Jianhua Yang *Ph.D.*
Professor
TSYS School of Computer Science, Columbus State University

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RESEARCH INTERESTS: Computer, Networking and Information Security; Digital topology and image processing

EDUCATION

Ph.D. in Computer Science, 2006, University of Houston, Houston, Texas, USA

M.S. in Computer Engineering, 1990, Shandong University, Jinan, Shandong, China

B.S. in Electronic Engineering, 1987, Shandong University, Jinan, Shandong, China

WORKING EXPERIENCE

1. **08/2015-Present**   Full Professor, TSYS School of Computer Science, Columbus State University, GA, USA
2. **08/2013-07/2015**   Tenured Associate Professor, TSYS School of Computer Science, Columbus State University, GA, USA
3. **08/2009—07/2013**   Tenure-Track Associate Professor, TSYS School of Computer Science, Columbus State University, GA, USA
4. **08/2008—07/2009**   Tenure-track Assistant Professor, Math & Computer Science Department, University of Maryland Eastern Shore, MD, USA
5. **08/2006— 08/2008**   Tenure-track Assistant Professor, Math & Computer Science Department, Bennett College, NC, USA
6. **01/2002— 08/2006**   System Administrator, Teaching Assistant, Research Assistant (Part time) of Computer Science Department, University of Houston, TX, USA
7. **09/1990— 12/2001** Assistant, Associate Professor, Computer Science, Beijing Institute of Petrochemical Technology, Beijing, China

SERVICES

1. Serve as the member of Technical Program Committee of IEEE MWSN2013
2. Reviewer for Journal of Telecommunication System
3. Reviewer for Journal of Universal Computer Science
4. Reviewer for the Journal of Computers & Security
5. Reviewer for *IEEE* Transactions on Signal Processing.
6. Reviewer for *IEEE* International Conference on Computer Networks and Mobile Computing, 2005
7. Reviewer for Journal of Systemics, Cybernetics and Informatics
8. Served as Network Security Session Co-Chair of International Conference on Computing, Communications and Control Technologies, 2005
9. Served as Privacy and Security Session Chair of 24th IEEE Conference on Advanced Information Networking and Applications, 2010
10. Reviewer for Computer Journal, Oxford Journal.

PUBLICATIONS in Recent Five Years

Peer-Review Web Publication

1. **Jianhua Yang,** Lixin Wang, Aurelia Smith, "Stepping-stone Intrusion Detection Curriculum and Hands-on Lab design", Clark site, NSA, published officially at September 1st, 2018.

Refereed Journal Papers/Book Chapters

1. **JianhuaYang**, Lixin Wang, "Explore Utilizing Network Traffic Distribution to Detect Stepping-Stone Intrusion", Journal of Electronics, Vol. 13(16), 3258, pp. 1-15, June 2024. https://doi.org/10.3390/electronics13163258. Q2 Journal.
2. Lixin Wang, **Jianhua Yang**, "Most Recent Advances in Stepping-stone Intrusion", Contemporary Perspective of Science, Technology and Research, Book Chapter, Vol. 7, pp. 147-162, March 2024.
3. Lixin Wang, **Jianhua Yang**, and Maochang Qin, "Analyzing Distribution of Packet Round-Trip Times using Fast Fourier Transformation", Journal of Wireless Mobile Networks, Ubiquitous Computing, and Dependable Applications, Accepted in August, 2023 and to be published in October 2023. This is a ranked Q2 journal.
4. Lixin Wang, **Jianhua Yang,** Jae Kim, and Peng-Jun Wan, "An Effective Approach for Stepping-stone Intrusion Detection Resistant to Intruders' Chaff-Perturbation via Packet Crossover", Journal of Electronics, Vol. 12(3885), pp. 1-12, September 2023. This is a ranked Q2 journal. https://doi.org/10.3390/electronics12183855.
5. D. An, H. Xi, **J. Yang**, H. Zhang, "Editorial: Future electricity System Based on Energy Internet: Energy storage system design, Optimal Scheduling, Security, Attack Model and Countermeasures", Frontiers in Energy Research, Vol. 11, 2023. Doi:10.3389/fenrg.2023.1261340. This is a Ranked Q2 Journal.
6. **Jianhua Yang**, Lixin Wang, Maochang Qin, Noah Neundorfer, "Detecting Stepping-stone Intrusion and Resisting Intruders' Manipulation via Cross-Matching Network Traffic and Random Walk", Journal of Electronics (Special Issue): Advanced Future Communication Techniques and Security Solutions for 6G and Internet of Things, Vol. 12(2), No. 394, pp. 1-19, January 2023. This is a Ranked Q2 journal. https://doi.org/10.3390/electronics12020394.
7. **Jianhua Yang**, Noah Neundorfer, Lixin Wang, "Modeling Network Traffic Via Identifying Encrypted Packets to Detect Stepping-stone Intrusion under the Framework of Heterogonous Packet Encryption", Journal of Internet Service and Information Security, Vol. 12, No. 4, pp. 56-73, November 2022. This is a Ranked Q3 journal. Paper in PDF
8. **Jianhua Yang**, Lixin Wang, Austin Lee, and Peng-Jun Wan, "Stepping-Stone Intrusion Detection via Estimating Numbers of Upstream and Downstream Connections using Packet Crossover", Journal of Wireless Mobile Networks, Ubiquitous Computing, and Dependable Applications, Vol. 13, No. 4, pp. 24-39, December 2022. Ranked Q2 journal. DOI: 10.58346/JOWUA.2022.I4.002
9. Lixin Wang, **Jianhua Yang**, Austin Lee, Peng-Jun Wan, "Matching TCP Packets to Detect Stepping-stone Intrusion Using Packet Crossover", Advances in Science, Technology and Engineering Systems Journal, Vol. 6, No. 6, pp. 13-19, November 2022.
10. **Jianhua Yang**, Lixin Wang, Suhev Shakya, "Modelling Network Traffic and Exploiting Encrypted Packets to Detect Stepping-stone Intrusions", Journal of Internet Service and Information Security, Vol. 12, No. 1, pp. 20-25, March 2022. This is a Ranked Q3 journal.
11. Lixin Wang, **Jianhua Yang**, "A Review of Recent Progress in Stepping-stone Intrusion Detection", ACTA Scientific Computer Sciences, Vol. 4, No. 1, Jan. 2022, pp. 46-53. (peer-reviewed).
12. **Jianhua Yang**, Lixin Wang, "Applying MMD Data Mining to Match Network Traffic for Stepping-Stone Intrusion Detection", New Trends in Smart Sensor Networks, Smart Computing, and Network Security, Sensors 2021, 21(22), 7464; https://doi.org/10.3390/s21227464 (registering DOI) - 10 Nov 2021. This is a Ranked Q2 journal.
13. **Jianhua Yang**, Lixin Wang, Yien Wang, "Enhance Student Learning Experience in Cybersecurity Education by Designing Hands-on Labs on Stepping-stone Intrusion Detection", Advances in Science, Technology and Engineering Systems Journal, Vol 6, No. 4, pp: 355-367 (August, 2021). This is a ranked Q3 journal.
14. Lixin Wang, **Jianhua Yang,** Michael Workman, and Peng-Jun Wan, "A Framework to Test Resistance of Detection Algorithms for Stepping-Stone Intrusion on Time-Jittering Manipulation", Journal of Wireless Communications and Mobile Computing, Volume 2021, Article ID 1807509, 8 pages. Ranked a Q2 journal. DOI: https://doi.org/10.1155/2021/1807509.
15. L. Wang, **J. Yang,** Michael Workman, "Effective Algorithms to Detect Stepping-stone Intrusion by Removing Outliers of Packet RTTs", accepted for publication in Journal of Tsinghua Science and Technology (Ranked Q1 Journal), May, 2021

16. Lixin Wang, **Jianhua Yang**, Sean Gill, Xiaohua Xu, "Data Aggregation, Gathering and Gossiping in Duty-Cycled Multihop Wireless Sensor Networks subject to Physical Interference", Advances in Science, Technology and Engineering Systems Journal, Submission date: June 2020. Accepted on Jan. 15, 2021. This is a ranked Q3 journal.

17. Lixin Wang, **Jianhua Yang**, Xiaohua Xu, Peng-Jun Wan, "Mining Network Traffic with the k-means Clustering Algorithm for Stepping-stone Intrusion Detection", submitted to Journal of Wireless communications and Mobile Computing on March, 2021, pp. 1-9. ranked Q2 Journal.

18. **Jianhua Yang**, "Stepping-stone Intrusion Detection and its Integration into Cybersecurity Curriculum", Innovations in Cybersecurity Education, Springer International Publishing, ISBN 978-3-030-50244-7, pp 259-283, Nov. 2020. DOI: 10.1007/978-3-030-50244-7

19. L. Wang, **J. Yang**, and P.-J. Wan: "Educational Modules and Research Surveys on Critical Cybersecurity Topics", the International Journal of Distributed Sensor Networks (ranked Q3, 2018 / 2019 Impact Factor 1.687), Vol. 16(9), Sep. 2020

20. Lixin Wang, **Jianhua Yang**, "A Research Survey in Stepping-stone Intrusion Detection", Journal on Wireless Communications and Networking, Springer, pp 1-15, 2018: 276, Dec. 2018.

21. **Jianhua Yang**, Lixin Wang, Brian Lockerbie, Andrew Lesh, "Manipulating network traffic to evade stepping-stone intrusion detection", Internet of Things, Elsevier, Vol. 3-4, pp 34-45, Oct. 2018.

22. **Jianhua Yang**, Yien Wang, "Denial of Service Hands-on Lab for Information Assurance Education: a Case Study", Information Security Education Journal, Vol. 2, No. 2, pp 68-75, January 2016

23. **Jianhua Yang**, Thomas Reddington, "Enhance Learning through Developing Network Security Hands-on Lab for Online Students", Information Security Education Journal, Vol. 2, No. 1, pp 19-27, June 2015

24. Yongzhong Zhang, Yuanyi Qi, Lamei Wang, **Jianhua Yang**, "The Study of Fluid Learning Styles under Open Education", International Journal of Education and Social Science, Vol.2, Issue 1, pp 82-91, January 2015.

25. **Jianhua Yang**, Xiaozhu Lin, David Woolbright, Wayne Summers, "A New Technique for Counting Objects in Binary Images", *Journal of Computer Vision and Image Processing,* Vol. 3, No. 4, pp 1-14, 2013.

26. Xiaozhu Lin, **Jianhua Yang**, Wayne Summers, David Woolbright, "Hold Holes Countable in Binary Images", *Journal of Computer Vision and Image Processing,* Vol. 3, No. 1, pp 44-55, 2013.

27. Yongzhong Zhang, Yuanxi Qi, **Jianhua Yang**, "Online Course Design in the Context of Cloud Computing", Advances in Intelligent and Soft Computing (book), 2012, Volume 108/2012, Springer, pp. 193-200. DOI: 10.1007/978-3-642-24775-0_31

28. **Jianhua Yang**, David Woodbright, "Correlating TCP/IP Packet Contexts to Detect Stepping-Stone Intrusion", Journal of Computers and Security, Elsevier Ltd., Vol. 30, No. 6-7, pp 538-546, August 2011.

29. Lydia Ray**, Jianhua Yang**, "Beyond the Security Track: Embed Security Education across Undergraduate Computing Curricula Using M-Thread Approach", International Journal of Computer Science and Network Security, Vol. 11, No. 8, pp 131-137, August 2011.

30. **Jianhua Yang**, Guoqing Zhao, Stephen S. –H. Huang, "Analyzing and Correlating Interactive Sessions with One-Dimensional Random Walk to Detect Stepping-Stone Intrusion ", Transactions on Computers and Intelligent Systems, pp 78-85, Vol. 1 No. 2 2009, ISBN 1798-2448.

31. Yongzhong Zhang**, Jianhua Yang**, Chunming Ye, "Modeling and Detecting Stepping-Stone Intrusion", International Journal of Computer Science and Network Security, Vol. 9, No. 7, pp 200-205, July 2009.

32. **Jianhua Yang**, Stephen Huang, "Mining TCP/IP Packets to Detect Stepping-Stone Intrusion", Journal of Computers and Security, Elsevier Ltd., pp 479-484, Vol. 26 (2007).

33. **Jianhua Yang**, Stephen Huang, "Probabilistic Analysis of an Algorithm to Compute TCP Packet Round-Trip Time for Intrusion Detection", Journal of Computers and Security, Elsevier Ltd., pp 137-144, Vol. 26 (2007).

34. **Jianhua Yang**, Stephen Huang, "Matching TCP/IP Packets to Detect Stepping-Stone Intrusion",

International Journal of Computer Science and Network Security, Vol. 6, No. 4,pp 269-276, October 2006.

35. **Jianhua Yang**, Stephen Huang, "Correlating Temporal Thumbprint for Tracing Intruders", International Journal of Systematics, Cybernetics, and Informatics, Vol. 4, No. 4, September, 2006.

Refereed Conference Papers

36. L. Wang, **J. Yang**, and A. Lee. An Effective Approach for Stepping-Stone Intrusion Detection Using Packet Crossover. In *Proc. of the 23rd World Conference on Information Security Applications (WISA2022)*, August 2022.

37. Noah Neundorfer, **Jianhua Yang**, Lixin Wang, "Modelling Network Traffic via Identifying Encrypted Packets to Detect Stepping-stone Intrusion under the Framework of Heterogonous Packet Encryption", In the proceedings of 36th International Conference on Advanced Information Networking and Applications, Sydney, Australia, pages 516-527, Volume 450, April, 2022.

38. **J. Yang**, L. Wang, Suhev Shakya, Michael Workman, "Identify Encrypted Packets to Detect Stepping-stone Intrusion", AINA 2021, LNCS 226, pp. 536-547, Springer Nature Switzerland, 2021. DoI: https://doi.org/10.1007/978-3-030-75075-6_43

39. L. Wang, **J. Yang**, M. Mccormick, P.-J. Wan, X. Xu: Detect Stepping-stone Intrusion by Mining Network Traffic using k-Means Clustering, the 39th IEEE International Performance Computing and Communications Conference (IEEE IPCCC 2020), November 2020.

40. James Robertson, **JianhuaYang**, W.Scott Gunter, Perter, Thomas Wingate, Anthony Obando "Educational Microclimate Mesonet System Design", the Proceedings of 34th International Conference on Advanced Information Networking and Applications, Caserta, Italy, published in Lecture Notes in Computer Science, Springer, pp. 24-33, April, 2020

41. Yuanyi Qi, **Jianhua Yang,** Yongzhong Zhang "Blended Learning Course Design from the Perspective of Learning Powered by Technology – A Case Study on Computer Networking", the Proceedings of 34th International Conference on Advanced Information Networking and Applications, Caserta, Italy, published in Lecture Notes in Computer Science, Springer, pp. 980-993, April, 2020

42. L Wang, **J. Yang,** H. Liang, and P.-J. Wan, "Minimum-Latency Data Gathering Scheduling in Multi-Channel Wireless Sensor Networks Using Only *Secure* Links", *the15th IEEE International Conference on Mobile Ad-hoc and Sensor Networks* (IEEE MSN), Hongkong, China, to be published in IEEE proceedings and Digital Library, Dec.11-13, 2019.

43. Yongzhong Zhang, **Jianhua Yang** "Using Postal Mail System to Teach Packet Switching in Computer Networks", the Proceedings of 32nd *IEEE* International Conference on Advanced Information Networking and Applications, Krakow, Poland, published in *IEEE* proceedings and Digital Library, pp 1-5, May, 2018.

44. **Jianhua Yang,** Yongzhong Zhang, Robert King, Tim Tolbert "Sniffing and Chaffing Network Traffic in Stepping-Stone Intrusion Detection", the Proceedings of 32nd *IEEE* International Conference on Advanced Information Networking and Applications, Krakow, Poland, published in *IEEE* proceedings and Digital Library, pp 515-520, May, 2018

45. **Jianhua Yang,** Yongzhong Zhang, Guoqing Zhao "Integrate Stepping-Stone Intrusion Technique into Cybersecurity Curriculum", the Proceedings of 31st *IEEE* International Conference on Advanced Information Networking and Applications, Taipei, Taiwan, published in IEEE proceedings and Digital Library, pp. 1-6 March, 2017.

46. Dianyuan Han, **Jianhua Yang**, Wayne Summers "Inject Steganography into Cybersecurity Education ", the Proceedings of 31st *IEEE* International Conference on Advanced Information Networking and Applications, Taipei, Taiwan, published in IEEE proceedings and Digital Library, March, pp. 50-55, 2017.

47. Yien Wang**, Jianhua Yang** "Ethical Hacking and Network Defense: Choose Your Best Network Vulnerability Scanning Tool", the Proceedings of 31st *IEEE* International Conference on Advanced Information Networking and Applications, Taipei, Taiwan, published in IEEE proceedings and

Digital Library, pp. 110-113, March, 2017.

48. **Jianhua Yang**, Yien Wang, Thomas Reddington "Integrating Hacking Technique into Information Assurance Education", the Proceedings of 30th *IEEE* International Conference on Advanced Information Networking and Applications, Crans-Montana, Switzerland, IEEE proceedings and Digital Library, pp. 381-387, March, 2016. (Accepting rate = 29%)

49. **Jianhua Yang** "Resistance to Chaff Attack through TCP/IP Packet Cross-Matching and RTT-based Random Walk", the Proceedings of 30th *IEEE* International Conference on Advanced Information Networking and Applications, Crans-Montana, Switzerland, IEEE proceedings and Digital Library, pp. 784-789, March, 2016. (Accepting rate = 29%)

50. Yien Wang, **Jianhua Yang**, "Host Exploitation and Maintenance Access-Essential Penetration Hands-on Labs for Enhancing Information Assurance Education," Proceedings of 8th International Conference of Education, Research and Innovation (ISBN: 978-84-608-2657-6/ISSN: 2340-1095), Seville, Spain. November 18-20, 2015, 3637-3642.

51. Yien Wang, **Jianhua Yang**, "Enhance Distance Learning through Virtual Lab System", Bird of the Feather, NIST 2015-6th Annual Conference & Expo, Paradise Point, San Diego, CA November 3-4, 2015.

52. **Jianhua Yang**, Yien Wang, "Denial of Service Hands-on Lab for Information Assurance Education: a Case Study", 2015 Information Security Curriculum Development Conference, abstract to be published in ACM digital library, Kennesaw, GA, October, 2015

53. **Jianhua Yang**, Yongzhong Zhang, "RTT-based Random Walk Approach to Detect Stepping-Stone Intrusion", the Proceedings of 29th *IEEE* International Conference on Advanced Information Networking and Applications, Gwangju, South Korea, IEEE proceedings and Digital Library (ISBN 978-1-4799-7905-9), March, 2015, pp. 558-563. (Accepting rate 140/472= 28%)

54. **Jianhua Yang**, Thomas Reddington, "Enhance Learning through Developing Network Security Hands-on Lab for Online Students", abstract to be published in ACM digital library, Kennesaw, GA, October, 2014.

55. Yongzhong Zhang, **Jianhua Yang**, "A Comprehensive Model in Online Course Design Under Ubiquitous Learning Environment", the Proceedings of 3rd International Conference on Computer Science Education: Innovation and Technology, Singapore, Sep. 2012. DOI: 10.5176/2251-2195_CSEIT12.44

56. Yingjie Sheng, Yongzhon Zhang, **Jianhua Yang** "Mining Network Traffic Efficiently to Detect Stepping-Stone Intrusion", the Proceedings of 26th *IEEE* International Conference on Advanced Information Networking and Applications, Fukuoka, Japan, IEEE proceedings and Digital Library, pp. 862-867, March, 2012. (Accepting rate = 29%)

57. Lydia Ray, **Jianhua Yang**, "Forensic Analysis on IPod Touch Generation II", 2011 Information Security Curriculum Development Conference, to be published in ACM digital library, Kennesaw, GA, October, 2011

58. **Jianhua Yang**, Lydia Ray, Guoqing Zhao, "Detecting Stepping-stone Insider Attacks by Network Traffic Mining and Dynamic Programming", the Proceedings of 25th *IEEE* International Conference on Advanced Information Networking and Applications (AINA 2011), Singapore, pp. 151-158, March, 2011.

59. Ying-Wei Kuo, Shou-Hsuan Stephen Huang, Wei Ding, Rebecca Kern, **Jianhua Yang**, " Using Dynamic Programming Techniques to Detect Multi-Hop Stepping-Stone Pairs in a Connection Chain", the Proceedings of 24th *IEEE* International Conference on Advanced Information Networking and Applications (AINA 2010), Perth, Australia, April 2010, pp. 198-205.

60. Yongzhong Zhang, **Jianhua Yang**, Santhoshkumar Bediga, Stephen S.-H. Huang, "Resist Intruders' Manipulation via Context-based TCP/IP Packet Matching", the Proceedings of 24th *IEEE* International Conference on Advanced Information Networking and Applications (AINA 2010), Perth, Australia, April 2010, pp. 1101-1107.

61. **Jianhua Yang**, Yongzhong Zhang, "A New Model to Detect Stepping-stone Intrusion", 2nd International Workshop of Computer Science and Engineering, published in IEEE digital library, Qingdao, China, October, 2009. (Accepting rate = 37%).

62. **Jianhua Yang**, Edward Bosworth, "An Efficient TCP/IP Packet Matching Algorithm to Detect

Stepping-Stone Intrusion", 2009 Information Security Curriculum Development Conference, published in ACM digital library, Kennesaw, GA, September, 2009.

63. Guoqing Zhao, **Jianhua Yang**, Long Ni, Gurdeep S. Hura, and Shou-Hsuan Stephen Huang, "Correlating TCP/IP Interactive Sessions with Correlation Coefficient to Detect Stepping-Stone Intrusion," the Proceedings of 23nd *IEEE* International Conference on Advanced Information Networking and Applications (AINA 2009), Bradford, UK, May 2009

64. Yongzhong Zhang, Chunming Ye, **Jianhua Yang**, "Applying Signal Processing Technology to Stepping-stone Intrusion Detection", the Proceedings of *IEEE* International Symposium on Intelligent Information Technology Application, Shanghai, China, December, 2008.

65. **Jianhua Yang**, Byong Lee, "Detecting Stepping-Stone Intrusion and Resisting Evasion through TCP/IP Packets Cross-Matching", Lecture Notes in Computer Science (*LNCS*) by Spring-Verlag, 5th *IEEE* International Conference on Automatic and Trusted Computing, Oslo, Norway, Vol. 5060, pp 2-12 June,2008.(Accepting rate=28/125)

66. Long Ni, **Jianhua Yang**, Ran Zhang, David Song, "Matching TCP/IP Packets to Resist Stepping-Stone Intruders' Evasion," the Proceedings of *IEEE* 40th Southeastern Symposium on System Theory(SSST08), New Orleans, LA, pp 64-68, March 2008.

67. **Jianhua Yang**, Byong Lee, Shou-Hsuan Stephen Huang, "Monitoring Network Traffic to Detect Stepping-Stone Intrusion," the Proceedings of 22nd *IEEE* International Conference on Advanced Information Networking and Applications (AINA 2008), Okinawa, Japan, pp 56-61 March 2008.

68. Stephen Huang, Robert Lychev, **Jianhua Yang**, "Stepping-Stone Detection via Request-Response Traffic Analysis" to be published in Lecture Notes in Computer Science (*LNCS*) by Spring-Verlag, 4th *IEEE* International Conference on Automatic and Trusted Computing, Hong Kong, China, pp 276-285 July, 2007.(Accepting rate=60/242)

69. **Jianhua Yang**, Byong Lee, Yongzhong Zhang, "Finding TCP Packet Round-Trip Time for Intrusion Detection: Algorithm and Analysis", Lecture Notes in Computer Science (*LNCS*) by Spring-Verlag, 5th International Conference on Cryptology and Network Security, Suzhou, China, Vol. 4301, pp 303-317, Dec. 2006. (Accepting rate=26/148)

70. Yongzhong Zhang, **Jianhua Yang**, Chunming Ye, "Resistance Analysis to Evasion of a Novel Algorithm of Detecting Stepping-Stone", Lecture Notes in Computer Science (*LNCS*) by Spring-Verlag, 3rd *IEEE* International Conference on Automatic and Trusted Computing, Wuhan, China, Vol. 4158, pp 477-486, Sep. 2006. (Accepting rate=60/208)

71. **Jianhua Yang**, Shou-Hsuan Stephen Huang, Yongzhong Zhang, "Resistance Analysis to Intruders' Evasion of Detecting Intrusion", Lecture Notes in Computer Science (*LNCS*) by Springer-Verlag, 9th Information Security Conference, Samos, Greece, Vol. 4176, pp 383-398, Sep. 2006.(Accepting rate=38/204)

72. **Jianhua Yang**, Yongzhong Zhang, "Probabilistic Proof of an Algorithm to Compute TCP Packet Round-Trip Time for Intrusion Detection", Lecture Notes in Computer Science (*LNCS*) by Springer-Verlag,Vol.3989,pp 18-32,2006.(Accepting rate=32/208)

73. **Jianhua Yang**, Shou-Hsuan Stephen Huang, Ming D. Wan, "A Clustering-Partitioning Algorithm to Find TCP Packet Round-Trip Time for Intrusion Detection," Proceedings of 20th *IEEE* International Conference on Advanced Information Networking and Applications (AINA 2006), Vienna, Austria, April 2006, Vol. 1, pp 231-236.(Accepting rate=30%)

74. Ming D. Wan, Shou-Hsuan Stephen Huang, **Jianhua Yang,** "Finding the Longest Similar Subsequence of Thumbprints for Intrusion Detection," Proceedings of 20th *IEEE* International Conference on Advanced Information Networking and Applications (AINA 2006), Vienna, Austria, April 2006, Vol. 1, pp 255-260. (Accepting rate=30%)

75. **Jianhua Yang**, Shou-Hsuan Stephen Huang, "A Way by Estimating the Variation of TCP Packet Round-Trip Time to Detect Stepping-Stone Intrusion (Extended Abstract)," published electronically at the web site of the 21st Annual Computer Security Applications Conference (ACSAC 05), Tucson, Arizona, December 2005. (Accepting rate=26%)

76. **Jianhua Yang**, Shou-Hsuan Stephen Huang, "Charactering and Estimating Network Fluctuation for Detecting Interactive Stepping-Stone Intrusion," the Proceedings of International Conference on Communication, Network and Information Security, Phoenix, Arizona, November 2005, pp. 70-75.

(Accepting rate=34%)

77. **Jianhua Yang**, Shou-Hsuan Stephen Huang, "Improved Thumbprint and Its Application for Intrusion Detection," Lecture Notes in Computer Science (*LNCS*) by Springer-Verlag, Vol. 3619, pp 433-442, 2005. (Accepting rate=22%)
78. **Jianhua Yang**, Shou-Hsuan Stephen Huang, "Correlating Temporal Thumbprint for Tracing Intruders," Proceedings of 3rd International Conference on Computing, Communications and Control Technologies, Austin, Texas, July 2005, pp.236-241. (Accepting rate=38%)
79. **Jianhua Yang**, Shou-Hsuan Stephen Huang, "Matching TCP Packets and Its Application to the Detection of Long Connection Chains," Proceedings of 19th *IEEE* International Conference on Advanced Information Networking and Applications (AINA 2005), Taipei, Taiwan, China, March 2005, pp 1005-1010. (Accepting rate=27%)
80. **Jianhua Yang**, Shou-Hsuan Stephen Huang, "A Real-Time Algorithm to Detect Long Connection Chains of Interactive Terminal Sessions," Proceedings of 3rd *ACM* International Conference on Information Security (Infosecu'04), Shanghai, China, November 2004, pp. 198-203. (Accepting rate=25%)

HORNER
Faculty Research Award of the Year 2020-2021

AWARDED External GRANTS

1. NSA NCAE-C Capacity Building, co-PI with Lixin Wang (PI), "Enhancement of Cybersecurity Education for Local Secondary Programs in the Columbus GA area through Capacity Building", NSA, Federal, $176,000, Sep. 3, 2024 to Dec. 31, 2026.
2. GenCyber, PI, "Broadening Cybersecurity Awareness for Middle School Girls via GenCyber Outreach and Playing Cyber Games", Sponsored by NSA, Federal, $44,720.47, July 28, 2023 to July 28, 2025.

3. Gencyber, PI, "Broadening Cybersecurity Awareness for Middle School Girls via GenCyber Outreach, Games and Storytelling", Sponsored by NSA, Federal, $47,949.55. Sep. 1, 2022 to Aug. 31, 2023.

4. NCAE-C, PI, "Mining Network Traffic to Detect Stepping-stone Intrusion", $282030.00, NSA, Sep. 1st, 2020 to August 31st, 2023.

5. GenCyber, PI, "Broadening Cybersecurity Awareness for Middle School Girls via History and Storytelling", $25,556.95, NSA, April 1st, 2020 to March 31st, 2021

6. NSA Summer Workshop Grant, PI, "A Hands-on Learning Workshop in Stepping Stone Intrusion Detection", $24617.11, NSA, April 1st, 2019 to August 31st, 2019.

7. NSA CDI/NCCP Grant, PI, "Integration of Stepping-stone Intrusion Detection Hands-on Learning Experience into the Cybersecurity Curriculum", $132,599, NSA, Nov. 1st, 2017 to Oct. 31st, 2018.

8. GenCyber, PI, "Broadening Middle School Students' Security Awareness via Playing Cyber Games", $28,269.00, NSA, April 1st, 2017 to March 31st, 2018.

9. Cyber P3i, co-PI, "Recruiting and Preparing Cyber Soldiers", $148,876, funded by USAR (United States Army Reserve), September 2016 to August 2017.