nov. 25-29, 2001, San Antonio, Texas, Vol. 4, pp. 2165-2168
31. **Chunsheng Xin**, Yinghua Ye, Sudhir Dixit, Chunming Qiao, "An Enhanced Route Assignment Mechanism in Optical Control Plane," in *Proceeding of the International Society for Optical Engineering (SPIE)*, Vol. 4599, the Second Optical Networking and Communications Conference (Opticomm 2001), Aug 19-24, 2001, Denver, Colorado, pp. 104-111
32. **Chunsheng Xin**, Yinghua Ye, Sudhir Dixit, and Chunming Qiao, "An Emulation-based Comparative Study of Centralized and Distributed Control Schemes for Optical Networks," in *Proceeding of the International Society for Optical Engineering (SPIE)*, Vol 4527, SPIE's International Symposium on the Convergence of Information Technologies and Communications (ITCom) 2001, Aug. 19-24, 2001, Denver, Colorado, pp. 65-72
33. **Chunsheng Xin** and Chunming Qiao, "A Comparative Study of OBS and OFS," in *IEEE/OSA Optical Fiber Communications (OFC) Technical Digest*, OFC 2001, Mar. 17-23, 2001, Anaheim, California
34. **Chunsheng Xin**, Ti-Shiang Wang, Yinghua Ye, Myungsik Yoo, Sudhir Dixit, and Chunming Qiao, "On Design and Architecture of an IP over WDM Optical Network Control Plane," *Towards an Optical Internet*, the International Federation for Information Processing (IFIP) working conference on Optical Network Design and Modeling (ONDM) 2001, Feb 5-8, 2001, Vienna, Austria, pp. 297-312