

Yoohwan Kim, Ph.D., CISSP, CISA, CEH, CPT

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RESEARCH AREAS

Network and Computer Security, Computer Networks, Blockchain and Decentralized Apps, Data Analytics

EDUCATION

<i>Aug. 2003</i>	Ph.D. in Computer Engineering	Case Western Reserve University, Cleveland, Ohio
<i>Aug. 1994</i>	M.S. in Computer Science	Case Western Reserve University, Cleveland, Ohio
<i>Feb. 1989</i>	B.A. in Economics	Seoul National University, Seoul, South Korea

PROFESSIONAL CERTIFICATIONS

- **CISSP** (Certified Information Systems Security Professional) by (ISC)² (International Information System Security Certification Consortium), 2012
- **CISA** (Certified Information Systems Auditor) by ISACA (Information Systems Audit and Control Association), 2013 (Passed with Top 10% score)
- **CEH** (Certified Ethical Hacker) by EC Council, 2014 (CEH Certified Instructor since 2016)
- **CPT** (Certified Penetration Tester) by IACRB (Info. Assurance Certification Review Board), 2014

ACADEMIC APPOINTMENTS

<i>2010 ~ present</i>	Associate Professor	University of Nevada, Las Vegas (UNLV) Department of Computer Science
<i>2004 ~ 2010</i>	Assistant Professor	University of Nevada, Las Vegas (UNLV) Department of Computer Science

PROFESSIONAL EXPERIENCES

<i>2019 Jun ~ Aug.</i>	Summer Faculty Research Fellow	Air Force Research Laboratory, Albuquerque, NM <ul style="list-style-type: none">▪ Collaborative research with the AFRL Space Vehicles Directorate at Kirtland Air Force Base on secure and efficient satellite communication▪ Worked on integrating HAIPE and DTN in a Satellite Communication Environment
<i>2018 May ~ Jun.</i>	Summer Faculty Research Fellow	Air Force Research Laboratory, Albuquerque, NM <ul style="list-style-type: none">▪ Developed methods to integrate HAIPE to DTN and Bundle protocol in a Satellite Communication Environment

- 2017 May ~ Jul. **Summer Faculty Research Fellow** **Air Force Research Laboratory, Albuquerque, NM**
- Developed methods on improving the performance of HAIPE-Encrypted TCP Traffic in a Satellite Communication Environment
- 2011 Jul. ~ Oct. **Visiting Researcher** **Oak Ridge National Laboratory, Oak Ridge, TN**
- Collaborative research at the CSIIR (Cyberspace Sciences and Information Intelligence Research) group on Information Security
 - Developed methods for insider threat analysis and malware analysis
- 1999 ~ 2001 **Co-founder and Vice-President** **Adnetwork, Inc., Holmdel, NJ**
- Developed a technology for multimedia advertising on the web, pioneering the new area of *interstitial* advertisement (Full-browser advertising during web page transitions)
 - Raised investment fund (\$1.1M) and managed the development team
 - Performed various marketing / sales / administration functions
- 1997 ~ 1999 **Member of Technical Staff** **Lucent Technologies / Bell Labs, Whippany, NJ**
Software Engineer *Wireless Data Networking Laboratory*
- Developed software for 3G Wireless System (CDMA 2000) Base Transmission Station, the OA&M features (Cellsite initialization, flash file system, hardware resource allocation, remote reset, audit) on VxWorks and pSOS RTOS over PPC860 boards
 - Developed Unix k-shell and tcsh scripts, makefiles for software builds and designed OO software in IONA Orbix (CORBA servers), UML/ObjectTeam
 - Implemented various TCP/IP protocols, ACRNET bus data Link layer protocols, and proprietary protocol over Firewire (IEEE 1394). Configured ATM AAL2/AAL5 on FORE ATM switches. Worked with TDM bus protocol on Lucent Series II Cellsite
- 1994 ~ 1997 **Graduate Research Assistant** **Case Western Reserve Univ., Cleveland, OH**
- Worked on Ph.D. dissertation in software design methodology, entitled “*Software architecture description language for agile manufacturing systems*”
 - Researched on real-time control software for an agile manufacturing system composed of four Adept robots, sensors, actuators, and conveyers with reusable software design patterns (Sponsored by Energizer Battery Company)
 - Implemented the real-time distributed control system on Unix/VxWorks, integrating Solaris workstations, m68k SBCs on VMEbus, robots, and computer vision in C++ / V+
- 1992 ~ 1994 **Database Programmer** **Cleveland Clinic Foundation, Cleveland, OH**
- Processed massive financial data on IBM mainframe with TSO/SQL/NOMAD (4GL) and provided database reports to support managerial decision-making
 - Developed a Client/Server financial information system on MS Windows/PC
- 1991 **MIS Consultant** **Andersen Consulting (now Accenture), Seoul, Korea**
- Provided IT consulting for corporate customers
 - Developed an Early Warning System for a manufacturing company
 - Had an extensive training in CASE tools (3 weeks in St. Charles, IL, USA)

FUNDING RECORD

1. NSA – GenCyber, “*GenCyber Summer Camp: Cybersecurity Summer Camp for High School Students in Southern Nevada*”, Juyeon Jo and Yoohwan Kim (Co-PI), \$97,649, March 2019 – Feb. 2020

2. City Ledger, LLC., *"Blockchain Application Development for Hospitality Management System: Phase II"*, Yoohwan Kim (PI), \$44,000, Feb. 2019 – Aug. 2019
3. Blockchains, LLC., *"Support for UNLV Blockchain Day"*, \$1,500, May 2019
4. Axel, *"Support for UNLV Blockchain Day"*, \$1,000, May 2019
5. Air Force SBIR, Intelligent Fusion Technology, *"Integrating PEPs (Performance Enhancing Proxies) and Bundle Protocol with HAIPE (High Assurance Internet Protocol Encryptions) in a Satellite Communicate Environment"* (PI), \$20,000, Jan, 2019 – Sep. 2019
6. City Ledger, LLC., *"Blockchain Application Development for Hospitality Management System: Phase I"*, Yoohwan Kim (PI), \$62,720, Oct. 2018 – Jan. 2019
7. NSA – GenCyber, *"GenCyber Summer Camp: Cybersecurity Summer Camp for High School Students in Southern Nevada"*, Juyeon Jo and Yoohwan Kim (Co-PI), \$99,991, March 2018 – Feb. 2019
8. Nevada NSF EPSCoR, *"The Solar Energy-Water-Environment Nexus in Nevada"*, Supplemental Fund, \$19,966 (Co-PI), June 2017
9. UNLV Travel Fund, UNLV, Yoohwan Kim, \$630 (PI), Dec .2016
10. Remote Sensing Laboratory/National Security Technologies, *"ISR (One Step Removed) Facility Protection Module, Part II"*, Yoohwan Kim, \$20,868 (PI), Mar. 2016
11. Remote Sensing Laboratory/National Security Technologies, *"ISR (One Step Removed) Facility Protection Module, Part I"*, Yoohwan Kim, \$19,210 (PI), Sep. 2015
12. Ministry of Science, ICT and Future Planning, Republic of Korea, *"Collaborative Research on Public Key Infrastructure"*, Yoohwan Kim, \$10,000 (PI), Aug. 2015
13. UNLV Office of Sponsored Programs, *"Summer Institute"*, Yoohwan Kim, \$5,000 (PI), May 2015
14. Nevada NASA Space Grant, *"Developing Small UAS Traffic Management (sUTM) System"*, Juyeon Jo, et al, \$73,016 (Co-PI), Mar. 2015
15. Naval Air Warfare Center – Aircraft Division, *"Unmanned Aerial Vehicle (UAV) Research in Support of Counter Poaching Efforts as a Deterrent to Combatting Illicit Trafficking"*, Mohamed Trabia, et al, \$1,263,041 (Co-PI), Jul. 2014
16. UNLV Faculty Opportunity Award, *"A Privacy Protection Scheme from Unmanned Aerial Systems (UAS)"*, Yoohwan Kim, \$20,000 (PI), Jul. 2014
17. UNLV Travel Fund, UNLV, Yoohwan Kim, \$750 (PI), May 2014
18. UNLV Travel Fund, UNLV, Yoohwan Kim, \$1,000 (PI), Oct. 2013
19. Remote Sensing Laboratory/National Security Technologies, *"Power Automation System (PAS) Vulnerability Assessment in Smart Grid, Part II"*, Yoohwan Kim, \$52,493 (PI), Sep. 2013
20. NSF/Intel CPS Cybersecurity, *"CPS Idea Lab Workshop"*, Yoohwan Kim, \$1,752 (PI), Aug. 2013
21. UNLV Faculty Opportunity Award, *"Revolutionizing the Authentication Paradigm with an Indirect User ID Mechanism"*, Yoohwan Kim, \$24,480 (PI), Jul. 2013
22. NCIIA, *"Las Vegas Lean Startup"*, Hans Rawhouser, et al, \$21,988 (Co-PI), Feb. 2013
23. National Security Agency, *"Information Assurance Scholarship Program at UNLV"*, Juyeon Jo, et al, \$32,361 (Co-PI), Oct. 2012
24. Remote Sensing Laboratory/National Security Technologies *"Power Automation System (PAS) Vulnerability Assessment in Smart Grid, Part I"*, Yoohwan Kim, \$48,000 (PI), Sep. 2012
25. Remote Sensing Laboratory/National Security Technologies *"New Hybrid TDMA/CSMA Wireless Mesh Networks (WMN) for Secure Smart Grid Communication"*, Yoohwan Kim, \$46,800 (PI), Sep. 2011
26. Oak Ridge National Laboratory/UT-Battelle, *"Cyber Resiliency Project Support"*, Yoohwan Kim, \$59,244 (PI), June 2011

27. Nevada NSF-EPSCoR, Cyberinfrastructure training program, *"Securing the cloud"*, Yoohwan Kim, \$2,713 (PI), Feb. 2011
28. INTEROP 2009, "Full registration fee support", Yoohwan Kim, \$2,000 (PI), May 2009
29. Xilinx Inc., Equipment donation program, *"Utilizing FPGA development environment in class"*, Yoohwan Kim, \$7,502 (PI), July 2008
30. US Air Force / General Dynamics, *"A Hierarchical Communication Architecture for Secure non-LOS Communication in a UAV Fleet without GPS Links"*, Yoohwan Kim, \$37,781 (PI), July 2007
31. US Air Force / General Dynamics, *"Development of High Performance, Low Energy Consumption Reconfigurable Computing Platform and Software Architecture for Cooperative UAVs"*, Yoohwan Kim, et al, \$55,253 (PI), July 2007
32. Japan Patent Office, *"Collaborative research in Computer Security and Privacy"*, Yoohwan Kim, \$10,000 (PI), June 2007
33. UNLV Travel Fund, UNLV, Yoohwan Kim, \$1,000 (PI), June 2007
34. UNLV Research Infrastructure Award Program (RIAP), *"Infrastructure Dev. for Research on SoC and Multi-Core Systems"*, Mei Yang, et al, \$68,816.48 (Co-PI), Feb. 2007
35. UNLV Travel Fund, UNLV, Yoohwan Kim, \$1,000 (PI), Aug. 2006
36. UNLV New Investigator Award (NIA), *"Attack Traceback in Internet Distributed Denial-of-Service attack"*, Yoohwan Kim, \$8,800 (PI), Jan. 2005
37. Microsoft Research, Microsoft Trustworthy Computing Curriculum, *"Introducing Trustworthy Computing to CS and CE curriculum at UNLV"*, Yoohwan Kim, et al, \$50,000 (PI), Dec. 2004

CITATIONS SUMMARY ON GOOGLE SCHOLAR

- All citations: 2124
- H-index: 22

PUBLICATIONS

Journal Papers

1. Lee, S., Kim, Y., Kim, J., Song, C., *"A Design of MAC Model Based on the Separation of Duties and Data Coloring: DSDC-MAC"*, Journal of Computer Science, 16(1), 72-91, Science Publications, 2020
2. Sungchul Lee, Juyeon Jo, Yoohwan Kim, *"Hadoop Performance Analysis Model with Deep Data Locality"*, Information, 2019, 10, 222
3. Yoohwan Kim and Juyeon Jo, *"Dynamically Adjusting the Mining Capacity in Cryptocurrency with Binary Blockchain"*, International Journal of Networked and Distributed Computing, Vol. 6, Issue 1, pp. 43 - 52, Jan. 2018
4. Yoohwan Kim, Juyeon Jo and Sungchul Lee, *"ADS-B Vulnerabilities and a Security Solution with a Timestamp"*, IEEE Aerospace and Electronics Systems Magazine, Vol. 32, Issue 11, pp. 52 - 61, November 2017
5. Chee-Yang Song, Yoohwan-Kim, *"A Software Modeling Method for Integrating Functional and Security Design"*, Journal of Knowledge Information Technology and Systems (JKITS), Vol. 12, No. 1, pp. 131-155, Feb. 2017
6. Sungchul Lee, Ju-Yeon Jo, and Yoohwan Kim, *"Authentication System for Stateless RESTful Web Service"*, Journal of Computational Methods in Sciences and Engineering, vol. 17, no. S1, pp. S21-S34, 2017

7. Sungchul Lee, Eunmin Hwang, Juyeon Jo, and Yoohwan Kim, "Big Data Analysis with Hadoop on Personalized Incentive Model with Statistical Hotel Customer", ACIS International Journal of Software Innovation (IJSI), Vol. 4, No. 3, July 2016
8. Sungchul Lee, Ju-Yeon Jo, and Yoohwan Kim, "Restful Web Service and Web-Based Data Visualization for Environmental Monitoring", International Journal of Software Innovation (IJSI), Vol. 3, No. 1, pp. 75-94, January 2015
9. Sungchul Lee, Ju-Yeon Jo, and Yoohwan Kim, "Environmental Sensor Monitoring with Secure RESTful Web Service", Int'l Journal of Services Computing, Vol. 2, No. 3, pp. 30 – 42, July 2014
10. Jungeun Kim and Yoohwan Kim, "A Secure on-line credit card transaction method: NNCC", Journal of Computing Science and Engineering, by KIISE, Mar., 2011
11. Yan Jin, Ling Wang, Ju-Yeon Jo, Yoohwan Kim, Mei Yang, and Yingtao Jiang, "EECCR: an Energy Efficient m-Coverage and n-Connectivity Routing Algorithm under Border Effects in Heterogeneous Sensor Networks", IEEE Transactions on Vehicular Technology, vol. 58, issues 3, pp. 1429-1442, March 2009
12. Yan Jin, Ju-Yeon Jo, and Yoohwan Kim, "Energy-Efficient Multi-Hop Communication Scheme In Clustered Sensor Networks", International Journal of Innovative Computing, Information and Control, vol. 4, no. 7, pp.1741-1749, July 2008
13. Yan Jin, Ju-Yeon Jo, Ling Wang, Yoohwan Kim, and Xiaozong Yang, "ECCRA: An energy-efficient coverage and connectivity preserving routing algorithm under border effects in wireless sensor networks", Computer Communications (Elsevier), vol. 31, issue 10, pp. 2398-2407, June 2008
14. Yan Jin, Ling Wang, Yoohwan Kim, and Xiaozong Yang, "Energy Efficient Non-Uniform Clustering Division Scheme in Wireless Sensor Networks", Wireless Personal Communications (Springer), vol. 45, no.1, pp. 31-43, April. 2008
15. Yan Jin, Ling Wang, Yoohwan Kim, and Xiaozong Yang, "EEMC: An energy-efficient multi-level clustering algorithm for large-scale wireless sensor networks", Computer Networks (Elsevier), vol. 52, issue 3, pp. 542-562, Feb. 2008
16. Yoohwan Kim, Ju-Yeon Jo, and Kyunghye Kim Suh, "Baseline Profile Stability for Network Anomaly Detection", International Journal of Network Security (IJNS), vol. 6, no. 1, 2008, pp. 60-66, Jan. 2008
17. Yan Jin, Ling Wang, Yoohwan Kim and Xiaozong Yang, "Connectivity and lifetime of data aggregation tree in unreliable sensor node", The Mediterranean Journal of Electronics and Communications (MJEC), Vol. 3, No. 1, pp. 23-30, 2007
18. Yan Jin, Ling Wang, Yoohwan Kim, and Xiaozong Yang, "Optimal Task-Specific Clustering Scheme in Unreliable Wireless Sensor Networks", IJCSNS International Journal of Computer Science and Network Security Computing, vol. 6, no. 7B, pp. 30-36, July, 2006
19. Yoohwan Kim, Wing Cheong Lau, Mooi Choo Chuah and H. Jonathan Chao, "A Statistics-Based Packet Filtering Scheme against Distributed Denial-of-Service Attacks", IEEE Transaction on Dependable and Secure Computing, vol. 3, issue 2, pp. 141-155, Apr-Jun, 2006
20. Yan Jin, Ling Wang, Yoohwan Kim, and Xiaozong Yang, "Optimal Clustering Scheme Based On Minimal Cost In Unreliable Wireless Sensor Networks", The Mediterranean Journal of Computers and Networks, vol. 2, no. 2, pp. 90-99, April, 2006
21. Yoohwan Kim, Ju-Yeon Jo, Frank Merat, Mei Yang, and Yingtao Jiang, "Mitigating Distributed Denial-of-Service Attack with deterministic Bit Marking", International Journal of Information Technology, Vol. 11, No. 2, 2005, pp. 62-82
22. Jinhua Zhao, Ling Wang, Yoohwan Kim, Yingtao Jiang, and Xiaozong Yang, "Secure Dynamic Gateway to Internet Connectivity for Ad-hoc Network", Int'l Journal of Information Technology, Vol. 11, No. 2, 2005, pp. 136-152

23. L. Zhang, R. Raut, Yingtao Jiang, U. Kleine, and Y. Kim, "Macro-Cell Placement for Analog Physical Designs Using a Hybrid Genetic Algorithm with Simulated Annealing," *International Journal of Integrated Computer-Aided Engineering*, vol. 12, no. 4, pp. 379-396, Dec. 2005
24. L. Zhang, R. Raut, Yingtao Jiang, U. Kleine, and Y. Kim, "A Hybrid Evolutionary Analogue Module Placement Algorithm for Integrated Circuit Layout Designs," *International Journal of Circuit Theory and Applications*, vol. 33, no. 6, pp. 487-501, Nov. 2005
25. Wyatt Newman, Andy Podgurski, Roger Quinn, Frank Merat, Michael S. Branicky, Nick A. Barendt, Greg C. Causey, Erin L. Haaser, Yoohwan Kim, Jayendran Swaminathan and Virgilio B. Velasco "Design Lessons for Building Agile Manufacturing Systems", *IEEE Transactions on Robotics and Automation*, Vol. 16, No. 3, June 2000, pp 228-238
26. Roger Quinn, Greg Causey, Frank Merat, David Sargent, Nicholas Barendt, Wyatt Newman, Virgilio Velasco, Andy Podgurski, Ju-Yeon Jo, Leon Sterling and Yoohwan Kim, "An Agile Manufacturing Workcell Design", *IIE (Institute of Industrial Engineers) Transactions*, Vol. 29, no. 10, Oct. 1997

Conference Papers

1. Vinay Calastray, Yoohwan Kim, Juyeon Jo, "Secure IoT Data Management In A Private Ethereum Blockchain", 44th IEEE Computer Society Signature Conference on Computers, Software, and Applications (COMPSAC), July 2020
2. Russell Harkanson, Carter Chiu, Yoohwan Kim, Ju-Yeon Jo, "A Framework for Decentralized Private Random State Generation and Maintenance for Multiplayer Gaming over Blockchain", IEEE Computer Society Signature Conference on Computers, Software, and Applications (COMPSAC), July 2020
3. A. Hoffman, E. Becerril-Blas, K. Moreno and Y. Kim, "Decentralized Security Bounty Management on Blockchain and IPFS," 2020 10th Annual Computing and Communication Workshop and Conference (CCWC), Las Vegas, NV, USA, 2020, pp. 0241-0247. (Best paper award)
4. Fonseca Cacho, J. R., Dahal, B., & Kim, Y., "Decentralized Marketplace using Blockchain, Cryptocurrency, and Swarm Technology", 4th International Conference on Computer, Communication and Computational Sciences (IC4S2019).
5. Q. Zhao, X. Tian, G. Chen, R. Harkanson, Y. Kim and K. Pham, "Understanding the Effects of TCP Tunneling on Approaching High Performance HAIPE-Encrypted Satellite Communication Systems," 2019 IEEE Military Communications Conference (MILCOM), Norfolk, VA, USA, 2019, pp. 1-6.
6. C. H. Park, I. Mejia Barlongo and Y. Kim, "A Market Place Solution for Energy Transaction on Ethereum Blockchain," 2019 IEEE 10th Annual Information Technology, Electronics and Mobile Communication Conference (IEMCON), Vancouver, BC, Canada, 2019, pp. 1-5.
7. Zachary Laney and Yoohwan Kim, "Private Group Communication in Blockchain Based on Diffie-Hellman Key Exchange", 1st International Workshop on Advances in Artificial Intelligence for Blockchain (AiChain), July 2019
8. Sungchul Lee, Juyeon Jo, Yoohwan Kim,, "Hadoop Performance Analysis Model with Deep Data Locality", 4th International Conference on Big Data, Cloud Computing and data Science Engineering (BCD 2019), May 2019
9. Tralyn Le, Yoohwan Kim, and Ju-Yeon Jo, "Implementation of a Blockchain-Based Event Reselling Systems", 6th International Conference on Computational Science/Intelligence & Applied Informatics (CSII 2019), May 2019
10. Russell Harkanson, Yoohwan Kim, Juyeon Jo, and Khanh Pham, "Effect of TCP Transfer Buffers and Congestion Avoidance Algorithms on the End-to-End Throughput to TCP-over-TCP Tunnels", 16th International Conference on Information Technology-New Generations (ITNG 2019), pp. 401-408

11. Marc Dinh, Brendan Morris, and Yoohwan Kim, "UAS-based Object Tracking via Deep learning", 2019 IEEE 9th Annual Computing and Communication Workshop and Conference (CCWC), pp. 217-275
12. Binay Dahal and Yoohwan Kim, "AutoEncoded Domains with Mean Activation for DGA Botnet Detection", 2019 IEEE 12th Int'l Conference on Global Security, Safety and Sustainability (ICGS3)
13. Sungchul Lee, Juyeon Jo, Yoohwan Kim,, "Key based Deep Data Locality on Hadoop", 2018 IEEE International Conference on Big Data (Big Data), Dec. 2018, pp. 3889-3898
14. Zhaoxuan Gong, Wei Guo, Jia Guo, Zhenyu Zhu, Yoohwan Kim, Guodong Zhang, "Level Set Framework of Multi Labels Fusion for Multiple Sclerosis Lesion Segmentation", Proceedings of the 2nd International Symposium on Image Computing and Digital Medicine, pp. 12-15, Oct 13, 2018
15. Guodong Zhang, Lingchuang Kong, Wei Guo, Jia Guo, Zhenyu Zhu, Yoohwan Kim, Zhaoxuan Gong, "Gaussian Highpass Filters-based Convolutional Neural Network for Pulmonary Nodules Detection in CT Images", Proceedings of the 2nd International Symposium on Image Computing and Digital Medicine, pp. 60-63, Oct 13, 2018
16. Guodong Zhang, Yuxuan Sun, Lingchuang Kong, Jing Bi, Zhaoxuan Gong, Yoohwan Kim, Wei Guo, "Lung nodules detection based on modified extreme learning machine with deep convolutional features", Tenth International Conference on Digital Image Processing (ICDIP 2018), August 9, 2018
17. Guodong Zhang, Wanwan Zhang, Zhaoxuan Gong, Jing Bi, Yoohwan Kim, Wei Guo, "False positive reduction of pulmonary nodules using three-channel samples" Tenth International Conference on Digital Image Processing (ICDIP 2018), August 9, 2018
18. Yoohwan Kim, Juyeon Jo, Russell Harkanson, and Khanh Pham, "TCP-GEN Framework to Achieve High Performance for HAIPE-Encrypted TCP Traffic in a Satellite Communication Environment", IEEE International Conference on Communications (ICC), May 2018
19. G. Zhang, M. Guo, Z. Gong, J. Bi, Yoohwan Kim, and W. Guo, "Pulmonary nodules segmentation method based on auto-encoder", Tenth International Conference on Digital Image Processing (ICDIP 2018), May 2018
20. G. Zhang, Y. Sun, L. Kong, J. Bi, Z. Gong, Yoohwan Kim, and W. Guo, "Lung Nodules Detection Based on Modified Extreme Learning Machine with Deep Convolutional Features", Tenth International Conference on Digital Image Processing (ICDIP 2018), May 2018
21. W. Guo, Q. Chen, Z. Gong, J. Bi, Yoohwan Kim, and G. Zhang, "Automatic Rib Detection and Segmentation Based on Spatial Distance Constraints Particle Filter Method", 2018 International Conference on Image and Graphics Processing (ICIGP), Hong Kong, Feb. 2018
22. Yoohwan Kim, Ju-Yeon Jo, "Binary Blockchain: Solving the Mining Congestion Problem by Dynamically Adjusting the Mining Capacity", 5th International Conference on Applied Computing & Information Technology (ACIT), July 2017
23. Haroon Stephen, Yoohwan Kim, and Sajjad Ahmad, "Study of Potential Integrated Management of Water Resources in Las Vegas Valley", XVI World Water Congress, May, 2017
24. Russell Harkanson, Yoohwan Kim, "Applications of elliptic curve cryptography: a light introduction to elliptic curves and a survey of their applications", 12th Annual Conference on Cyber and Information Security Research, April 2017 (**Best Full Paper Runner-Up**)
25. Shahab Tayeb, Shahram Latifi, Yoohwan Kim, "A survey on IoT communication and computation frameworks: An industrial perspective", 2017 IEEE 7th Annual Computing and Communication Workshop and Conference (CCWC), Jan. 2017
26. Priyanka Thota, Yoohwan Kim, "Implementation and Comparison of M2M Protocols for Internet of Things", 4th Int'l Conference on Applied Computing & Information Technology (ACIT), Dec. 2016.

27. Candace Suh-Lee, Juyeon Jo, and Yoohwan Kim, *"Text Mining for Security Threat Detection Discovering Hidden Information in Unstructured Log Messages"*, IEEE Conference on Communications and Network Security (CNS), Oct. 2016
28. Sungchul Lee, Ju-Yeon Jo, and Yoohwan Kim, *"Performance Improvement of MapReduce Process Using Limited Node Block Placement Policy"*, The 3rd IEEE International Conference on Data Science and Advanced Analytics (DSAA), Oct. 2016.
29. Sungchul Lee, Ju-Yeon Jo, and Yoohwan Kim, *"Data Analysis performance comparison between Single-Mode and Multi-Mode"*, ISCA 25th Int'l Conf. on Data Engineering and Software Engineering (SEDE), Sep. 2016
30. Yoohwan Kim, Juyeon Jo and Sungchul Lee, *"A Secure Location Verification Method for ADS-B"*, IEEE/AIAA 35th Digital Avionics Systems Conference (DASC), Sep. 2016
31. Haysam Selim, Shahab Tayeb, Yoohwan Kim, Justin Zhan, and Matin Pirouz, *"Vulnerability Analysis of Iframe Attacks on Websites"*, The 3rd Multidisciplinary International Social Networks Conference on Social Informatics, Aug. 2016
32. Guodong Zhang, Ying Shao, Yoohwan Kim, and Wei Guo, *"Vertebrae Detection Algorithm in CT Scout Images"*, Chinese Conference on Image and Graphics Technologies, July 2016
33. Mandana Bozorgi, and Yoohwan Kim, *"Privacy-preserving Data Mining on Hospitality Big Data"*, 16th International Conference on Gambling & Risk Taking, June 2016
34. Sai Ram Ganti and Yoohwan Kim, *"Implementation of Detection and Tracking Mechanism for Small UAS"*, International Conference on Unmanned Aircraft Systems (ICUAS), June 2016
35. Sachiko Sueki and Yoohwan Kim, *"Vulnerabilities and Mitigation Methods in the NextGen Air Traffic Control System"*, 13th International Conference on Information Technology: New Generations (ITNG), April 2016
36. Sungchul Lee, Juyeon Jo, and Yoohwan Kim, *"Secure and Stateless RESTful Web Service Using ID-Based Encryption"*, 28th International Conference on Computer Applications in Industry and Engineering, October 2015
37. Robert Gripenrog and Yoohwan Kim, *"Utilizing NFC to secure identification"*, IEEE/ACIS 14th International Conference on Computer and Information Science (ICIS), June 2015
38. Sungchul Lee, Ju-Yeon Jo, and Yoohwan Kim, *"Method for secure RESTful web service"*, IEEE/ACIS 14th International Conference on Computer and Information Science (ICIS), June 2015
39. Sai Ram Ganti and Yoohwan Kim, *"Design of Low-Cost On-board Auto-tracking Antenna for Small UAS"*, 12th Int'l Conference on Information Technology: New Generations (ITNG), April 2015
40. Yoohwan Kim, Juyeon Jo, and Monetta Shaw, *"A Lightweight Communication Architecture for Small UAS Traffic Management (SUTM)"*, ICNS, April 2015
41. Sweta Gurung, and Yoohwan Kim, *"Healthcare Privacy: How Secure Are the VOIP/Video-Conferencing Tools for PHI Data?"*, 12th International Conference on Information Technology-New Generations (ITNG), April 2015
42. Tara Baniya, Dipesh Gautam, and Yoohwan Kim, *"Safeguarding Web Surfing with URL Blacklisting"*, 12th International Conference on Information Technology-New Generations (ITNG), April 2015
43. Juyeon Jo, Yoohwan Kim and Sungchul Lee, *"Mindmetrics: Identifying users without their login IDs"*, IEEE International Conference on Systems, Man and Cybernetics (SMC), Oct. 2014
44. Sungchul Lee, Juyeon Jo, and Yoohwan Kim, *"Performance testing of web-based data visualization"*, IEEE International Conference on Systems, Man and Cybernetics (SMC), Oct. 2014

45. Jinho Ahn and Yoohwan Kim, "Effective SBML Protocol for Tolerating Concurrent Failures Based on Broadcast Networks", IEEE International Conference on Dependable, Autonomic and Secure Computing (DASC), Aug. 2014
46. Sungchul Lee, Juyeon Jo, Yoohwan Kim, and Haroon Stephen, "A framework for environmental monitoring with Arduino-based sensors using Restful web service", IEEE International Conference on Services Computing (SCC), pp. 275-282, June 2014
47. Yoohwan Kim, Juyeon Jo, and Sanjeeb Shrestha, "A server-based real-time privacy protection scheme against video surveillance by Unmanned Aerial Systems", International Conference on Unmanned Aircraft Systems (ICUAS), May 2014
48. Amritha Premnath, Juyeon Jo, and Yoohwan Kim, "Application of NTRU Cryptographic Algorithm for SCADA Security", 11th International Conference on Information Technology: New Generations (ITNG), April 2014
49. Yoohwan Kim, Hye Rim Cheon, Jae Hyun Kim, "New Power Saving Algorithm considering Associated STAs and Consecutive Traffics in WLAN AP", ACM ICUIMC 2013, Malaysia, Jan. 2013
50. Kyu Hwan Lee, Sung Hyun Cho, Jae Hyun Kim, Yoohwan Kim, Juyeon Jo, "The Energy Saving Strategy using the Network Coding in the Wireless Mesh Network", ACM ICUIMC 2012, Kuala Lumpur, Malaysia, Feb. 2012
51. Yoohwan Kim and Frederick Sheldon, "Anomaly Detection in Multiple Scale for Insider Threat Analysis", 7th CSIIRW, Oct. 2011
52. Kevin Benton, Juyeon Jo, and Yoohwan Kim, "SignatureCheck: A Protocol to Detect Man-In-The-Middle Attack in SSL", 7th CSIIRW, Oct. 2011
53. Yan Jin, Ju-Yeon Jo, Mei Yang, Yoohwan Kim, Yingtao Jiang and John Gowens, "HTSMA: a hybrid temporal-spatial multi-channel assignment scheme in heterogeneous wireless mesh networks", IEEE GlobeCom 2009, December 2009
54. Yan Jin, Ju-Yeon Jo, Yoohwan Kim, Yingtao Jiang, Mei Yang, "EECCP: an energy-efficient coverage-and connectivity preserving algorithm under border effects in wireless sensor networks", Wireless Telecommunications Symposium (WTS), 2008
55. Yoohwan Kim, Wei Ren, Ju-Yeon Jo, Mei Yang, Yingtao Jiang, Jun Zheng, "SFRIC: A Secure Fast Roaming Scheme in Wireless LAN Using ID-Based Cryptography", IEEE International Conference on Communications (ICC), June 2007
56. Wei Ren, Yoohwan Kim, Ju-Yeon Jo, Mei Yang and Yingtao Jiang, "IdSRF: ID-based Secure Routing Framework for Wireless Ad-Hoc Networks", ITNG 2007, April 2007
57. Gopinath Balakrishnan, Mei Yang, Yingtao Jiang, Yoohwan Kim, "Performance Analysis of Error Control Codes for Wireless Sensor Networks", ITNG 2007, April 2007
58. Mei Yang, Yoohwan Kim, Yingtao Jiang, Shupeng Wang, Ahmed Abdelal, "An Improved Multi-Layered Architecture and its Rotational Scheme for Large-Scale Wireless Sensor Networks", IEEE CCNC, Jan. 2007
59. Yan Jin, Wang Ling, Yoohwan Kim, and Xiaozong Yang, "Energy of Flat vs. Clustering Wireless Sensor Networks: A Comparative Study", First International Conference on Communications and Networking in China (CHINACOM 2006), Oct, 2006
60. Yan Jin, Wang Ling, Yoohwan Kim, and Xiaozong Yang, "Lifetime Analysis of Data Aggregation Tree with Unreliable Sensor Node", 1st Int'l Conference on Communications and Electronics (ICCE 2006), Oct, 2006

61. Yan Jin, Wang Ling, Yoohwan Kim, and Xiaozong Yang, "EEMC: An Energy-Efficient Multi-tier Clustering Algorithm for Large-Scale Wireless Sensor Networks", 2nd Int'l Conference on Wireless Communications, Networking and Mobile Computing (IEEE WiCOM 2006), Sep, 2006
62. Wei Ren, Mei Yang, Yoohwan Kim, and Yingtao Jiang, "TCP-CDR: an end-to-end scheme for TCP over mobile ad hoc networks," IEEE International Conf. on ITS Telecommunications, Jun. 2006, pp 767-772
63. Yoohwan Kim, Ahmed Abd El Al, Ju-Yeon Jo, Mei Yang and Yingtao Jiang, "An Efficient Defense against Distributed Denial-of-Service Attacks using Congestion Path Marking", IEEE ICC, June 2006
64. Yoohwan Kim, Ju-Yeon Jo, Kyunghye Suh, "Baseline Profile Stability for Network Anomaly Detection", ITNG 2006, Las Vegas, NV, Apr, 2006
65. M. Yang, J. Wang, Z. Gao, Yingtao Jiang, and Y. Kim, "Coordinated Robust Routing by Dual Cluster Heads in Layered Wireless Sensor Networks," Proc. IEEE 8th International Symposium on Parallel Architectures, Algorithms and Networks (ISPAN'05), pp. 454-461, Dec. 2005
66. Ju-Yeon Jo, Yoohwan Kim, and Jeffrey Sampson, "A Spam Mail blocking scheme with puzzles and tokens", Network/Computer Security Workshop, Bethlehem, PA, Aug. 2005
67. Ju-Yeon Jo and Yoohwan Kim, "Hash-based Internet Traffic Load Balancing", IEEE IRI, Las Vegas, NV, Nov. 2004
68. Mooi Choo Chuah, Wing Cheong Lau, Yoohwan Kim and H. Jonathan Chao, "Transient performance of PacketScore for blocking DDoS attack", IEEE ICC, June 2004
69. Yoohwan Kim, Wing Cheong Lau, Mooi Choo Chuah and H. Jonathan Chao, "PacketScore: Statistical-based Overload Control against Distributed Denial-of-Service Attacks", IEEE INFOCOM, San Francisco, CA, March 2004
70. Yoohwan Kim, Ju-Yeon Jo and Frank Merat, "Defeating Distributed Denial-of-Service Attack with Deterministic Bit Marking", IEEE GLOBECOM, December 2003
71. Yoohwan Kim, Ju-Yeon Jo, H. Jonathan Chao and Frank Merat, "High-Speed Router Filter for Blocking TCP Flooding under Distributed Denial-of-Service Attack", IEEE International Performance Computing and Communications Conference (IPCCC), April 2003
72. Yoohwan Kim and H. Jonathan Chao, "Performance of Exhaustive Matching Algorithms for Input Queued Switches", IEEE ICC, May 2003
73. Ju-Yeon Jo, Yoohwan Kim, and H. Jonathan Chao, "TCP Performance Comparison under Various Load Balancing Methods using OPNET", OPNETWORK, August 2002
74. Ju-Yeon Jo, Yoohwan Kim, H. Jonathan Chao and Frank Merat, "Internet Traffic Load Balancing using Dynamic Hashing with Flow Volume", SPIE ITCOM, July 2002
75. Wyatt Newman, Frank Merat, Michael Branicky, Virgilio Velasco, Nicholas Barendt, Andy Podgurski, Yoohwan Kim, Ju-Yeon Jo, Roger Quinn and Greg Causey, "Technologies for Robust Agile Manufacturing", IASTED 6th International Conference on Robotics and Manufacturing, 1998
76. Ju-Yeon Jo, Yoohwan Kim, Scott Ameduri and Andy Podgurski, "A New Role of Graphical Simulation: Software Testing", 30th Annual Simulation Symposium, April 1997
77. Ju-Yeon Jo, Yoohwan Kim, Andy Podgurski and Wyatt Newman, "Virtual Testing of Agile Manufacturing Software Using 3D Graphical Simulation", IEEE Int. Conf. on Robotics & Automation, Apr 1997
78. Yoohwan Kim and Ju-Yeon Jo, Andy Podgurski, Gultekin Ozsoyoglu, Virgilio Velasco, Nicholas Barendt and Frank Merat, "A Flexible Software Architecture for Agile Manufacturing", IEEE International Conference on Robotics and Automation, April 1997

79. Frank Merat, Nicholas Barendt, Roger Quinn, Greg Causey, Wyatt Newman, Virgilio Velasco, Andy Podgurski, Yoohwan Kim, Gultekin Ozsoyoglu and Ju-Yeon Jo, “*Advances in Agile Manufacturing*”, IEEE International Conference on Robotics and Automation, April 1997
80. Roger Quinn, Greg Causey, Frank Merat, David Sargent, Nicholas Barendt, Wyatt Newman, Virgilio Velasco, Andy Podgurski, Ju-Yeon Jo, Leon Sterling and Yoohwan Kim, “*Design of an Agile Manufacturing Workcell for Light Mechanical Applications*”, IEEE International Conference on Robotics and Automation, April 1996
81. Sungkil Lee, Huang-Cheng Kuo, N. Hürkan Balkir, Yoohwan Kim and Gultekin Ozsoyoglu “*A Database Server for an Agile Manufacturing System with or without Time Constraints*”, Conference on Agile and Intelligent Manufacturing Systems, Oct. 1996

Technical Reports

1. Ki Park and Yoohwan Kim, “*Power Automation System (PAS) Cyber Vulnerability Assessment*”, Site-Directed Research and Development (SDRD) Fiscal Year 2014 Annual Report, Nevada National Security Site (DOE/NV/25946–2416), U.S. Department of Energy, pp. 161-168, April, 2015
2. Ki Park and Yoohwan Kim, “*New Hybrid TDMA/CSMA Wireless Mesh Networks (WMN) for Secure Smart Grid Communication*”, Site-Directed Research and Development (SDRD) Fiscal Year 2012 Annual Report, Nevada National Security Site (DOE/NV/25946–1722), U.S. Department of Energy, pp. 183-189, April, 2013

Video Conferences (refereed)

1. Roger Quinn, Greg Causey, Matthew Birch, Wyatt Newman, Frank Merat, Michael Branicky, Virgilio Velasco, Nicholas Barendt, Andy Podgurski, Yoohwan Kim and Ju-Yeon Jo, “*Technologies for Robust Agile Manufacturing*”, IEEE International Video Conference on Robotics and Automation, April 1998. (Nominated for the best video)
2. Roger Quinn, Greg Causey, Frank Merat, Nicholas Barendt, Wyatt Newman, Virgilio Velasco, Andy Podgurski, Yoohwan Kim, Gultekin Ozsoyoglu and Ju-Yeon Jo, “*Advances in Agile Manufacturing*”, IEEE International Video Conference on Robotics and Automation, April 1997
3. Roger Quinn, Greg Causey, Frank Merat, David Sargent, Nicholas Barendt, Wyatt Newman, Virgilio Velasco, Andy Podgurski, Ju-Yeon Jo, Leon Sterling and Yoohwan Kim, “*Agile Manufacturing Workcell for Light Mechanical Assembly*”, IEEE Int’l Video Conference on Robotics and Automation, April 1996

Book Chapter

1. Sungkil Lee, Huang-Cheng Kuo, N. Hürkan Balkir, Yoohwan Kim and Gultekin Ozsoyoglu “*A Real-Time Database Server in an Agile Manufacturing System*”, Son, S., ed. Real-Time Database System, Kluwer Academic Publishers, 1996

Online Media

1. James Lint and Yoohwan Kim, “*Ransomware Is Everywhere, So Protect All of Your Electronic Devices*”, InCyberDefense, March 23, 2017, <http://incyberdefense.com/news/ransomware-everywhere-protect-electronic-devices/>

PATENTS

1. U.S. Patent Application 16/559,325, “*Methods And Systems For Transmission Control Protocol (TCP) Communication*”, Yoohwan Kim, Juyeon Jo, Khanh Pham, filed on March 5, 2020

2. US Patent, Provisional patent, Application number 15565267, "Methods and systems for unmanned aircraft systems (UAS) traffic management", Juyeon Jo, Yoohwan Kim, March 29, 2018
3. US Patent 9,509,682, 2016, "Obscuring Usernames During a Login Process", Juyeon Jo, Yoohwan Kim, **granted** on Nov. 29, 2016
4. U.S. Provisional Application, "Methods And Systems For Secure Location Verification", Yoohwan Kim, Juyeon Jo, filed on July 29, 2016
5. US Patent 9,036,782, 2015, "Dual energy backscatter X-ray shoe scanning device", Samuel M Song, Brian Kauke, Yoohwan Kim, Douglas P Boyd, **granted** on May 19, 2015
6. U.S. Provisional Application No. 62/145,953, "Methods And Systems For Unmanned Aircraft System (UAS) Traffic Management", Juyeon Jo, Yoohwan Kim, filed on April 10, 2014
7. US Patent 7,526,807, 2009, "Distributed architecture for statistical overload control against distributed denial of service attacks", Hung-Hsiang Jonathan Chao, Mooi Choo Chuah, Yoohwan Kim, Wing Cheong Lau, **granted** on Apr 28, 2009
8. US Patent App. 09/940,923, 2001, "Method and apparatus for information delivery on the internet", Y Kim, D Chung, filed on Aug. 28, 2001

TRAINING CLASSES TAUGHT

1. "OWASP Top 10 Vulnerabilities", Druvstar, Las Vegas, NV, Mar. 2020 **(1 day)**
2. "Certified Ethical Hacker", Druvstar, Las Vegas, NV, Nov. 2019 **(5 days)**
3. "Communication and Network Security", ISSA Las Vegas Chapter, CISSP Preparation Course, Sep. 30, 2017 **(1 day)**
4. "Security Engineering", ISSA Las Vegas Chapter, CISSP Preparation Course, Mar. 11 2017 **(1 day)**
5. "Communication and Network Security", ISSA Las Vegas Chapter, CISSP Preparation Course, Feb. 27, 2016 **(1 day)**
6. "Telecommunication and Network Security, Cryptography", ISSA Las Vegas Chapter, CISSP Preparation Course, Jan./Feb. 2014 **(2 days)**
7. "Practical Aspects of Cybersecurity With Emphasis on Wireless LAN and SCADA Security", Korea Information and Communications Society (KICS), July 2013 **(3 days)**
8. "Computer Networks and Cybersecurity", NV Gaming Control Board, Jul/Aug, 2012 **(2 days)**
9. "Network Security Theory and Practice", Summer Special Lecture Series, Korea University of Technology Education, July 2009 **(5 days)**
10. "Network Security Theory and Practice", Winter Special Lecture Series, Korea University of Technology Education, Jan. 2008 **(5 days)**

WORKSHOPS TAUGHT

1. "Blockchain Theory and Applications", UNLV Blockchain Workshop Series, April thru October, 2018 **(10 sessions)**
2. "CI Day Workshop on Cybersecurity", UNLV, May 2, 2017
3. "Cybersecurity hands-on practice" UNLV, Open house for high school students, Spring 2014 - 2016
4. "New student orientation" UNLV, College of Engineering, Spring 2014, Spring 2015
5. "Orientation session for capture the flag competition in DEFCON conference for UNLV student security team", UNLV, June 2006

INVITED TALKS

1. *"Software Systems to Trace Covid-19 using Smart Phone App with Blockchain"*, COVID-19 Town Hall: The Impact and Path Forward in Arizona & Nevada, American Lung Association NV & AZ chapters, June 2, 2020, Virtual workshop
2. *"Software Systems to Trace Covid-19 using Smart Phone App with Blockchain"*, NV HIMSS Panel on Nevada's High Tech Weapons in the Fight against COVID 19, May 21, 2020, Virtual workshop
3. *"Software Systems to Trace Covid-19 using Smart Phone App with Blockchain"*, Southern Nevada Forum on Economic Development and Workforce, May 13, 2020, Virtual workshop
4. *"Research on Cybersecurity at UNLV"*, MSTs-UNLV Symposium, Las Vegas, NV, March, 5, 2020
5. *"Blockchain Technology and Its Applications"*, Nevada IT Symposium, Las Vegas, NV, April 4, 2018
6. *"Will Blockchain Technology Change the Audit World?"*, ISACA Las Vegas Chapter Quarterly Meeting, Las Vegas, NV, March 21, 2018
7. *"Blockchain and Cybersecurity"*, 2017 FIRST Las Vegas Technical Colloquium, The Venetian, Las Vegas, NV, Dec. 6, 2017
8. *"Ransomware Risks and Mitigation"*, ISACA Las Vegas Chapter Quarterly Meeting, Las Vegas, NV, March 24, 2017
9. *"Ransomware Risks and Mitigation"*, US Secret Service Electronic Crimes Task Force (ECTF) Quarterly Meeting, Las Vegas, NV, March 3, 2017
10. *"A Secure Location Verification Method For ADS-B"*, MITRE Corporation, McLean VA, Nov. 2016
11. *"Cybersecurity Vulnerabilities in NextGen Air Traffic Control System"*, UKC 2016, Computer Science and Information Technology Symposium (CIT), Aug. 2016
12. *"Cryptocurrency (Bitcoin) and its Applications"*, US Secret Service Electronic Crimes and Identity Fraud Task Force Quarterly Meeting, Nov. 18, 2015
13. *"Application of NTRU Cryptographic Algorithm for securing SCADA communication"*, UKC 2014, Computer Science and Information Technology Symposium (CIT), Aug. 2014
14. *"Thwarting Man-In-The-Middle Attack in SSL with 3rd Party Verification"*, Ajou University, South Korea, June 2013
15. *"A Consumer Level Simulation Model for Demand Response Analysis on Smart Grid"*, Cybersecurity Symposium, UNLV, Sep. 2012
16. *"Design of a secure electronic payment system"*, KSEA Southwest Regional Conference, Feb 2011
17. *"Smart Meter Net Analyzer with Simulation and Visualization"*, NVEnergy, May, 2010
18. *"A Hierarchical Communication Architecture for Secure non-LOS Communication in a UAV Fleet without GPS Links"*, Air Force Research Laboratory, Dayton, OH, Feb. 2009
19. *"The Art of Hacking"*, KOCSEA (Korean Computer Scientists and Engineers Association in America) Annual Workshop, Los Angeles, Dec. 2007
20. *"SFRIC: A Secure Fast Roaming Scheme in Wireless LAN Using ID-Based Cryptography"*, Institute of Computing Technology, Chinese Academy of Sciences, Beijing, China, May 2007
21. *"Hierarchical Communication Architecture for UAV fleet"* to US Air Force representative at UNLV campus, Mar. 2007
22. *"SFRIC: Secure and Fast Roaming Scheme in Wireless LAN"*, KOCSEA (Korean Computer Scientists and Engineers Association), Phoenix, AZ, Dec. 15, 2006
23. *"Designing Wireless Sensor Network"*, 3DSP. Inc., Irvine, CA, Jul. 2006
24. *"The Art of hacking"*, IEEE Las Vegas local chapter, UNLV, Oct. 2006

25. "Hacking techniques", UNLV ACM student chapter, Apr. 2005
26. "Starting a Venture Company for Engineers" at KSEA (Korean-American Scientists and Engineers Association) New Jersey Chapter Technical Seminar, Middletown, NJ, June 2001
27. "A Flexible Software Architecture for Agile Manufacturing" at KSEA Northeast Ohio Chapter 11th Annual Technical Conference, Cleveland, OH, May 1997

News Media Coverage

1. Interviewed for, "As hackers target U.S. cities, Las Vegas signs on to resolution not to pay future ransoms", The Nevada Independent, July, 9, 2019, <https://thenevadaindependent.com/article/as-hackers-target-u-s-cities-las-vegas-signs-on-to-resolution-not-to-pay-future-ransoms>
2. Interviewed for "In IT Together", Hotel Management International Magazine, May 15, 2019, <https://secure.viewer.zmags.com/publication/48605063#/48605063/52>
3. Features on, "UNLV professor breaks down research on blockchain, new cryptocurrency technology", KLAS-TV: 8 News Now, Nov. 2, 2018, <https://www.lasvegasnow.com/news/local-news/unlv-professor-breaks-down-research-on-blockchain-new-cryptocurrency-technology/>
4. Interviewed for, "Las Vegas hopes to spark more interest in cyber security jobs", Las Vegas News Channel 8, May 12, 2017, <http://www.lasvegasnow.com/news/las-vegas-hopes-to-spark-more-interest-in-cyber-security-jobs/713057596>
5. Featured on, "Rebels Will Be Wearing the White Hat", UNLV News Center, May 16, 2017, <https://www.unlv.edu/news/article/rebels-will-be-wearing-white-hat>

PROFESSIONAL EVENTS ATTENDED

Blockchain Events Attended

- | | |
|-----------|---|
| Nov. 2019 | World Crypto Con: Bitcoin Blockchain & Cryptocurrency Conferences, Las Vegas (2 days) |
| Sep. 2019 | IEEE Global Blockchain Summit, NIST, Gaithersburg, MD (3 days) |
| Apr. 2019 | IEEE DappCon, East Bay, CA (4 days) |
| Nov. 2018 | World Crypto Con: Bitcoin Blockchain & Cryptocurrency Conferences, Las Vegas (2 days) |
| Oct. 2018 | Hosho Con 2018: Blockchain Security Conference, Las Vegas, NV (2 days) |
| Sep. 2018 | IEEE Global Blockchain Summit, NIST, Gaithersburg, MD (3 days) |
| Aug. 2018 | Ethereum Training: Blockchain Development Bootcamp, Blockchain Training Alliance, Reston, VA (3 days) |
| Aug. 2018 | BlockShow Americas 2018, Las Vegas, NV (2 days) |
| Apr. 2018 | Blockchain Architecture Training, Blockchain Training Alliance, Reston, VA (3 days) |

SANS Security Training Received

- | | | |
|-----------|--|---|
| Feb. 2013 | SANS Security Conference, Orland, FL (2 days) | <ul style="list-style-type: none"> ▪ <i>Smart Grid Penetration Testing</i> |
| Apr. 2007 | SANS Security Conference, San Diego, CA (6 days) | <ul style="list-style-type: none"> ▪ <i>Security 507: Auditing Networks, Perimeters & Systems</i> |
| Jun. 2006 | SANS Security Conference, Columbia, MO (6 days) | <ul style="list-style-type: none"> ▪ <i>Security 508: System Forensics, Investigation and Response</i> |

- Jun. 2006 SANS Security Conference, Denver, CO (1 day)
 - *Advanced Network Worms and Bot Analysis*
- May 2006 SANS Security Conference, Denver, CO (6 days)
 - *Security 503: Intrusion Detection In-Depth*
- Jun. 2005 SANS Security Conference, Denver, CO (5 days)
 - *Security 617: Assessing and Securing Wireless Networks*
- Apr. 2004 SANS Security Conference, San Diego, CA (6 days)
 - *Security 504: Hacker Techniques, Exploits and Incident Handling*
- Oct. 2004 SANS Security Conference, Las Vegas, NV (6 days)
 - *Security 401: Security Essentials Bootcamp Style*

Other Security Training Received

- Oct. 2019 Combating Financial Fraud Conference, Las Vegas Metro Police (1 day)
- Aug. 2014 BSides Las Vegas Security Workshop, Las Vegas, NV (2 days)
 - *Wireless Network Penetration Testing Techniques*
- Dec. 2013 Infosec Institute, Colorado Springs, CO (5 days)
 - *Certified Ethical Hacker Training*
- Nov. 2010 NIETP CAE/IAE Pre-Conference Workshop, St. Louis, MO (4 days)
 - *Control System (SCADA) Security*
- Jul. 2005 Cisco CIAG class, Baltimore, MD, (4 days)
 - *Professor Bootcamp for Network Security (Firewall / IDS / IPS)*

Security Conferences Attended

- Nov. 2019 CAE Community Meeting, Phoenix, AZ (2 days)
- Nov. 2019 NICE Conference, Phoenix, AZ (2 days)
- Nov. 2019 CyberSmart NV Workshop, Las Vegas, NV (1 day)
- Sep. 2017 SNCA@SANS Las Vegas Workshop (1 day)
- Aug. 2016 Defcon 2016 Conference, Las Vegas, NV (4 days)
- Aug. 2016 BSides Las Vegas 2016, Las Vegas, NV (2 days)
- Aug. 2014 NSF/Intel CPS, Cyber Physical System Security Workshop, Washington, DC (5 days)
- Jul. 2013 Defcon 2013 Conference, Las Vegas, NV (3 days)
- Nov. 2010 CAE/IAE Principals Conference, St. Louis, MO (2 days)
- Jul. 2010 Defcon 2010 Conference, Las Vegas, NV (3 days)
- Apr. 2010 Annual Vanguard Security 2010, Las Vegas, NV (3 days)
- Nov. 2009 CAE/IAE Principals Conference, Tampa, FL (2 days)
- Aug. 2005 Network Security Workshop, Lehigh University, Bethlehem, PA (2 days)
- Jul. 2005 Defcon 2005 Conference, Las Vegas, NV (3 days)
- Feb. 2005 Microsoft Workshop for Trustworthy Computing, Redmond, WA (3 days)
- Dec. 2004 Information Assurance Symposium, Regional Info. Security Center, Pomona, CA (1 day)
- Feb. 2004 RSA Security Conference, San Francisco, CA (4 days)

Other IT Training Received

Dec. 2016	Learning Tree, <i>Hadoop Programming with Java for Big Data Solutions</i> , New York (4 days)
May 2016	Learning Tree, <i>Software Defined Networking</i> , New York, NY (3 days)
June 2015	University of Illinois, GENI 2015, <i>Software Defined Networks Training</i> , Urbana, IL (3 days)
Mar. 2015	Commercial UAS Conference, Alexandria, VA (2 days)
Oct. 2014	Intel Xeon Phi™ Coprocessor Developer Training, Las Vegas, NV (1 day)
Jun. 2014	Learning Tree, <i>Big Data Analytics</i> , Rockville, MD (3 days)
Mar. 2014	Atmel Technology on Tour Mobile Trailer Training, Las Vegas (1 day)
Feb. 2014	Embry-Riddle Aeronautical University, <i>UAS Applications, Operations, and Support Workshop</i> , Las Vegas, NV (2 days)
Sep. 2013	Columbia University, <i>Lean Startup Educators Workshop</i> , New York, NY (3 days)
Mar. 2013	UCLA, <i>Smart Grid Technology Workshop</i> , Los Angeles, CA (5 days)
Nov. 2011	OPNET Modeler network simulator training, Bethesda, MD (5 days)
Nov. 2011	Lancope, <i>Cisco Netflow 101 Seminar</i> , Las Vegas, NV (1 day)
June 2011	Learning Tree, <i>Cloud Computing Technologies</i> , Arlington, VA (3 days)
Oct. 2010	OPNET Modeler network simulator training, Santa Clara, CA (5 days)
Aug. 2007	Xilinx, <i>Training Workshop on advanced VHDL/FPGA</i> , Longmont, Colorado (1 day)
July, 2007	Xilinx, <i>Training Workshop on VHDL/FPGA Programming</i> , Baltimore, MD (3 days)

COURSES TAUGHT AT UNLV

1. CS 789 Advanced Network Security (F 2005, F 2012, F 2014)
2. CS 789 Blockchain Technology (S 2019, S 2020)
3. CS 443 Information Assurance (F 2013, F 2015, F 2016, F 2017, F 2018, F 2019)
4. CS 445 Internet Security (F 2005, F 2006, F 2007, S 2010, S 2012, S 2013, S 2014, S 2016, S 2017, S 2019)
5. CS 448 Computer Security (F 2004, S 2006, S 2007, S 2008, S 2009, S 2011)
6. CS 465 Computer Networks I (F 2008, F 2009, F 2010)
7. CS 466 Computer Networks II (S 2009, S 2011)
8. CS 302 Data Structures (F 2004)
9. CS 219 Computer Organization (S 2006, F 2006, S 2007, F 2007, S 2008, F 2008, F 2009, F 2010, S 2010, S 2011, S 2012, F 2012, S 2013, F 2013, S 2014, F 2014, F 2015, S 2016, F 2016, S 2017, F 2017, F 2018)

STUDENT ADVISING

Graduate Students (Ph.D.)

1. Chol Hyun Park (Current)
2. Alex Hoffman (Current)
3. Russell Harkanson (Current)
 - *TCP Performance Enhancement across HAIPE in a Satellite Communication Environment*
4. Candace Suh-Lee (Current)
 - *Mining Unstructured Log Messages For Security Threat Detection*

5. Sungchul Lee (Spring 2018)
 - *Deep Data Locality in Apache Hadoop*

Graduate Students (MS)

1. Phillippe Austria (Summer 2020)
 - *Multi-Level Blockchain Architecture for high Scalability*
2. Akhil David (Summer 2019)
 - *Managing IoT Data on HyperLedger Blockchain*
3. Sanika Raje (Spring 2019)
 - *Performance Comparison of Message Queuing methods*
4. Vinay Kumar Calastray Ramesh (Spring 2019)
 - *Storing IoT Data Securely in a Private Ethereum Blockchain*
5. Zachary Laney (Spring 2019)
 - *Private Group Communication in Blockchain Based on Diffie-Hellman Key Exchange*
6. Aniket Yewale (Summer 2018)
 - *Study of Blockchain-As-a-Service Systems with a Case Study of Hyperledger Fabric Implementation on Kubernetes*
7. Priyanka Thota (Spring 2017)
 - *Implementation And Analysis Of Communication Protocols In Internet Of Things*
8. Akshitha Reddy Chintalaphani (Spring 2017)
 - *Survey And Analysis Of Android Authentication Using App Locker*
9. Sneha Goswami (Spring 2017)
 - *Scalability Analysis of Blockchain Through Blockchain Simulator*
10. Charbel Azzi (Fall 2016)
 - *Vulnerability Analysis and Security Framework for ZigBee communication in IoT*
11. Rohit Raj (Fall 2016), MGM Resorts International
 - *A Case Study on Enterprise Content Management using Agile Methodology*
12. Sai Ram Ganti (Spring, 2016)
 - *Security Threats From UAS And Its Mitigation Through Detection And Tracking*
13. Candace Suh-Lee (Spring, 2016), Electric Power Research Institute (EPRI), Inc.
 - *Mining Unstructured Log Messages For Security Threat Detection*
14. Monetta Shaw (Spring 2016)
 - *A Web-Based Solution for Small Unmanned Aircraft System (sUAS) Traffic Management*
15. Anusha Ramanathan (Spring, 2015), EMC Corp.
 - *A Multi-Level Trust Management For Internet Of Things*
16. Tejaswini Papireddy (Spring, 2015)
 - *Tracking and Monitoring Unmanned Aircraft Systems Activities with Crowd-Based Mobile Apps*
17. Surendra Shrestha (Spring, 2014)
 - *A Light-Weight Real-Time Privacy Protection Scheme for Video Surveillance by UAS*
18. Naga Shalini Vadlamani (Fall 2013), Bally Technologies
 - *A Survey on Detection and Defense of Application Layer DDoS Attacks*
19. Christopher Clark (Spring 2013), Sandia National Lab
 - *Insider Threat Analysis and Detection*

20. Amritha Puliadi Premnath (Spring 2013)
 - *Application of NTRU Cryptographic Algorithm For Securing SCADA Communication*
21. Sungchul Lee (Spring 2012), Ph.D. Program at UNLV
 - *Privacy protection schemes in Smart Grid networks*
22. Jungeun Kim (Spring 2010), Microsoft Corp.
 - *A secure online credit card transaction method*
23. Adam Seymour and Raymond Yost (Project: Fall 2009)
 - *Hardware cryptographic system design & implementation of secure cellular communication*
24. Deepa Uppala (Spring 2008), Yahoo, Inc.
 - *Graphical Framework for Managing Component Oriented Graphic system*
25. Kurtis Kopf (Project: Fall, 2007 – Fall 2008), Summerlight, Inc.
 - *A Hierarchical Communication Arch. for Secure non-LOS Comm. in a UAV Fleet without GPS Links*
26. Kunal Metkar (Fall 2007), Allegro Development Corp.
 - *Defense against Buffer Overflow Attack by Software Design diversity*
27. Nathan Whittacre (Fall 2007), Stimulus Technologies
 - *Collaborative Intelligent Email Ranking System*
28. Sourabh Ghose (Spring 2007), Software AG, Singapore
 - *Design Implementation & analysis of a dynamic cryptography algorithm with Applications*
29. Karthik Raghavan (Spring 2007), Bally Technologies
 - *Security Protocol Based on Random Key Generation for an RFID System*
30. Amruta Tilaye (Summer 2006), PriceWaterhouseCoopers, India
 - *WinWebWatcher - A Network Security Utility for System Administrators*

Undergraduate Students & Interns

1. Xingwei "Raymond" Liang (Spring 2019), UNLV
 - *Developing telemedicine software for remote patient consultation*
2. Amanuel Ketebo, Khyri Carter, Justin Sandoval, Jennifer Lee, Timmy Nguyen (Fall 2018 – Spring 2019), UNLV
 - *Developing blockchain-based customer incentive management system*
3. Lucas Miranda Tonon (Summer 2016), Universidade Estadual de Campinas, Limeira, Brazil
 - *Implementing Network Security Functions in Software Defined Network using Open Daylight*
4. David Truax and Daniel Truax (Spring 2016), UNLV
 - *Investigating the Security Vulnerabilities of NFC-based physical access systems*
5. John Parin (Summer 2015), Rensselaer Polytechnic Institute
 - *Tracking Unmanned Aircraft Systems with ADS-B using Software Defined Radio*
6. Jake Lee (Summer 2014), Columbia University
 - *An Analysis of Energy and Hardware Impacts on the Bitcoin Mining Network*
7. Sharon Fang (Summer 2014), Duke University
 - *The Status and Trends in Cryptocurrency*
8. Bridger Heizer (Fall 2012 – Spring 2013), US Government
 - *Cybersecurity analysis of electrical power grid*
9. Dominic Mohrhardt and Jeffrey Richardson (Fall 2009 – Spring 2010), UNLV
 - *Wireless Network Cracker, a handheld WEP/WPA key cracking device*
10. Kevin Goble, et al (Fall 2010), UNLV

- *NCIIA proposal, "Drowsiness prevention for drivers with brainwave measurement & manipulation"*
- 11. Kareem Matariyeh and Chehun Kim (Fall 2007 – Fall 2008), US Air Force
 - *Development of High Performance, Low Energy Consumption Reconfigurable Computing Platform and Software Architecture for Cooperative UAVs*
- 12. Andrew Menrije and Desiree Preussler (Summer 2005), UNLV
 - *Survey on Elliptic Curve Cryptography*

POSTDOCTORS AND VISITING SCHOLARS HOSTED

1. Prof. Guodong Zhang (Shenyang Aerospace University, China), Visiting Scholar, 2016-2017
2. Mr. Eunsung Lee (Ministry of Science, ICT and Future Planning, Republic of Korea), Visiting Scholar, 2015-2016
3. Dr. Richard Afolabi, Postdoctor, 2015
4. Prof. Cheeyang Song (Kyungpook National University, South Korea), Visiting Scholar, 2014-2015
5. Prof. Jinho Ahn (Kyonggi University, South Korea), Visiting Scholar, 2014
6. Dr. Yan Jin, Postdoctor, 2008-2010
7. Prof. Hyejung Jung (PyeongTaek University, South Korea), Visiting Scholar, 2008-2009
8. Mr. Tatsuya Suto (Japan Patent Office), Visiting Scholar, 2007-2008
9. Dr. Wei Ren, Postdoctor, 2006-2007
10. Dr. Ahmed Abd El Al, Postdoctor, 2005

ACADAEMIC SERVICES AT UNLV

- | | | |
|---------------------------|-----------------------------|--|
| ▪ Spring 2016 – present | (College of Engineering) | Cybersecurity Curriculum Development Working Group Coordinator |
| ▪ Fall 2015 | (College of Engineering) | Strategic Planning Task Force |
| ▪ Fall 2015 | (University) | From R2PC to Top Tier: Graduate Enrollment Management, Department Representative |
| ▪ Spring 2014, 2015 | (College of Engineering) | New Student Orientation Speaker |
| ▪ Spring 2014 – present | (College of Engineering) | UAS Working Group Coordinator |
| ▪ Spring 2013 – present | (College of Engineering) | Internship Committee member & Computer Science Internship advisor |
| ▪ Fall 2013 | (University) | IT Master Planning reviewer |
| ▪ Fall 2013 | (College of Engineering) | UAS Minor Program Development committee |
| ▪ Spring 2012 | (Dept. of Computer Science) | Faculty Search Committee Chair |
| ▪ Fall 2008 – present | (Dept. of Computer Science) | Ph.D. qualifying exam committee |
| ▪ Spring 2008 | (Dept. of Computer Science) | Assisted ABET accreditation process |
| ▪ Spring 2006 – present | (Dept. of Computer Science) | CS Honor Society UPE Advisor |
| ▪ Fall 2006 – Spring 2008 | (Faculty Senate) | Academic Standard Committee |
| ▪ Fall 2006 – Spring 2008 | (Faculty Senate) | Program Review Committee |
| ▪ Fall 2006 – Spring 2008 | (Graduate Council) | Curriculum Committee |
| ▪ Fall 2006 – Spring 2008 | (Graduate Council) | New Programs Committee |
| ▪ Fall 2005 – present | (Dept. of Computer Science) | Director of Computer Security Lab |
| ▪ Fall 2005 – Spring 2006 | (Dept. of Computer Science) | Faculty Search Committee |
| ▪ Fall 2004 – present | (Dept. of Computer Science) | Graduate Committee |

- Fall 2004 – Fall 2008 (Dept. of Computer Science) Colloquium Coordinator
- Fall 2004 – Spring 2005 (Dept. of Computer Science) Space and Equipment Committee

PROFESSIONAL SERVICES

Conferences Organization

1. Chair, UNLV Blockchain Day, Las Vegas, NV, May 4, 2019
2. Organizer, UNLV Blockchain Development Session, World Crypto Con: Bitcoin Blockchain & Cryptocurrency Conferences, Las Vegas, NV, Nov. 2, 2018
3. UNLV Booth Organizer, World Crypto Con: Bitcoin Blockchain & Cryptocurrency Conferences, Las Vegas, NV, Oct. 31 – Nov. 2, 2018
4. Local Chair, KOCSEA Technical Symposium 2017, Las Vegas, NV
5. Committee member, ACM SAC IoT Track, 2018
6. Local Chair, IEEE Conf. on Communication and Network Security (CNS), Las Vegas, NV, Oct. 2017
7. Committee member, ACM SAC IoT Track, 2017
8. Chair, CIT (Computer Science and IT Technologies) Symposium, KSEA UKC 2016 (Korean-American Scientists and Engineers Association, US-Korea Conference), Dallas, TX, 2016
9. Organizer, ISVC 2014, Special Track, Las Vegas, NV, 2014
10. Committee member, ACM SAC SGST Track, 2013
11. Executive Director, KSEA UKC 2012, Los Angeles, CA
12. President, KOCSEA (Korean Computer Scientists and Engineers Association in America) Technical Symposium 2011, San Jose, CA
13. General Chair, KOCSEA Technical Symposium 2010, Washington, DC
14. Program Chair, KOCSEA Technical Symposium 2009, Las Vegas, NV
15. Program Chair, Internet and Wireless Security Track, ITNG 2007, Las Vegas, NV, Apr 2-4, 2007
16. Session Chair, Wireless Sensor Networks, IEEE CCNC 2007, Las Vegas, NV Jan 11-13, 2007
17. Vice Program Chair, Security & Fault Tolerance Track, EUC 2006 (IFIP International Conference on Embedded and Ubiquitous Computing), Seoul, Korea, Aug 1-4, 2006
18. Program Chair, Internet and Wireless Security Track, ITNG 2006, Las Vegas, NV, Apr 10-12, 2006
19. Committee member, SecUbiq 2005 (International Workshop on Security in Ubiquitous Computing Systems), Nagasaki, Japan, Dec 6-9, 2005
20. Track chair, Wireless Ad Hoc/Sensor Networks and Network Security Track, IEEE ITCC 2005, Las Vegas, NV, Apr 4-6, 2005

Journal Editorship

1. Editorial Board Member for a book, "Information Assurance and Security Technologies for Risk Assessment and Threat Management: Advances", by IGI, 2011
2. Served as a Guest Editor for International Journal of Information Technology, Vol. 11, No. 2, 2005

Paper / Proposal Review

1. Proposal Review
 - NSF CyberCorps(R) Scholarship for Service (SFS) Program Panel Reviewer, 2016
 - NSF SSE & SSI Program Ad-hoc Reviewer, 2014

2. Journal Paper Review

- IEEE Transactions on Aerospace and Electronic Systems
- IEEE Transactions on Secure and Dependable Computing (TDSC)
- IEEE Journal of Selected Areas In Communications – Special Issue on Network Security
- IEEE Communications Letters
- IEEE Communications magazine
- IEEE Computer magazine
- KSII Transactions on Internet and Information Systems, KIISE Journal
- International Journal of Computer and Information Science (IJCIS)
- International Journal of Security and Networks (IJSN)
- International Journal on Artificial Intelligence Tools
- International Journal of Computer Science and Network Security
- Special Issue on Telecommunication Systems
- Journal of Applied Mathematics, Journal of Information
- International Journal of Ubiquitous Computing (IJUC)
- Sensors Journal, International Journal of Networked and Distributed Computing (IJNDC)
- IBM Journal, Journal of Intelligent Service Robotics (IJSR)
- Journal of Applied Computing and Informatics
- International Journal of Transportation Science and Technology (IJTST)

3. Conference Paper Review

- IEEE Tencon 2005, SecUbiq 2005, ICC 2006 & 2007, EUC 2006, CISSE 2006, SERA 2007, HICSS 2010, CSIIRW 2011, TrustCom 2011, i-JET 2012, CSIIRW 2012, ACM Smart Grid Symposium 2012, ACM SAC 2014 - 2017, ICUAS 2014 & 2016, ISVC 2015, IEEE PIMRC 2015, HICSS 2016

4. Book Chapter Review

- “Green IT: Technologies and Applications” by Springer, “Handbook of Research in Wireless Security” by Idea Group Research, “Security in Wireless Mesh Network” by Auerbach Publications, CRC Press

Standards committee

1. NEMA DICOS standard working group for TDR (Threat Detection Report), 2011-2012

UAS Working Group Coordination (UNLV)

1. Coordinator, UNLV UAS Research Working Group, Spring 2014 – present
 - Held bi-weekly meetings, invited 50+ members and speakers
 - Managed the mailing list, web site, and distributed UAS information
2. Coordinator, UAS for Public Safety Working Group, Las Vegas, NV, 2015 –2016
 - Managed the meetings and developed major proposals
3. UAS Minor program development, UNLV College of Engineering, Fall 2013 - 2015
4. Participated in events organized by Nevada UAS test site and NASA

Cybersecurity Degree Task Force Coordination (UNLV)

1. Managing Cybersecurity Task Force at UNLV, 2015 – present
 - Organized meetings and surveys, invited industrial members, and visited partner sites
2. Developing Cybersecurity Degree programs, 2016 – present

Community engagement

1. Member, Blockchain course curriculum review committee, Blockchain.com, LLC, 2019 – present
2. Advisor, Blockchain product development, Axel, Las Vegas, NV, 2019 – present
3. Advisor, Cybersecurity training program, Druvstar, Las Vegas, NV, 2019 – present
4. Member, NV Covid-19 Contact Tracing Workgroup, April – June, 2020
5. Technical advisor, Cybersecurity analysis for medical devices, Imatrex, April, 2020 – present

AWARDS

1. Best Full Paper Runner-Up Award, CISR Conference, Oak Ridge National Lab, Apr. 2017
2. Outstanding Researcher of 2014, Dept. of Computer Science, UNLV, Apr. 2015
3. Best Teacher of the Year nominee, College of Engineering, UNLV, Apr. 2011
4. Outstanding SCS Teacher for 2007, School of Computer Science, UNLV, April 2008
5. Outstanding SCS Researcher for 2005, School of Computer Science, UNLV, April 2006
6. Recognition of Excellence award, Lucent Technologies, Whippany, NJ, Feb. 1999
7. Best presenter of the year award, KSEA 11th Annual Tech Conference, Cleveland, OH, May 1997

PROFESSIONAL SOCIETY MEMBERSHIP

1. IEEE member (1995 ~), IEEE Las Vegas section member and publicity chair (2005)
2. ISACA (Information Systems Audit and Control Association) member, Las Vegas Chapter (2012 ~)
3. InfraGard (Partnership between FBI and private sector) member, Las Vegas Chapter (2010 ~ 2015)
4. KSEA (Korean-American Scientists and Engineers Association) member (1996 ~), Membership Director (2010 ~ 2011)
5. KOCSEA (Korean Computer Scientists and Engineers Association in America), member (2006 ~), Vice-President (2010), President (2011)