

Curriculum Vitae

Chin-Tser Huang

CONTACT INFORMATION

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EDUCATION

1998 – 2003 **The University of Texas at Austin**, Austin, Texas
Ph.D. in Computer Sciences
▪ Dissertation title:
Hop Integrity: A Defense against Denial-of-Service Attacks
▪ Advisor: Mohamed G. Gouda

1996 – 1998 **The University of Texas at Austin**, Austin, Texas
M.S.C.S. in Computer Sciences

1989 – 1993 **National Taiwan University**, Taipei, Taiwan
B.S. in Computer Science and Information Engineering

WORK EXPERIENCE

2003 – present **University of South Carolina**, Columbia, South Carolina
Assistant Professor

1998 – 2002 **The University of Texas at Austin**, Austin, Texas
Research Assistant
▪ Network security protocol design and verification

1995 – 1996 **Institute of Information Science, Academia Sinica**, Taiwan
Research Assistant
▪ Intelligent Chinese Information Retrieval System Design

1993 – 1995 Deployed Army, Taiwan
▪ Personnel database management

RESEARCH INTERESTS

- Network Security
- Network Protocol Design and Verification

- Distributed Computing

TEACHING EXPERIENCE

- 2003 – present **University of South Carolina**, Columbia, South Carolina
Assistant Professor, Department of Computer Science and Engineering
Courses developed and taught:
- Computer Network Programming (undergraduate/graduate course CSCE515), Spring 2005, Spring 2004
 - Network Systems Security (graduate course CSCE715), Fall 2004
 - Topics in Computer Network Security (graduate course CSCE790G), Fall 2003
- 1997 – 2002 **The University of Texas at Austin**, Austin, Texas
Teaching Assistant, Department of Computer Sciences
Courses assisted and taught:
- Communication Networks (graduate course CS386)
 - Computer Networks (undergraduate course CS356)
 - Compilers (undergraduate course CS378)
 - Foundations of Computer Sciences (undergraduate course CS307)
 - Introduction to Computer Sciences (undergraduate course CS304)

AWARDS AND HONORS

- 10/2002 Student travel fellowship, Luminy Seminar on Self-Stabilization, Marseille, France.
- 06/2001 Student fellowship, Graduate School, the University of Texas at Austin.
- 06/2000 Student fellowship, Graduate School, the University of Texas at Austin.

RESEARCH GRANT

- Co-PI, with S. Nelakuditi (PI) and T. Liu, “CRI: Generic Experimental Networking Infrastructure for Research on Emerging Networks and Services,” NSF, \$199,583, May 2006 – May 2008.
- PI, with Y. Shin (Co-PI), “Active Detection and Automated Classification of Network Anomalies using Wavelet-based Techniques,” AFRL/DARPA, \$100,024, January 2006 – September 2006.
- PI, “Adaptive and Precise Intrusion Detection Techniques,” AFRL/DARPA, \$179,778, August 2005 – September 2006.
- PI, “Multiple Instantiations of Dynamic Firewall Rules in BGP Routers,” University of South Carolina Research Foundation, \$16,000, April 2005 – Jun 2006.

PROFESSIONAL SERVICES

- Member, IEEE Computer Society.
- Member, Association for Computing Machinery.
- Member, Sigma Xi.
- Editor, Journal of High Speed Networks, since April 2005.
- Program Committee Chair, the 6th International Workshop on Assurance in Distributed Systems and Networks (ADSN 2007).
- Program Committee co-chair, International Workshop on Wire-less and Sensor Networks (WSNET 2006, 2007).
- Co-chair of Broadband Networking and Protocols Symposium, 16th International Conference on Computer and Communications and Networks (ICCCN 2007).
- Co-chair of Special Session on Computer Security, 45th ACM Southeast Conference (ACMSE 2007).
- Vice Program Committee Chair, the 5th International Workshop on Assurance in Distributed Systems and Networks (ADSN 2006).
- Program Committee member, 27th IEEE International Conference on Distributed Computing Systems (ICDCS 2007).
- Program Committee member, 15th IEEE International Conference on Computer and Communications and Networks (ICCCN 2006).
- Program Committee member, 49th Annual IEEE Globecom Conference (GLOBECOM 2006).
- Program Committee member, Third International Symposium on Wireless Communication System (ISWCS 2006).
- Program Committee member, Eighth International Symposium on Stabilization, Safety, and Security of Distributed Systems (SSS 2006).
- Program Committee member, 44th ACM Southeast Conference (ACMSE 2006).
- Program Committee Member, the 13th IEEE International Conference on Network Protocols (ICNP 2005).
- Program Committee Member and Session Chair, the 4th International Workshop on Assurance in Distributed Systems and Networks (ADSN 2005).
- Program Committee Member and Session Chair, the 13th IEEE International Conference on Computer Communications and Networks (ICCCN 2004).
- Panelist, NSF SBIR/STTR Phase I Panel, February 2007.
- Panelist, NSF SBIR/STTR Phase I Panel, March 2006.

- Panelist, NSF SBIR/STTR Phase II Panel, October 2003.
- Referee, Journal of Information and Computation.
- Referee, the 8th IEEE International Conference on Network Protocols (ICNP 2000).

PUBLICATIONS

BOOK:

1. Chin-Tser Huang, Mohamed G. Gouda, *Hop Integrity in the Internet*, to be published by Springer in 2005.
2. Rainer Falk, Chin-Tser Huang, Florian Kohlmayer, Ai-Fen Sui, “Security in Wireless Mesh Networks,” book chapter of *Wireless Mesh Networking: Architectures, Protocols and Standards*, Auerbach Publications and CRC Press, December 2006.
3. Chin-Tser Huang, “Hop Integrity in Wireless Mesh Networks,” book chapter of *Security in Wireless Mesh Networks*, to be published by Auerbach Publications and CRC Press, July 2007.

JOURNAL PAPERS:

1. Chin-Tser Huang, Sachin Thareja, Yong-June Shin, “Wavelet-based Real Time Detection of Network Traffic Anomalies”, accepted by *International Journal of Network Security*, 2006.
2. Jeff Janies, Chin-Tser Huang, Nathan L. Johnson, Theodor Richardson, “SUMP: A Secure Unicast Messaging Protocol for Wireless Ad Hoc Sensor Networks”, accepted by *International Journal of Sensor Networks*, 2006.
3. Chin-Tser Huang, Mohamed G. Gouda, E. N. Elnozahy, “Convergence of IPsec in Presence of Resets”, *Journal of High Speed Networks*, Vol. 15, No. 2, 2006.
4. Mohamed G. Gouda, Chin-Tser Huang, “A Secure Address Resolution Protocol”, *Computer Networks*, Vol. 41, No. 1, January 2003.
5. Mohamed G. Gouda, E. N. Elnozahy, Chin-Tser Huang, Tommy M. McGuire, “Hop Integrity in Computer Networks”, *IEEE/ACM Transactions on Networking*, Vol. 10, No. 3, June 2002.

CONFERENCE PAPERS:

1. S. Xu, C.-T. Huang, M. M. Matthews, “Secure Multicast in Various Scenarios of WirelessMAN”, to appear in the 2007 IEEE Southeast Conference, March 2007.
2. X. Zheng, C.-T. Huang, M. M. Matthews, “Chinese Remainder Theorem Based Group Key Management”, to appear in the 45th ACM Southeast Conference (ACMSE 2007), March 2007.

3. M. Ginley, S. Xu, C.-T. Huang, M. M. Matthews, "Efficient and Secure Multicast in WirelessMAN", *Proceedings of International Symposium on Wireless Pervasive Computing 2007 (ISWPC2007)*, February 2007.
4. M. G. Gouda, J. Cobb, C.-T. Huang, "Fault Masking in Tri-Redundant Systems", *Proceedings of the 8th International Symposium on Stabilization, Safety, and Security of Distributed Systems (SSS 2006)*, November 2006.
5. C.-T. Huang, A. B. Alexandrov, P. Kalakota, "Roaming Data Redundancy for Assurance in Critical Data Services", *Proceedings of the 2006 High Availability and Performance Computing Workshop (HAPCW 2006)*, in conjunction with the 2006 Los Alamos Computer Science Institute Symposium 2006 (LACSI2006), October 2006.
6. S. Xu, C.-T. Huang, "Attacks on PKM Protocols of IEEE 802.16 and Its Later Versions", *Proceedings of 3rd International Symposium on Wireless Communication Systems (ISWCS 2006)*, September 2006.
7. C.-T. Huang, S. Thareja, Y.-J. Shin, "Wavelet-based Real Time Detection of Network Traffic Anomalies", *Proceedings of Workshop on Enterprise Network Security (WENS 2006)* (in assoc. with Second SecureComm), August 2006.
8. Jeff Janies, Chin-Tser Huang, Nathan L. Johnson, "SUMP: A Secure Unicast Messaging Protocol for Wireless Ad Hoc Sensor Networks", *Proceedings of 2006 IEEE International Conference on Communications (ICC 2006)*, June 2006.
9. Chin-Tser Huang, Nathan L. Johnson, Jeff Janies, Alex X. Liu, "On Capturing and Containing E-mail Worms", *Proceedings of 25th IEEE International Performance Computing and Communications Conference (IPCCC 2006)*, April 2006.
10. Sen Xu, Manton M. Matthews, Chin-Tser Huang, "Security Issues in Privacy and Key Management Protocols of IEEE 802.16", *Proceedings of 44th ACM Southeast Conference (ACMSE 2006)*, March 2006.
11. Alex X. Liu, Jason Kovacs, Chin-Tser Huang, Mohamed G. Gouda, "A Secure Cookie Protocol for HTTP", *Proceedings of the 14th International Conference on Computer and Communications and Networks (ICCCN 2005)*, October 2005.
12. Xinliang Zheng, Chuming Chen, Chin-Tser Huang, Manton M. Matthews, Naveen Santhapuri, "A Dual Authentication Protocol for IEEE 802.11 Wireless LANs", *Proceedings of the 2nd International Symposium on Wireless Communication Systems (ISWCS)*, September 2005.
13. Chin-Tser Huang, Mohamed G. Gouda, "State Checksum and Its Role in System Stabilization", *Proceedings of the 4th International Workshop on Assurance in Distributed Systems and Networks (ADSN)*, June 2005.
14. Chin-Tser Huang, Mohamed G. Gouda, E. N. Elnozahy, "Convergence of IPsec in Presence of Resets", *Proceedings of the 2nd International Workshop on Assurance in Distributed Systems and Networks (ADSN)*, May 2003.

15. Mohamed G. Gouda, Chin-Tser Huang, E. N. Elnozahy, “Key Trees and the Security of Interval Multicast”, *Proceedings of the 22nd International Conference on Distributed Computing Systems (ICDCS)*, July 2002.
16. Chin-Tser Huang, E. N. Elnozahy, Mohamed G. Gouda, “Hop Integrity and the Security of Routing Protocols”, *Proceedings of the 3rd Annual IBM Austin Center for Advanced Studies Conference*, Austin, February 2002
17. Chin-Tser Huang, Mohamed G. Gouda, “An Anti-Replay Window Protocol with Controlled Shift”, *Proceedings of the 10th IEEE International Conference on Computer Communications and Networks (ICCCN)*, Phoenix, October 2001.
18. Mohamed G. Gouda, Chin-Tser Huang, Anish Arora, “On the Security and Vulnerability of PING”, *Proceedings of the 5th Workshop on Self-stabilizing Systems (WSS)*, Lisbon, Portugal, October 2001.
19. Mohamed G. Gouda, E. N. Elnozahy, Chin-Tser Huang, Eunjin Jung, “An Overview of Hop Integrity”, *Proceedings of the 2nd Annual IBM Austin Center for Advanced Studies Conference*, Austin, February 2001.
20. Mohamed G. Gouda, E. N. Elnozahy, Chin-Tser Huang, Tommy M. McGuire, “Hop Integrity in Computer Networks”, *Proceedings of the 8th IEEE International Conference on Network Protocols (ICNP)*, Osaka, Japan, November 2000. (This paper was voted as the best paper in the conference.)
21. Mohamed G. Gouda, Chin-Tser Huang, Eric Li, “Anti-Replay Window Protocols for Secure IP”, *Proceedings of the 9th IEEE International Conference on Computer Communications and Networks (ICCCN)*, Las Vegas, October 2000.

INVITED TALKS

1. Chin-Tser Huang, “Sufficient and Efficient Authentication for Wireless Communications,” presented at College of Computing, Georgia Institute of Technology, November 2005.
2. Chin-Tser Huang, Mohamed G. Gouda, E. N. Elnozahy, “Convergence of IPsec in Presence of Resets”, presented in Luminy Seminar on Self-Stabilization, Marseille, France, October 2002.
3. Mohamed G. Gouda, Chin-Tser Huang, “The Theorem of Convergence”, presented in Dagstuhl-Seminar 00431 on Self-Stabilization, Schloss Dagstuhl, Wadern, Germany, October 2000.