Wanyu Zang

A. EDUCATION

Ph.D.	Computer Science	Nanjing University, China	December 2001
M.S	Computer Science	Northeastern University, China	May 1998
B. S	Computer Science	Northeastern University, China	July 1995

B. EMPLOYMENT HISTORY

VISITING PROFESSOR, ROOSEVELT UNIVERSITY	2018 FALL
ASSISTANT PROFESSOR, Texas A&M University – San Antonio	2015-2018
ASSISTANT PROFESSOR, Virginia Commonwealth University	2012- 2015
ASSISTANT PROFESSOR (NON TR), Virginia Commonwealth University	2010- 2012
ASSISTANT PROFESSOR, Western Illinois University	2008- 2011
ASSISTANT PROFESSOR (NON TENTURE TRACK), Western Illinois University	2007- 2008
VISITING RESEARCH PROFESSOR, MONMOUTH UNIVERSITY	2006-2007
POSTDOC RESEARCH SCIENTIST, PENN STATE UNIVERSITY	2002 - 2004
GRADUATE RESEARCH ASSISTANT, Nanjing University	2000-2001
GRADUATE RESEARCH ASSISTANT, Northeastern University	1995-1998

C. TEACHING AWARDS

Department Awards for Teaching Excellence, $1800 in 2013
Department Awards for Teaching Excellence, $1900 in 2014

D. SCHOLARLY ACTIVITIES

RESEARCH GRANTS

- PI at TAMUSA. Moving Target Defense Through Dynamic Virtual Machine Placement in Clouds. 2015-2018. ARO, $147K.
- Co-PI, TWC: Small: Collaborative: Towards Agile and Privacy-Preserving Cloud Computing. October 2014 - September 2017. NSF $250K. 2014-2017. Award number: 1422355.
- Investigator (with Dr. Wei Cheng, at Virginia Commonwealth University), TWC: Type1: A Pilot Study on Cognitive Acoustic Underwater Networks (CAUNet) for Sustainable Ocean Monitoring & Exploration. Sep. 2013 - Sep. 2015. NSF, Award Number: 1441253
- Investigator (with Dr. Wei Cheng, at Virginia Commonwealth University), EAGER: Collaborative Research: Time Critical Localization in Mobile Networks. Sep. 2013 - Aug. 2015. NSF, Award Number: 1441990
- Co-PI. NeTS: Small: Collaborative Research: Secure and Resilient Channel Allocation in Multi-Radio Wireless Networks. $300K total. ($90K to WIU). Sep. 2009 - Aug. 2012. NSF, Award number: 0916000

PUBLICATIONS

PEER REVIEWED JOURNALS:

1. Jin Han, Wanyu Zang, Li Liu, Songqing Chen, Meng Yu. "Risk-aware Multi-Objectives Optimized Virtual Machine Placement in Cloud." Journal of Computer Security, Accepted, 2018.
2. Bin Wang, Xiaochun Yang, Guoren Wang, Ge Yu, Wanyu Zang, Meng Yu. "Energy Efficient Approximate Self-Adaptive Data Collection in Wireless Sensor Networks" Frontiers of Computer Science,volume 10, issue 5, page 936-950, October 2016.
3. David S Jackson, Wanyu Zang, Qijun Gu, Meng Yu. "Robust Detection of Rogue Signals in Cooperative Spectrum Sensing" Journal of Internet Service and Information Security (JISIS), Vol. 5, No. 2, 2015.
4. David S Jackson, Wanyu Zang, Qijun Gu, Wei Cheng and Meng Yu. "Exploiting and Defending Trust Models in Cooperative Spectrum Sensing." EURASIP Journal on Wireless Communications and Networking (Section: SI: Dynamic Spectrum Access for Throughput, Delay & Fairness Enhancement In Cognitive Radio Networks. 4(2015).
5. Xiangyu Liu, Bin Wang, Xiaochun Yang, Meng Yu and Wanyu Zang. "Obtaining K-Obfuscation for Profile Privacy in Social Networks." Special issue of Security and Communication Networks (Wiley), 1384-1398(2014).
6. Chengpo Mu, Meng Yu, Yingjiu Li, Wanyu Zang. "Risk balance defense approach against intrusions for network server." International Journal of Information Security. 255-269(2014).
7. Yan Yang, Yulong Zhang, Alex Hai Wang, Meng Yu, Wanyu Zang, Peng Liu, Sushil Jajodia, "Quantita- tive survivability evaluation of three virtual machine-based server architectures." Journal of Network and Computer Applications. Volume 36, Issue 2, March 2013, Pages 781–790
8. Meng Yu, Wanyu Zang, and Peng Liu. Recovery of data integrity under multi-tier architectures. *IET Information Security*, 4(4): 344–351, 2010.
9. Meng Yu, Peng Liu, and Wanyu Zang. The implementation and evaluation of a recovery system for workflows. *Journal of Network and Computer Applications*, 32:158–183, January 2009.
10. Wanyu Zang, Peng Liu, and Meng Yu. How resilient is the Internet against ddos attacks? — a game theoretic analysis of signature-based rate limiting. *The International Journal of Intelligent Control and Systems*, 12(4): 307–316, December 2007.
11. Wanyu Zang, Meng Yu, and Peng Liu. A distributed algorithm for workflow recovery. International Journal on Intelligent Control and Systems, 12(1):56–62, March 2007.
12. Peng Liu, Wanyu Zang, and Meng Yu. Incentive-based modeling and inference of attacker intent, objectives, and strategies. *ACM Transaction on Information System Security*, 8:78–118, February 2005.
13. Meng Yu, Peng Liu, and Wanyu Zang. Specifying and using intrusion masking models to process distributed operations. *Journal of Computer Security*, 13:623–658, July 2005.
14. Meng Yu, Wanyu Zang, and Li Xie. Parallelism analysis based on generalized method invocation model. *Journal of Computer, China*, (4): 403–408, April 2002.
15. Meng Yu, Wanyu Zang, and Li Xie. Method invocation localizaing optimization in

parallelizaing object-oriented languages. *Journal of Computers, China*, (4): 409–416, April 2002.

16. Wanyu Zang, Meng Yu, and Li Xie. An optimized routing protocol for ad-hoc mobile network with unidirectional links (ouaor). *Journal of Computers, China*, (10): 1030–1037, 2002.
17. Wanyu Zang, Meng Yu, and Li Xie. A survey of on-demand routing protocols for ad-hoc mobile networks. *Journal of Computers, China*, (10): 1009–1017, 2002.
18. Meng Yu, Wanyu Zang, Li Xie, and Minyi Guo. A survey of parallel object-oriented languages. *Journal of Software, China*, 12(6): 822–829, 2001.
19. Wanyu Zang, Meng Yu, and Li Xie. A routing protocol for ad-hoc mobile network with unidirectional links (uaor). *Journal of Computers, China*, (10): 1030–1037, 2001.
20. Wanyu Zang, Meng Yu, and Li Xie. Stable cluster based hybrid routing protocol for ad-hoc mobile networks. *Journal of Computers, China*, (12): 1262–1271, 2001.

PEER REVIEWED CONFERENCE PROCEEDINGS:

21. Li Liu, An Wang, Wanyu Zang, Meng Yu, Mengbai Xiao and Songqing Chen. "Shuffler: Mitigate Cross-VM Side-channel Attacks via Hypervisor Scheduling". The 2018 International Conference on Security and Privacy in Communication Networks (SECURECOMM).
22. Li Liu, An Wang, Wanyu Zang, Meng Yu, Songqing Chen. “Empirical Evaluation of the Hypervisor Scheduling on Side Channel Attacks.” In IEEE ICC 2018 Communication and Information Systems Security Symposium.
23. Jin Han, Wanyu Zang, Songqing Chen, Meng Yu. “Reducing Security Risks of Clouds through Virtual Machine Placement”, in DBSEC, July 272-292, 2017.
24. Naiwei liu, Meng Yu, Wanyu Zang. “Side-channel attacks and defense on ARM and X86 architectures”by, Poster, in ACSAC, December 2016.
25. Zili Zha, Min Li, Wanyu Zang, Meng Yu, Songqing Chen. “AppGuard: A Hardware Virtualization Based Approach on Protecting User Applications from Untrusted Commodity Operating System.” In 2015 International Conference on Computing, Networking and Communications. February 685-689, 2015. Anaheim, California, USA.
26. Min Li, Zili Zha, Wanyu Zang, Meng Yu, Peng Liu, Kun Bai. “Detangling Resource Management Functions from the TCB in Privacy-Preserving Virtualization.” In The 19th European Symposium on Research in Computer Security (ESORICS 2014). September 7-11, 2014, Wroclaw, Poland. Acceptance rate: 20%.
27. Bin Wang, Xiaochun Yang, Wanyu Zang and Meng Yu. “Approximate Self-Adaptive Data Collection in Wireless Sensor Networks.” In The 9th International Conference on Wireless Algorithms, Systems, and Applications (WASA 2014). June 23-25, 2014, Harbin, China.
28. Min Li, Wanyu Zang, Kun Bai, Meng Yu, Peng Liu. MyCloud -- Supporting User-Configured Privacy Protection in Cloud Computing. In *Annual Computer Security Applications Conference*. New Orleans, Louisiana USA, December 2013. Acceptance rate: 19%.
29. Qijun Gu, Kyle Jones, Wanyu Zang, Meng Yu and Peng Liu. Revealing Abuses of Channel Assignment Protocols in Multi-Channel Wireless Networks: An Investigation

Logic Approach. In *the 17th European Symposium on Research in Computer Security (ESORICS 2012)*. Acceptance rate: 20%.

30. Min Li, Yulong Zhang, Kun Bai, Wanyu Zang, Meng Yu, Xubin He. Improving Cloud Survivability through Dependency based Virtual Machine Placement (short paper). In *the International Conference on Security and Cryptography (SECRYPT'12)*, Rome,Italy, 24-27 July 2012.
31. Qijun Gu, Wanyu Zang, Meng Yu, and Peng Liu. Collaborative Traffic-aware Intrusion Monitoring in Multi-channel Mesh Networks. In *the 11th IEEE International Conference on Trust, Security and Privacy in Computing and Communications (TrustCom-2012)*, Liverpool, UK, 25-27 June 2012.
32. Yulong Zhang, Min Li, Kun Bai, Meng Yu, and Wanyu Zang. Incentive Compatible Moving Target Defense against VM-Colocation Attacks in Clouds. In *IFIP International Information Security and Privacy Conference 2012*, Heraklion, Crete, Greece, 4-6 June 2012. Acceptance rate: 25%.
33. Qijun Gu, Meng Yu, Wanyu Zang, and Peng Liu. Lightweight attacks against channel assignment protocols in mimc wireless networks. In *IEEE ICC, Communication and Information System Security Symposium*, Kyoto, Japan, 5-9 June 2011.
34. Heywoong Kim, Qijun Gu, Meng Yu, Wangyu Zang, and Peng Liu. A simulation framework for performance analysis of multi-interface and multi-channel wireless networks in inet/omnet++. In *Proceedings of the 2010 Spring Simulation Multiconference*, SpringSim '10, pages 101:1–101:8, New York, NY, USA, 2010. ACM.
35. Meng Yu, Alex Hai Wang, Wanyu Zang, and Peng Liu. Evaluating survivability and costs of three virtual machine based server architectures. In *Internatinoal Conference on Security and Cryptography*, pages 478–485, 2010.
36. Wanyu Zang, Qijun Gu, Meng Yu, and Peng Liu. An attack-resilient channel assignment mac protocol. In *Proceedings of the 2009 International Conference on Network-Based Information Systems*, NBIS '09, pages 246–253, Indianapolis, Indiana. USA, 2009. IEEE Computer Society. Acceptance rate: 37%.
37. Meng Yu, Wanyu Zang, and Peng Liu. Database isolation and filtering against data corruption attacks. In *Annual Computer Security Applications Conference*, pages 97–106, Miami, Florida, December 2007. Acceptance rate: 22%.
38. Meng Yu, Wanyu Zang, and Barbara Reagor. Decentralized trust management based on the reputation of information sources. In *IEEE International Conference on Networking, Sensing and Control (ICNSC'2007)*, pages 212–217, 2007.
39. Wanyu Zang and Meng Yu. A dead-lock free self-healing algorithm for distributed transactional processes. In *International Conference on Information systems security (ICISS'06)*, pages 289–302, December 2006. Acceptance rate: 30%.
40. Meng Yu, Wanyu Zang, and Peng Liu. Defensive execution of transactional processes against attacks. In *Annual Computer Security Applications Conference (ACSAC'05)*, pages 515–526, Tucson, Arizona, USA, December 2005. Acceptance rate: 19.6%.
41. Meng Yu, Wanyu Zang, Peng Liu, and Jiacun Wang. The architecture of an automatic distributed recovery system. In *IEEE International Conference on Networking, Sensing and Control*, pages 999–1004, Tucson, Arizona, 2005.
42. Meng Yu, Peng Liu, and Wanyu Zang. Self-healing workflow systems under attacks. In *24th International Conference on Distributed Computing Systems (ICDCS'04)*, pages 418 – 425, 2004. Acceptance rate: 17.68%.

43. Meng Yu, Peng Liu, and Wanyu Zang. Intrusion masking for distributed atomic operations. In *The 18th IFIP International Information Security Conference*, pages 229–240, Athens Chamber of Commerce and Industry, Greece, 26-28 May 2003. IFIP Technical Committee 11, Kluwer Academic Publishers. Acceptance rate: 27%.
44. Peng Liu, Wanyu Zang. Incentive-based modeling and inference of attacker intent, objectives, and strategies. ACM Conference on Computer and Communications Security 2003: 179-189
45. Meng Yu, Peng Liu, and Wanyu Zang. Multi-version based attack recovery of workflow. In *The 19th Annual Computer Security Applications Conference (ACSAC'03)*, pages 142–151, Las Vegas, Nevada, December 2003. Acceptance rate: 30%.
46. Meng Yu, Minyi Guo, Yi Pan, Wanyu Zang, and Li Xie. Japs-ii: A source to source parallelizing compiler for java. In *Proceedings of the International Conference on Parallel and Distributed Processing Techniques and Applications - Volume 1*, PDPTA '02, pages 164–170. CSREA Press, 2002. Acceptance rate: 30%.

STUDENT ADVISING

- 2017, 2018: Jerry Stanley. Research assistant student. Supported by ARO research grant.
- 2016: Sara Ballard. Research assistant student. Supported by ARO research grant
- 2015 Fall: Carl Faulkner, Karim EI Marharri and Armando Flores. Research assistant students. Supported by ARO research grant
- 2011-2015 David Jackson, Ph.D. Virginia Commonwealth University, Co-advisor. Now at Fireeye.
- 2013-2015 Zhili Zha, Ph.D. Candidate. Virginia Commonwealth University, advisor. Now at George Mason University.

I served the following Ph.D. advisory committees, not as the advisor.

- Sardar Ansari, Motion Artifact Reduction in Impedance Plethysmography Signal. June, 2013
- Xuguang Qi, Image analysis of corrosion growth rate of Aluminium and Steel. May, 2013.
- Matt Loach, Studies of performance and predictability of cache locking. May, 2013
- Min Li, Cloud privacy protection. May 2014.

E. SERVICE

SERVICE TO UNIVERSITY

AT TAMU-SA:

Faculty Senate, 2017 - 2018
Chair of Department Faculty Search Committee, 2015-2016 (2 terms)
Department Chair Search Committee, 2016- 2017
School Faculty Qualification Committee, 2015- 2018
University Evaluation and Merit Committee, 2016 - 2018

Academic Planning Committee, 2016 - 2018

AT Virginia Commonwealth University

Department Undergraduate Curriculum Committee, 2010-2015
Department Faculty Search Committee, 2012-2013
University Undergraduate Curriculum Committee, 2011-2014

AT Western Illinois University

Department Undergraduate Curriculum Committee, 2008-2010
Department Faculty Search Committee, 2008-2010 S
Department Service Course Committee, 2009-2010
School Faculty Award Committee, College of Business & Technology, 2009

SERVICE TO PROFESSION

NSF Panelist:

- 2017 NSF Secure and Trustworthy Cyberspace (SaTC) panelist
- 2016 NSF Secure and Trustworthy Cyberspace (SaTC) panelist

Conference and workshop organization

- 2011 Local Arrangement Chair, 25th Annual WG 11.3 Conference on Data and Applications Security and Privacy (DBSec'11), Richmond, 2011

- 2009 PC Co-Chair, International Workshop on Security in Emerging Wireless Communication and Networking Systems 2009 (SEWCN09)

TPC or Reviewer of Conferences or Journals

- IEEE Transactions on Systems, Man and Cybernetics (TSMC), International Journal of Intelligent and Control Systems Computer and Security, IEE Proc. Information Security, Journal of Computer and Security
- WTS 2018, WTS 2017, WTS2016, ICCME2016, ICACCI2016, WTS2015, ICCME2015, ICACCI2015, SPICES2015, ICACCI2014, WTS2014, ES- ORICS 2014, DBSEC 2014, DBSEC 2013, DBSEC2012, ICCCN 2011, DBSec 2011, DBSec 2010, ARES 2008, SSN 2008, IEEE ICNSC 2008, ACSAC'04, ACSAC'05, ITCC'05, Globecom'05, SecureComm'05, ESORICS'05, ICNSC'05, ICNSC'06, Se- cUbiq'05 ITCC'05, CCS'02, CCS'03, SEC'04, DBSec'03

SERVICE TO COMMUNITY

High school programing competition at VCU (2011 – 2015 S)
Southwest Regional Collegiate Cyber Defense Competition at TAMU-SA (2016S)