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CURRENT RESEARCH INTERESTS

- Wireless Network Security
- Sensor Networks
- Cross-Layer Optimization for Wireless Networks
- Wireless Channel Capacity Modeling
- QoS Enhancement of Multi-Hop Wireless Networks
- Multicast in Ad-Hoc Wireless Networks
- Statistical Network Calculus
- Real-Time Communications

EDUCATION

- **Ph.D.** in Computer Engineering, 1999

  Department of Computer Science, Texas A&M University, College Station, Texas

  Dissertation: Analysis of Network Traffic and Its Applications

  Advisor: Dr. Wei Zhao (Currently Serving as NSF Director of Computer and Network Systems)

- **M.S.** in Operations Research, 1985

  Department of Computer and System Science, Xiamen University, Xiamen, P.R. China

  Thesis: The Asymptotic Regulator Design for Distributed Parameter Systems

- **B.S.** in Applied Mathematics, 1982

  Department of Mathematics, Fuzhou University, Fujian, P.R. China

  Project: Improvement of Multiple Linear Regression's Algorithm and Midterm Weather Forecast

RESEARCH EXPERIENCE

- 2003 — Present: Visiting Assistant Professor, Department of Computer Science and Engineering, University of Texas at Arlington. (Host: Dr. Hao Che)
  - Research Areas
    - Cross-Layer Optimization for Wireless Networks
    - Wireless Channel Modeling and Performance Analysis
    - Security and Privacy in Wireless Sensor Network

- 2001 — 2003: Research Scientist, Department of Computer Science, University of Virginia. (Supervisor: Dr. Jörg Liebeherr)
  - Research Areas
    - Statistical Network Calculus

- Multicast in Mobile Ad-Hoc Networks

- 1999 — 2001: Postdoctoral Fellow, Department of Electrical and Computer Engineering, Rice University. (Supervisor: Dr. Edward W. Knightly)
  - Research Areas
    - QoS Enhancement of IEEE 802.11 MAC
    - Distributed Scheduling in Multi-Hop Wireless Networks
    - Coordinated Network Scheduling in High Speed Packet Switching Networks

- 1996 — 1999: Research Assistant, Department of Computer Science, Texas A&M University. (Advisor: Dr. Wei Zhao)
  - Research Areas
    - NetEx – A Toolkit for Delay Guaranteed Communications in IP over ATM Networks
    - Differentiated Services and Integrated Services
    - Hard Real-Time Communications

- 1985 — 1996: Teaching Assistant, Department of Mathematics, Texas A&M University, USA; Lecturer, Department of Computer and System Science, Xiamen University, China
  - Research Areas
    - Feedback Controller Design for Nonlinear Systems
    - Eigenvalue Computation of Linear Elastodynamics in 3-D Space
    - Distributed Parameter Control Systems

RESEARCH PROPOSAL

H. Che and **C. Li**, "QoS Provisioning over Future Wireless Networks: A Cross-Layer Approach, " submitted to Networking Technology and Systems Program in NSF CISE, 2004.

TEACHING EXPERIENCE

- Lectured Graduate Course "*Advanced Wireless Networking*" in the Department of Computer Science and Engineering at the University of Texas at Arlington, Texas, USA (Spring 2005)
- Lectured Graduate Course "*Enhancing QoS over Wireless Networks: A Cross-Layer Approach*" in the Department of Computer Science and Engineering at the University of Texas at Arlington, Texas, USA (Fall 2004)
- Lectured Graduate Course "*Mobile Computing and Wireless Networking*" in the Department of Computer Science at the University of Virginia, Virginia, USA (Fall 2002)
- Lectured Following Undergraduate Courses in the Department of Computer and System Science at Xiamen University, P.R. China:
  - *Modern Control Systems*
  - *Operations Research*
  - *Linear Algebra*

SELECTED JOURNAL PUBLICATIONS

1. W. Si and **C. Li,** "RMAC: A Reliable Multicast MAC Protocol for Wireless Ad Hoc Networks," *Journal of Computer Science and Technology, 20(5), September 2005*.

2. **C. Li** and E. Knightly, "Schedulability Criterion and Performance Analysis of Coordinated Multihop Schedulers," *IEEE/ACM Transactions on Networking, 13(2), April 2005.*

3. B. Choi, D. Xuan, **C. Li**, R. Bettati, and W. Zhao, "Utilization-Based Admission Control for Scalable Real-Time Communications," *Real-Time System, 24 (2), May, 2003.*

4. **C. Li** and E. Knightly, "Coordinated Multihop Scheduling: A Framework for End-to-End Services," *IEEE/ACM Transactions on Networking, 10(6), December 2002.*

5. V. Kanodia, **C. Li**, A. Sabharwal, B. Sadeghi, and E. Knightly, "Distributed Priority Scheduling and Medium Access in Ad Hoc Networks," in *ACM Wireless Networks Journal (WINET), 8(6), November 2002.*

6. J. K. -Y. Ng, S. Song, **C. Li**, and W. Zhao, "A New Method for Integrated End-to-End Delay Analysis in ATM Networks," *Journal of Communications and Networks, Vol. 1, Number 3, September 1999.*

7. **C. Li,** A. Burchard, and J. Liebeherr, "A Network Calculus with Effective Bandwidth," submitted to *IEEE/ACM Transactions on Networking.*

8. **C. Li**, H. Che, and S. Li, "A Wireless Channel Capacity Model for Quality of Service," submitted to *IEEE Transaction on Wireless Communications.*

SELECTED CONFERENCE PUBLICATIONS AND TECHNICAL REPORTS

Ø Network Security

1. Y. Guan, **C. Li**, D. Xuan, R. Bettati, and W. Zhao, "Preventing Traffic Analysis for Real-Time Communication Networks," in *Proceedings of IEEE MILCOM 1999*, New Jersey, November 1999.

2. H. Fu and **C. Li**, "A Space-Time Keying for Resilient Security in Wireless Sensor Networks", in preparing

Ø Cross-Layer Optimization for Wireless Networks

3. **C. Li**, H. Che, and S. Li, "A New Channel Fade Duration Model for Exploiting Multi-User Diversity Gain and Supporting Delay Sensitive Applications", submitted to INFOCOM 2006.

4. **C. Li**, H. Che, and S. Li, "A Wireless Channel Capacity Model for Quality of Service", technical report, 2004.

5. **C. Li**, H. Che, and S. Li, "Quality of Service Aware Adaptive Modulation and Coding over Wireless Channels" in Proceedings of WNCG Wireless Networking Symposium 2004, Austin, Texas, 2004.

Ø Multicast in Mobile Ad-Hoc Wireless Networks

6. W. Si and **C. Li**,, "RMAC: A Reliable Multicast MAC Protocol for Wireless Ad Hoc Networks," in *Proceedings of IEEE ICPP 2004,* Quebec, Canada, August 2004.

Ø Statistical Network Calculus

7. **C. Li,** A. Burchard, and J. Liebeherr, "A Network Calculus with Effective Bandwidth," technical report, 2003.

8. **C. Li** and J. Liebeherr, "A Note for Commonly-Used Scheduling Disciplines and Traffic Models," technical report, 2003.

Ø Mobile Computing and Wireless Networking

9. V. Kanodia, **C. Li**, A. Sabharwal, B. Sadeghi, and E. Knightly, "Ordered Packet Scheduling in Wireless Ad Hoc Networks: Mechanisms and Performance Analysis," in *Proceedings of ACM MOBIHOC 2002*, Lausanne, Switzerland, June 2002.

10. V. Kanodia, **C. Li**, A. Sabharwal, B. Sadeghi, and E. Knightly, "Distributed Multi-Hop Scheduling and Medium Access with Delay and Throughput Constraints," in *Proceedings of ACM MOBICOM 2001*, Rome, Italy, July 2001.

Ø Coordinated Multihop Scheduling

11. **C. Li** and E. Knightly, "Schedulability Criterion and Performance Analysis of Coordinated Schedulers," in *Proceedings of the 17th ITC*, Salvador, Brazil, September 2001.

12. **C. Li** and E. Knightly, "Coordinated Network Scheduling: A Framework for End-to-End Services," in *Proceedings of IEEE ICNP 2000,* Osaka, Japan, November 2000.

Ø Scalable Admission Control

13. D. Xuan, **C. Li,** R. Bettati, Jianer Chen, and W. Zhao, "Utilization-Based Admission Control for Real-Time Applications," in *Proceedings of IEEE ICPP 2000*, Toronto, Canada, August 2000.

14. B. Choi, D. Xuan, **C. Li**, R. Bettati, and W. Zhao, "Scalable QoS Guaranteed Communication Services for Real-Time Application," in *Proceedings of IEEE ICDCS 2000*, Taipei, Taiwan, April 2000.

- **Real-Time Systems**

15. **C. Li**, R. Bettati, and W. Zhao, "Response Time Analysis for Distributed Real-Time Systems with Bursty Job Arrivals," *in Proceedings of IEEE ICPP 1998*, Minneapolis, MI, August 1998.

- **Deterministic QoS Guarantees**

16. **C. Li**, R. Bettati, and W. Zhao, "New Delay Analysis Method in High Speed Networks," in *Proceedings of IEEE ICPP 1999,* Wakamatsu, Japan, September 1999.

17. **C. Li**, R. Bettati, and W. Zhao, "Static Priority Scheduling for ATM Networks," in *Proceedings of IEEE RTSS 1997*, San Francisco, CA, December 1997.

18. **C. Li**, A. Raha, and W. Zhao, "Stability in ATM Networks," in *Proceedings of IEEE INFOCOM 1997,* Kobe, Japan, April 1997.

PROFESSIONAL MEMBER AFFILIATIONS

- IEEE Member 1998-present
- American Mathematics Society Member 1993-1997

PROFESSIONAL ACTIVITIES

Referee for IEEE/ACM Transactions on Networking, IEEE/ACM Transactions on Communications, IEEE Transactions on Wireless Communications, Computer Networks Journal, Wireless Personal Communications Magazine, Journal of Real-Time System, IEEE INFOCOM Conference, ACM MOBICOM Conference, ACM MOBIHOC Conference, ACM SIGMETRICS Conference, IEEE Real-Time System Symposium, IEEE IWQoS Workshop, IEEEE International Conference on Computer Communication and Networks, and Mathematical Reviews

REFERENCES

Wei Zhao**,** Professor (currently serving as NSF director of computer and network systems)
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Edward W. Knightly, Associate Professor
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