Kun Sun

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RESEARCH INTERESTS

Systems and Network Security. Specifically, Moving Target Defense, System security, Mobile security, Password Security.

EDUCATION

2001-2006	PhD., Department of Computer Science
	North Carolina State University, USA
1997-2000	M.E., Department of Computer and System Science
	Nankai University, Tianjin, China
1993-1997	B.S., Department of Computer and System Science
	Nankai University, Tianjin, China

EXPERIENCE

2016-Now	Associate Professor
	George Mason University
	Fairfax, VA, USA
2014-2016	Associate Professor
	College of William and Mary
	Williamsburg, VA, USA
2010-2014	Research Professor
	George Mason University
	Fairfax, VA, USA
2010-2014	Senior Research Scientist
	Intelligent Automation, Inc.
	Fairfax, VA, USA

PUBLICATIONS

1. Lingguang Lei, Yi He, Kun Sun, Jiwu Jing, Yuewu Wang, Qi Li, and Jian Weng. "Vulnerable Implicit Service: A Revisit". To appear in the 24nd ACM Conference on Computer and Communications Security (**CCS**), Dallas, Texas, October 30-November 3, 2017. (Acceptance ratio: 18%=151/836)

2. Yue Li, Haining Wang, and Kun Sun. "Personal Information in Passwords and Its Security Implications". In IEEE Transactions on Information Forensics and Security (**TIFS**), volume 12, issue 10, page 2320-2333, Oct. 2017.

3. Lingguang Lei, Jianhua Sun, Kun Sun, Chris Shenefiel, Rui Ma, Yuewu Wang, and Qi L,. "SPEAKER: Split-Phase Execution of Application Containers. " To appear in the 14th Conference on Detection of Intrusions and Malware & Vulnerability Assessment (**DIMVA**), Bonn, Germany, July 6-7. 2017. (Acceptance ratio: 26.86%=18/67)

4. Yacong Gu, Kun Sun, Purui Su, Qi Li, Yemian Lu, Lingyun Ying, and Denguo Feng. "JGRE: An Analysis of JNI Global Reference Exhaustion Vulnerabilities in Android ." To appear in the 47th Annual IEEE/IFIP International Conference on Dependable Systems and Networks (**DSN**), Denver, CO, June 26-29, 2017. (Acceptance ratio: 22.27%=49/220)

5. Luren Wang, Yue Li, and Kun Sun. "Amnesia: A Bilateral Generative Password Manager." To appear in the 36th IEEE International Conference on Distributed Computing Systems (**ICDCS**), Nara, Japan, June 27-30, 2016. (Acceptance ratio: 17.62%=68/386)

6. Ning Zhang, Kun Sun, Wenjing Lou, and Tom Hou. "CaSE: Cache-Assisted Secure Execution on ARM Processors." To appear in the 37th IEEE Symposium on Security and Privacy (**S&P**), SAN JOSE, CA, MAY 23-25, 2016. (Acceptance ratio: 13.75%=55/400)

7. Chong Guan, Kun Sun, Zhan Wang and Wen Tao Zhu. "Privacy Breach by Exploiting postMessage in HTML5: Identification, Evaluation, and Countermeasure." To appear in the 11th ACM Symposium on Information, Compute rand Communications Security (**ASIACCS**), Xi'an, China, May 30 - June 3, 2016. (Acceptance ratio: 20.9%=73/350 (full paper))

8. Yue Li, Haining Wang, and Kun Sun. "A Study of Personal Information in Human-chosen Passwords and Its Security Implications." To appear in IEEE International Conference on Computer Communications (**INFOCOM**), San Francisco, CA, April 10-15, 2016. (Acceptance ratio: 18.25%=300/1,644)

9. Jianhua Sun and Kun Sun. "DESIR: Decoy-Enhanced Seamless IP Randomization." To appear in IEEE International Conference on Computer Communications (**INFOCOM**), San Francisco, CA, April 10-15, 2016. (Acceptance ratio: 18.25%=300/1,644)

10. Ning Zhang, He Sun, Kun Sun, Wenjing Lou, and Thomas Hou. "CacheKit: Evading Memory Introspection Using Cache Incoherence". To appear in the 1st IEEE European Symposium on Security and Privacy (**EuroS&P**), Saarbrücken, GERMANY, on March 21-24, 2016. (Acceptance ratio: 17.26%=29/168)

11. Andrew Clark, Kun Sun, Linda Bushnell, and Radha Poovendran. "A Game-Theoretic Approach to IP Address Randomization in Decoy-Based Cyber Defense". In the Sixth Conference on Decision and Game Theory for Security (**GameSec**), London, UK, on November 4-5, 2015. (Acceptance ratio: 43.24%=16/37 (full papers))

12. He Sun, Kun Sun, Yuewu Wang, and Jiwu Jing. "Reliable and Trustworthy Memory Acquisition on Smartphones". In Information Forensics and Security, IEEE Transactions on (**TIFS**), vol.10, no.12, pp.2547-2561, Dec. 2015.

13. He Sun, Kun Sun, Yuewu Wang, and Jiwu Jing. "TrustOTP: Transforming Smartphones into Secure One-Time Password Tokens". In the 22nd ACM Conference on Computer and Communications Security (**CCS**), Denver, Colorado, October 12-16, 2015. (Acceptance ratio: 19.81%=128/646)

14. Xing Gao, Dachuan Liu, Haining Wang, and Kun Sun. "PmDroid: Permission Supervision for Android Advertising". In the 34th Symposium on Reliable Distributed Systems (**SRDS**), Montreal, Canada, September 28 - October 01, 2015. (Acceptance ratio: 29.63%=24/81 (regular papers))

15. He Sun, Kun Sun, Yuewu Wang, Jiwu Jing, and Haining Wang, "TrustICE: Hardware-assisted Isolated Computing Environments on Mobile Devices". In the 45th Annual IEEE/IFIP International Conference on Dependable Systems and Networks (**DSN**), Rio de Janeiro, Brazil, June 22-25, 2015. (Acceptance ratio: 21.83%=50/229)

16. Fengwei Zhang, Kevin Leach, Angelos Stavrou, HainingWang, and Kun Sun, "Using Hardware Features for Increased Debugging Transparency". In the 36th IEEE Symposium on Security and Privacy (**S&P**), Fairmont, San Jose, CA, May 18-20, 2015. (Acceptance ratio:13.51%=55/407)

17. Ning Zhang, Kun Sun,Wenjing Lou, Y. Thomas Hou and Sushil Jajodia. "Now You SeeMe: Hide and Seek in Physical Address Space". In the 10th ACM Symposium on Information, Compute rand Communications Security (**ASIACCS**), Singapore, April 14-17, 2015. (Acceptance ratio: 17.84%=48/269 (full paper))

18. Xueqiang Wang, Kun Sun, Yuewu Wang, and Jiwu Jing, "DeepDroid: Dynamically Enforcing Enterprise Policy on Android Devices". In the 22nd Annual Network & Distributed System Security Symposium (**NDSS**), San Diego, California, February 2015. (Acceptance ratio: 16.88%=51/302)

19. He Sun, Kun Sun, Yuewu Wang, Jiwi Jing, and Sushil Jajodia. "TrustDump: Reliable memory acquisition on smartphones" Proc. 18th European Symp. on Research in Computer Security (**ESORICS**), Springer Lecture Notes in Computer Science, Wroclaw, Poland, September 7-11, 2014. (Acceptance ratio: 24.78%=58/234)

20. Xingjie Yu, Zhan Wang, Kun Sun, Wen Tao Zhu, Neng Gao and Jiwu Jing, "Remotely Wiping Sensitive Data on Stolen Smartphones". In the 9th ACM Symposium on Information, Computer and Communications Security (**ASIACCS**), Kyoto, Japan, June 4-6, 2014. (Acceptance ratio: 19.60%=50/255 (short paper))

21. Fengwei Zhang, Jiang Wang, Kun Sun, and Angelos Stavrou, "HyperCheck: A Hardware-Assisted Integrity Monitor". In IEEE Transactions on Dependable and Secure Computing (**TDSC**), vol.11, no.4, pp.332,344, July-Aug. 2014.

22. Rui Zhao, Chuan Yue, and Kun Sun. "A Security Analysis of Two Commercial Browser and Cloud Based Password Managers". In proceedings of the 5th ASE/IEEE International Conference on Information Privacy, Security, Risk and Trust (**PASSAT**), 2013. (top 5% accepted paper)

23. Andrew W. Clark, Kun Sun, and Radha Poovendran, "Effectiveness of IP Address Randomization in Decoy-Based Moving Target Defense". In the 52nd IEEE Conference on Decision and Control (**CDC**), Florence, Italy, December 10-13, 2013.

24. Massimiliano Albanese, Alessandra De Benedictisy, Sushil Jajodia, and Kun Sun, "A Moving Target Defense Mechanism for MANETs Based on Identity Virtualization". In the First IEEE Conference on Communications and Network Security (**CNS**), Washington D.C., USA, October 14-16, 2013. (Acceptance ratio: 28.36%=40/141)

25. Zhan Wang, Kun Sun, Sushil Jajodia and Jiwu Jing, "TerraCheck: Verification of Dedicated Cloud Storage". In the 27th IFIP WG 11.3 Conference on Data and Applications Security and Privacy (**DBSEC**), Rutgers University, Newark, NJ, USA, July 15-17, 2013. (Acceptance ratio: 35.55%=16/45 (full paper))
26. Quan Jia, Kun Sun, and Angelos Stavrou, "MOTAG: Moving Target Defense Against Internet Denial of Service Attacks". In the International Conference on Computer Communications and Networks (**ICCCN**), Nassau, Bahamas, 2013. (Acceptance ratio: 28.66%=86/300 (regular paper))
27. Fengwei Zhang, Kevin Leach, Kun Sun, and Angelos Stavrou, "Spectre: A Dependable Introspection Framework via System Management Mode". In the 43nd Annual IEEE/IFIP International Conference on Dependable Systems and Networks (**DSN**), Budapest, June 2013. (Acceptance ratio: 20.90%=46/220)
28. Xiaowei Mei, Donggang Liu, Kun Sun, and Dingbang Xu, "On Feasibility of Fingerprinting Wireless Sensor Nodes Using Physical Properties". In the 27th IEEE International Parallel & Distributed Processing Symposium (**IPDPS**), Boston, Massachusetts, May 2013. (Acceptance ratio: 21.45%=106/494)
29. Brian Schulte, Haris Andrianakis, Kun Sun, and Angelos Stavrou, "NetGator: Malware Detection Using Program Interactive Challenges". In the 9th Conference on Detection of Intrusions and Malware & Vulnerability Assessment (**DIMVA**), Heraklion, Crete, Greece, July 26-27th, 2012. (Acceptance ratio: 31.81%=14/44)
30. Jiang Wang, Kun Sun, and Angelos Stavrou, "A Dependability Analysis of Hardware-Assisted Polling Integrity Checking Systems". In the Proceedings of the 42nd Annual IEEE/IFIP International Conference on Dependable Systems and Networks (**DSN**), Boston, Massachusetts, June, 2012. (Acceptance ratio: 21.61%=51/236)
31. Kun Sun, Jiang Wang, Fengwei Zhang, and Angelos Stavrou, "SecureSwitch: BIOS-Assisted Isolation and Switch between Trusted and Untrusted Commodity OSes". In the Proceedings of the 19th Annual Network & Distributed System Security Symposium (**NDSS**), San Diego, California, 5-8 February 2012. (Acceptance ratio: 17.82%=46/258)

32. Kun Sun, Peng Ning, Cliff Wang, An Liu, and Yuzheng Zhou, "TinySeRSync: Secure and Resilient Time Synchronization in Wireless Sensor Networks". In Proceedings of the 13th ACM Conference on Computer and Communications Security (**CCS**), Alexandria, VA, November 2006. (Acceptance ratio: 14.84%=38/256)
33. Kun Sun, Cliff Wang, and Peng Ning, "Secure and Resilient Clock Synchronization in Wireless Sensor Networks". In Cliff Wang, Radha Poovendran, Sumit Roy (Eds), WSN Localization and Time Synchronization, 2006.
34. Kun Sun, Peng Ning, and Cliff Wang, "Secure and Resilient Clock Synchronization in Wireless Sensor Networks". In IEEE Journal on Selected Areas in Communications (**JSAC**), Vol. 24, No. 2, February, 2006.
35. Kun Sun, Pai Peng, Peng Ning, Cliff Wang, "Secure Distributed Cluster Formation in Wireless Sensor Networks". In The 22nd Annual Computer Security Applications Conference (**ACSAC**),Miami Beach, FL, December 2006. (Acceptance ratio: 30.30%=40/132)
36. Peng Ning, Kun Sun, "How to Misuse AODV: A Case Study of Insider Attacks against Mobile Ad-hoc Routing Protocols". in Elsevier Ad Hoc Networks Journal, Vol. 3, No. 6, pages 795-819, November 2005.
37. Kun Sun, Peng Ning, and Cliff Wang, "Fault-Tolerant Cluster-Wise Clock Synchronization for Wireless Sensor Networks". In IEEE Transactions on

Dependable and Secure Computing (**TDSC**), Vol. 2, No. 3, pages 177-189, July-September 2005.

38. Peng Ning, Kun Sun, "How to Misuse AODV: A Case Study of Insider Attacks against Mobile Ad-hoc Routing Protocols". The 4th Annual IEEE Information Assurance Workshop, pages 60-67, West Point, June 2003, *Best Paper Award*

39. Donggang Liu, Peng Ning, Kun Sun, "Efficient Self-Healing Group Key Distribution with Revocation Capability". The 10th ACM Conference on Computer and Communications Security (**CCS**), pages 231-240, Washington D.C., October 2003. (Acceptance ratio: 13.83%=35/253)

PROFESSIONAL ACTIVITIES

1. TPC Member: DAC 2017, DSN 2017, INFOCOM 2016/2017/2018, SecureComm 2016/2017, CCS 2015/2016/2017, CNS 2014/2016/2017, ICCCN 2015/2016, ICC 2015/2016/2017, MTD 2015/2016/2017.

2. TPC Co-Chair: First ACM Workshop on Moving Target Defense (MTD 2014), in conjunction with ACM CCS 2014.

3. Journal Editorial Board Member: International Journal of Security and Networks (IJSN).