

# Lingyu Wang

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## RESEARCH INTERESTS

Security and Privacy. Specifically, data privacy, vulnerability analysis, intrusion detection, security metrics.

## EDUCATION

- |           |   |
|-----------|---|
| 2000-2006 | Ph.D. in Information Technology<br>George Mason University, USA<br>Co-advisor: Dr. Sushil Jajodia and Dr. Duminda Wijesekera<br>Dissertation Topic: "Preserving privacy in on-line analytical processing (OLAP) data cubes" |
| 1993-1996 | M.E. in Material Engineering, Shanghai Jiao Tong University, China  |
| 1989-1993 | B.E. in Aeronautical Engineering, Shenyang Institute of Aeronautical Engineering, China   |

## ACADEMIC EXPERIENCE

- |              |  |
|--------------|--|
| 2010-present | Associate Professor<br>Concordia Institute for Information Systems Engineering<br>Concordia University, Montreal, Canada |
| 2006-2010    | Assistant Professor<br>Concordia Institute for Information Systems Engineering<br>Concordia University, Montreal, Canada |
| 2000-2006    | Research Assistant<br>Center for Secure Information Systems (CSIS), George Mason University, Fairfax, USA                |
| 1994-1996    | Research and Teaching Assistant<br>Shanghai Jiao Tong University, Shanghai, China  |

## PUBLICATIONS

(An asterisk (\*) indicates the co-author was my student)

### Authored Book:

1. Lingyu Wang, Sushil Jajodia, Duminda Wijesekera, "Preserving Privacy in On-line Analytical Processing (OLAP)," ISBN: 0-387-46273-2, Springer, Berlin, 2007, 190 Pages.
2. Lingyu Wang, Massimiliano Albanese, Sushil Jajodia: Network Hardening - An Automated Approach to Improving Network Security. Springer Briefs in Computer Science, Springer 2014, ISBN 978-3-319-04611-2, pp. 1-60.

### Book Chapters:

3. Lingyu Wang, Sushil Jajodia, "An approach to preventing, correlating, and predicting multistep network attacks," in Intrusion Detection Systems, Roberto Di Pietro and Luigi V. Mancini, eds., Springer, New York, 2008, pages 93-128.
4. Lingyu Wang, Sushil Jajodia, "Security in data warehouses and OLAP systems," in Handbook of Database Security: Applications and Trends, Michael Gertz and Sushil Jajodia, editors, Springer, New York, 2008, pages 191-212.

5. Lingyu Wang, Sushil Jajodia, "Vulnerability-centric alert correlation," in *Information Assurance: Dependability and Security in Networked Systems*, Yi Qian, James Joshi, David Tipper, Prashant Krishnamurthy, editors, Morgan Kaufmann, Amsterdam, 2008, pages 279-304.
6. Lingyu Wang, Sushil Jajodia, Duminda Wijesekera, "Preserving privacy in on-line analytical processing data cubes," in *Secure Data Management in Decentralized Systems*, Ting Yu and Sushil Jajodia, editors, Springer, Berlin, 2007, pages 357-382.

#### Edited Books:

7. Lingyu Wang, Basit Shafiq (Eds.): *Data and Applications Security and Privacy XXVII - 27th Annual IFIP WG 11.3 Conference, DBSec 2013, Newark, NJ, USA, July 15-17, 2013. Proceedings. Lecture Notes in Computer Science 7964*, Springer 2013, ISBN 978-3-642-39255-9.
8. Yves Deswarte, Frederic Cuppens, Sushil Jajodia, Lingyu Wang, eds., *Security and Protection in Information Processing Systems*, ISBN 1-4020-8142-1, Kluwer Academic Publishers, Boston, 2004, 562 pages.
9. Yves Deswarte, Frederic Cuppens, Sushil Jajodia, Lingyu Wang, eds., *Information Security Management, Education, and Privacy*, ISBN 1-4020-8144-8, Kluwer Academic Publishers, Boston, 2004, 328 pages.

#### Refereed Journal Papers:

10. Wen Ming Liu\*, Lingyu Wang, Lei Zhang, Shunzhi Zhu, "k-Jump: a Strategy to Design Publicly-Known Algorithms for Privacy Preserving Micro-Data Disclosure," *Journal of Computer Security*, Accepted.
11. Saed Alrabaee\*, Noman Saleem\*, Stere Preda, Lingyu Wang, Mourad Debbabi, "OBA2: An Onion Approach to Binary Code Authorship Attribution," *Digital Investigation*, Volume 11, Supplement 1, May 2014, pages S94-S103.
12. Zhen Xu, Cong Wang, Kui Ren, and Lingyu Wang, "Proof-carrying Cloud Computation: the Case of Convex Optimization," *IEEE Transactions on Information Forensics and Security*, Accepted.
13. Wen Ming Liu\*, Lingyu Wang, Pengsu Cheng\*, Kui Ren, Shunzhi Zhu and Mourad Debbabi, "PPTP: Privacy-Preserving Traffic Padding in Web-Based Applications," *IEEE Trans. on Dependable and Secure Computing (TDSC)*, Accepted.
14. Lingyu Wang, Sushil Jajodia, Anoop Singhal, Pengsu Cheng\*, Steven Noel, "k-Zero day safety: A network security metric for measuring the risk of unknown vulnerabilities," *IEEE Trans. on Dependable and Secure Computing (TDSC)*, Vol. 11, No. 1, 2014, pages 30-44..
15. Yong Zeng, Lingyu Wang (Eds.), "Secure collaboration in design and supply chain management (Special issue)," *Computers in Industry*, Volume 63, Number 6 (2012), 543-544.
16. Yong Zeng, Lingyu Wang, Xiaoguang Deng, Xinlin Cao, Nafisa Khundker\*, "Secure collaboration in global design and supply chain environment: Problem analysis and literature review," *Computers in Industry*, Volume 63, Number 6 (2012), pages 545-556.
17. Da Yong Zhang\*, Xinlin Cao, Lingyu Wang, Yong Zeng, "Mitigating the risk of information leakage in a two-level supply chain through optimal supplier selection," *Journal of Intelligent Manufacturing*, Volume 23, Number 4 (2012), pages 1351-1364.
18. Da Yong Zhang\*, Yong Zeng, Lingyu Wang, Hongtao Li, Yuanfeng Geng, "Modeling and evaluating information leakage caused by inferences in supply chains", *Computers in Industry*, Vol. 62, No. 3, April 2011, pages 351-363. [ISI Impact factor: 1.709]
19. Bo Zhu, Sanjeev Setia, Sushil Jajodia, and Lingyu Wang, "Providing Witness Anonymity under Peer-to-Peer Settings," *IEEE Transactions on Information Forensics and Security*, Vol. 5, No. 2, 2010, pages 324-336. [ISI Impact factor: 1.895]
20. Noman Mohammed\*, Hadi Otrok, Lingyu Wang, Mourad Debbabi, and Prabir Bhattacharya, "Mechanism Design-Based Secure Leader Election Model for Intrusion Detection in MANET," *IEEE Transactions on Dependable and Secure Computing (TDSC)*, Vol. 8, No. 1, 2011, pages 89-103. [ISI Impact factor: 1.059]
21. Bo Zhu, Sanjeev Setia, Sushil Jajodia, Sankardas Roy, and Lingyu Wang, "Localized Multicast: Efficient and Distributed Replica Detection in Large-scale Sensor Networks," *IEEE Transactions on Mobile Computing (TMC)*, Vol. 8, No. 7, 2010, pages 913-926. [ISI Impact factor: 2.395]
22. Steven Noel, Lingyu Wang, Anoop Singhal, Sushil Jajodia, "Measuring security risks of networks using attack graphs," *International Journal of Next-Generation Computing*, Vol. 1, No. 1, July 2010, pages 113-123.
23. Bo Zhu, Kui Ren, Lingyu Wang, and Mourad Debbabi, "PCM: A Privacy-Preserving Detection Mechanism in Mobile Ad Hoc Networks," *Wiley Security and Communication Networks (SCN)*, Volume 3, Issue 2-3, pages 167-184, 2010.

24. Benjamin Fung, Ke Wang, Lingyu Wang, and Patrick Hung, "Privacy-preserving data publishing for cluster analysis," *Data & Knowledge Engineering (DKE)*, Vol. 68, No. 6, 2009, pages 552-575.
25. Chao Yao, Lingyu Wang, X. Sean Wang, Claudio Bettini, Sushil Jajodia, "Evaluating privacy threats in released database views by symmetric indistinguishability," *Journal of Computer Security*, Vol. 17, No. 1, pages 5-42, 2009.
26. Chamseddine Talhi, Djedjiga Mouhebb\*, Vitor Nunes de Lima\*, Mourad Debbabi, Lingyu Wang, Makan Pourzandi, "Usability of Security Specication Approaches for UML Design: A Survey," *Journal of Object Technology*, Vol. 8, No. 6, pages 102-122, 2009.
27. Hadi Otrók, Noman Mohammed\*, Lingyu Wang, Mourad Debbabi and Prabir Bhattacharya, "A game-theoretic intrusion detection model for mobile ad-hoc networks," *Computer Communications, Special Issue on Algorithmic and Theoretical Aspects of Wireless Ad Hoc and Sensor Networks*, Vol. 31, No. 4, 2007, pages 708-721.
28. Lingyu Wang, Chao Yao, Anoop Singhal, Sushil Jajodia, "Implementing interactive analysis of attack graphs using relational databases," *Journal of Computer Security*, Vol. 16, No. 4, 2008, pages 419-436.
29. Lingyu Wang, Yingjiu Li, Sushil Jajodia, Duminda Wijesekera, "Parity-based inference control for multi-dimensional range sum queries," *Journal of Computer Security*, Vol. 15, No. 4, 2007, pages 417-445.
30. Lingyu Wang, Steven Noel, Sushil Jajodia, "Minimum-cost network hardening using attack graphs," *Computer Communications*, Volume 29, Issue 18, 28 November 2006, Pages 3812-3824.
31. Lingyu Wang, Anyi Liu, Sushil Jajodia, "Using attack graphs for correlating, hypothesizing, and predicting network intrusion alerts," *Computer Communications*, Vol. 29, No. 15, 2006, pages 2917-2933.
32. Lingyu Wang, Duminda Wijesekera, Sushil Jajodia, "Cardinality-based inference control in data cubes," *Journal of Computer Security*, Vol. 12, No. 5, 2004, pages 655-692.

Refereed Conference and Workshop Papers:

33. Lingyu Wang, Mengyuan Zhang\*, Sushil Jajodia, Anoop Singhal, Massimiliano Albanese, "Modeling Network Diversity for Evaluating the Robustness of Networks against Zero-Day Attacks," *Proc. 19th European Symposium on Research in Computer Security (ESORICS 2014)*, Springer-Verlag Lecture Notes in Computer Science (LNCS), Vol. 8713, Wroclaw, Poland, September 7-11, 2014, pages 494-511 (Acceptance ratio 58/234).
34. Yuan Hong, Jaideep Vaidya, Haibing Lu and Lingyu Wang, "Collaboratively Solving Traveling Salesman Problem with Limited Disclosure," in *Proceedings of the 28th Annual IFIP WG 11.3 Conference on Data and Applications Security and Privacy (DBSEC 2014)*, Springer-Verlag Lecture Notes in Computer Science (LNCS), Vol. 8566, July 14-16, 2014, Vienna, Austria.
35. Wen Ming Liu\*, Lingyu Wang, Kui Ren and Mourad Debbabi, "Background Knowledge-Resistant Traffic Padding for Preserving User Privacy in Web-Based Applications," *Proc. The 5th IEEE International Conference and on Cloud Computing Technology and Science (IEEE CloudCom 2013)*, Bristol, UK, December 2-5, 2013 (Acceptance ratio 11/60).
36. William Nzoukou Tankou\*, Lingyu Wang, Sushil Jajodia and Anoop Singhal, "A unified framework for measuring a network's mean time-to-compromise," *Proc. 32nd IEEE International Symposium on Reliable Distributed Systems (SRDS 2013)*, Braga, Portugal, September 30 - October 3, 2013 (Acceptance ratio 22/67).
37. Massimiliano Albanese, Sushil Jajodia, Anoop Singhal, Lingyu Wang, "An efficient approach to assessing the risk of zero-day vulnerabilities," *Proc. 10th International Conference on Security and Cryptography (SECRYPT 2013)*, Reykjavik, Iceland, July 29-31, 2013 (*Best Paper Award*).
38. Zhen Xu, Cong Wang, Qian Wang, Kui Ren, and Lingyu Wang, "Proof-carrying Cloud Computation: the Case of Convex Optimization," *Proc. IEEE INFOCOM mini-conference*, 2013 (Acceptance ratio 25%).
39. Pengsu Cheng\*, Lingyu Wang, Sushil Jajodia, Anoop Singhal, "Aggregating CVSS base scores for semantics-rich network security metrics," *Proc. 31st IEEE International Symposium on Reliable Distributed Systems (SRDS 2012)*, Irvine, California, October 8-11, 2012 (Acceptance Ratio 28/114).
40. Wen Ming Liu\*, Lingyu Wang, Kui Ren, Pengsu Cheng\* and Mourad Debbabi, "k-Indistinguishable Traffic Padding in Web Applications," *Proc. The 12th Privacy Enhancing Technologies Symposium (PETS 2012)*, July 11-13, 2012, Vigo, Spain, pages 79-99 (Acceptance Ratio 16/72).
41. Wen Ming Liu\*, Lingyu Wang, "Decoupling Privacy Preservation from Utility Optimization for Improving Algorithm Efficiency," *Proc. 2nd ACM Conference on Data and Applications Security (CODASPY 2012)*, Feb 7-9, 2012 (Acceptance Ratio 21/113  $\approx$  19%).

42. Wen Ming Liu\*, Lingyu Wang, Pengsu Cheng\*, Mourad Debbabi, "Privacy-Preserving Traffic Padding in Web-Based Applications," Proc. Workshop on Privacy in the Electronic Society (WPES 2011), October 11, 2011. (Short Paper, Acceptance Ratio 24/73  $\approx$  33%).
43. Lingyu Wang, Sushil Jajodia, Anoop Singhal, Steven Noel, "k-Zero day safety: Measuring the security risk of networks against unknown attacks," Proc. 15th European Symposium on Research in Computer Security (ESORICS 2010), Springer-Verlag Lecture Notes in Computer Science (LNCS), Vol. 6345, 20-22 September, 2010, pages 573-587 (Acceptance ratio 42/201  $\approx$  21%).
44. Hamad Binsalleeh, Thomas Ormerod\*, Amine Boukhtouta, Prosenjit Sinha, Amr Youssef, Mourad Debbabi, Lingyu Wang, "On the Analysis of the Zeus Botnet Crimeware Toolkit," Proc. 8th Annual Conference on Privacy, Security and Trust (PST 2010), August 17-19, 2010, pages 195-200 (*Best Paper Award*).
45. Djedjiga Mouheb\*, Dima Alhadidi, Mariam Nouh, Mourad Debbabi, Lingyu Wang, Makan Pourzandi, "Aspect Weaving in UML Activity Diagrams: A Semantic and Algorithmic Framework," 7th International Workshop on Formal Aspects of Component Software (FACS 2010), pages 182-199, 2010.
46. Mariam Nouh, Raha Ziarati\*, Djedjiga Mouheb\*, Dima Alhadidi, Mourad Debbabi, Lingyu Wang, Makan Pourzandi, "Aspect Weaver: A Model Transformation Approach for UML Models," Proc. 20th International Conference of the Center for Advanced Studies on Collaborative Research (CASCON 2010), November 7 - 10, 2010.
47. Pengsu Cheng\*, Lingyu Wang, Tao Long\*, "Compressing Attack Graphs through Reference Encoding," Proc. 3rd IEEE International Symposium on Trust, Security and Privacy for Emerging Applications (TSP 2010), June 29-July 1, 2010, pages 1026-1031.
48. Thomas Ormerod\*, Lingyu Wang, Mourad Debbabi, Amr Youssef, Hamad Binsalleeh, Amine Boukhtouta, and Prosenjit Sinha, "Defaming Botnet Toolkits: A Bottom-Up Approach to Mitigating the Threat," Proc. 4th International Conference on Emerging Security Information, Systems and Technologies (SECURWARE 2010), July 18-25, 2010, pages 195-200.
49. Wen Ming Liu\*, Lingyu Wang, Lei Zhang, "K-Jump Strategy for Privacy Preserving Micro-Data Disclosure," Proc. 13th International Conference on Database Theory (ICDT 2010), March 22-26, 2010, pages 104-115.
50. Djedjiga Mouheb\*, Chamseddine Talhi, Mariam Nouh, Vitor Lima\*, Mourad Debbabi, Lingyu Wang, Makan Pourzandi, "Aspect-Oriented Modeling for Representing and Integrating Security Concerns in UML," Proc. 8th IEEE/ACIS International Conference on Software Engineering Research, Management and Applications (SERA 2010), May 24 - 26, 2010, pages 197-213.
51. Serguei A. Mokhov, Jian Li, Lingyu Wang, "Simple Dynamic Key Management in SQL Randomization," Proc. The 3rd IFIP International Conference on New Technologies, Mobility and Security (NTMS 2009), December 20 - 23, 2009, pages 1-5.
52. Lei Zhang, Lingyu Wang, Sushil Jajodia, Alexander Brodsky, "L-Cover: Preserving Diversity by Anonymity," Proc. 6th VLDB Workshop on Secure Data Management (SDM 2009), Springer-Verlag Lecture Notes in Computer Science (LNCS), Vol. 5776, August 28, 2009, pages 158-171.
53. Djedjiga Mouheb\*, Chamseddine Talhi, M. Azzam, Vitor Lima\*, Mourad Debbabi, Lingyu Wang, Makan Pourzandi, "An Aspect-Oriented Approach for Software Security Hardening: from Design to Implementation," Proc. The 8th International Conference on Software Methodologies, Tools and Techniques (SOMET 2009), September 23 - 25, 2009, pages 203-222.
54. Vitor Lima\*, Djedjiga Mouheb\*, Chamseddine Talhi, Mourad Debbabi, Lingyu Wang, Makan Pourzandi, "Formal Verification and Validation of UML 2.0 Sequence Diagrams using Source and Destination of Messages," Proc. The 4th International Workshop on Systems Software Verification (SSV 2009), Electronic Notes in Theoretical Computer Science (ENTCS), Vol. 254, pages 143-160.
55. Djedjiga Mouheb\*, Chamseddine Talhi, Vitor Lima\*, Mourad Debbabi, Lingyu Wang, Makan Pourzandi, "Weaving Security Aspects into UML 2.0 Design Models," Proc. The 13th Aspect Oriented Modeling Workshop (AOM 2009), March 2, 2009, ACM Press, pages 7-12.
56. Yiming Wang\*, Lingyu Wang, B. C. M. Fung, "Preserving Privacy for Location-Based Services with Consecutive Queries," Proc. The IEEE International Conference on Communications - Communication and Information Systems Security Symposium (ICC 2009 CISS), June 14-18, 2009, pages 1-5.
57. Tania Islam\*, Lingyu Wang, "A Heuristic Approach to Reducing the Cost of Network Hardening Using Attack Graph," Proc. The 2nd IFIP International Conference on New Technologies, Mobility and Security (NTMS 2008), November 5 - 7, 2008, pages 1-5.

58. Shuai Liu\*, Wei Li\*, Lingyu Wang, "Towards Efficient Over-encryption in Outsourced Databases Using Secret Sharing," Proc. The 2nd IFIP International Conference on New Technologies, Mobility and Security (NTMS 2008), November 5 - 7, 2008, pages 1-5.
59. Marcel Frigault\*, Lingyu Wang, Anoop Singhal, Sushil Jajodia, "Measuring network security using Dynamic Bayesian network," Proc. 4th ACM Workshop on Quality of Protection (QoP), October 27, 2008, pages 23-30.
60. Hadi Otrouk, Noman Mohammed\*, Lingyu Wang, Mourad Debbabi and Prabir Bhattacharya, "A Moderate to Robust Game Theoretical Model for Intrusion Detection in MANETs," Proc. International Workshop on Security and Privacy in Wireless and Mobile Computing, Networking and Communications (SecPri\_WiMob 2008), October 12, 2008, IEEE Press, pages 608-612.
61. Feng Chen, Lingyu Wang, Jinshu Su, "An Efficient Approach to Minimum-Cost Network Hardening Using Attack Graphs," Proc. The Fourth International Conference on Information Assurance and Security (IAS 2008), September 8-10, 2008, IEEE Press, pages 209 - 212.
62. Serguei A. Mokhov, Farid Rassai, Lee Wei Huynh, Lingyu Wang, "The Authentication Framework within the Java Data Security Framework (JDSF): Design and Implementation Refinement," Proc. International Conference on Telecommunications and Networking (TeNe 2008), December 5-13, 2008, pages 423-429.
63. Serguei A. Mokhov, Lee Wei Huynh, Lingyu Wang, "The Integrity Framework within the Java Data Security Framework (JDSF): Design and Implementation Refinement," Proc. International Conference on Telecommunications and Networking (TeNe 2008), December 5-13, 2008, pages 449-455.
64. Marcel Frigault\*, Lingyu Wang, "Measuring Network Security Using Bayesian Network-Based Attack Graphs," Proc. The 3rd IEEE International Workshop on Security, Trust, and Privacy for Software Applications (STPSA 2008), July 28 - August 1, 2008, pages 698-703.
65. Hong Yuan\*, Shuo Lu\*, Qian Liu\*, Lingyu Wang, Rachida Dssouli, "Preserving Privacy in e-Health Systems Using Hippocratic Database," Proc. The 3rd IEEE International Workshop on Security, Trust, and Privacy for Software Applications (STPSA 2008), July 28 - August 1, 2008, pages 692-697.
66. Lingyu Wang, Tania Islam\*, Tao Long\*, Anoop Singhal, and Sushil Jajodia, "An Attack Graph-Based Probabilistic Security Metric," Proc. 22nd Annual IFIP WG 11.3 Working Conference on Data and Applications Security (DBSEC 2008) , Springer-Verlag Lecture Notes in Computer Science (LNCS), Vol. 5094, July 13-16, 2008, pages 283-296.
67. Lei Zhang, Lingyu Wang, Sushil Jajodia, Alexander Brodsky, "Exclusive Strategy for Generalization Algorithms in Micro-Data Disclosure," Proc. 22nd Annual IFIP WG 11.3 Working Conference on Data and Applications Security (DBSEC 2008), Springer-Verlag Lecture Notes in Computer Science (LNCS), Vol. 5094, July 13-16, 2008, pages 190-204.
68. Wei Li\*, Lingyu Wang, Bo Zhu, Lei Zhang, "An Integrity Lock Architecture for Supporting Distributed Authorizations in Database Federations," Proc. 23rd International Information Security Conference (SEC 2008), September 8-10, 2008, pages 189-203 (Acceptance ratio 42/143).
69. B. C. M. Fung, K. Wang, L. Wang, and M. Debbabi, "A Framework for Privacy-Preserving Cluster Analysis," Proc. IEEE International Conference on Intelligence and Security Informatics (IEEE ISI 2008), Springer-Verlag Lecture Notes in Computer Science (LNCS), 2008, To appear (Acceptance ratio 22%).
70. Da Yong Zhang\*, Lingyu Wang, Yong Zeng, "Secure Collaborative Product Development: a Literature Review," Proc. 5th International Conference on Product Lifecycle Management (PLM 2008), July 9-11, 2008, To appear.
71. Bo Zhu, Kui Ren, Lingyu Wang, "Anonymous Misbehavior Detection in Mobile Ad Hoc Networks," Proc. 1st IEEE International Workshop on Wireless Security and Privacy (WiSP 2008), June 20, 2008, pages 358-363.
72. Djedjiga Mouhebb\*, Mourad Debbabi, Lingyu Wang, Makan Pourzandi, "UML-Based Approaches for the Development of Secure Software and Systems: A Comparative Study," Proc. 2nd Workshop on Practice and Theory of IT Security (PTITS 2008), January 23, 2008, pages 15-20.
73. Noman Mohammed\*, Hadi Otrouk, Lingyu Wang, Mourad Debbabi, Prabir Bhattacharya, "A Mechanism Design-Based Multi-Leader Election Scheme for Intrusion Detection in MANET," Proc. of the IEEE Wireless Communications and Networking Conference (WCNC 2008), March 31-April 4, 2008, pages 2816-2821.
74. Qian Liu\*, Shuo Lu\*, Hong Yuan\*, Lingyu Wang, Rachida Dssouli, "Securing Telehealth Applications in a Web-Based e-Health Portal," Proc. 3rd International Conference on Availability, Reliability and Security (ARES 2008), IEEE Press, March 4-7, 2008, pages 3-9.



75. Shuo Lu\*, Hong Yuan\*, Qian Liu\*, Lingyu Wang, Rachida Dssouli, "Access Control in e-Health Portal Systems," Proc. 4th International Conference on Innovations in Information Technology (Innovations 2007), IEEE Press, November 18-20, 2007, pages 88-92.
76. Hong Yuan\*, Shuo Lu\*, Qian Liu\*, Lingyu Wang, Rachida Dssouli, "A Hierarchical Approach to the Specification of Privacy Preferences," Proc. 4th International Conference on Innovations in Information Technology (Innovations 2007), IEEE Press, November 18-20, 2007, pages 660-664.
77. Lingyu Wang, Anoop Singhal, Sushil Jajodia, "Toward Measuring Network Security Using Attack Graphs," Proc. 3rd International Workshop on Quality of Protection (QoP 2007), Oct 29, 2007, pages 49-54.
78. Hadi Otrouk, Noman Mohammed\*, Lingyu Wang, Mourad Debbabi, Prabir Bhattacharya, "An Efficient And Truthful Leader IDS Election Mechanism for MANET," Proc. of the 3rd IEEE International Conference on Wireless and Mobile Computing, Networking and Communications (WiMob 2007), October 8 - 10, 2007, pages 78.
79. Lingyu Wang, Anoop Singhal, Sushil Jajodia, "Measuring the overall security of network configurations using attack graphs," Proc. 21st Annual IFIP WG 11.3 Working Conference on Data and Applications Security (DBSec 2007), Springer Lecture Notes in Computer Science, Vol. 4602, Steve Barker and Gail-Joon Ahn, eds., Redondo Beach, CA, July 8-11, 2007, pages 98-112 (Acceptance ratio 18/44).
80. Xuxin Xu\*, Lingyu Wang, Amr Youssef, Bo Zhu, "Preventing collusion attacks on the one-way function tree (OFT) scheme," Proc. 5th International Conference on Applied Cryptography and Network Security (ACNS 2007), Springer-Verlag Lecture Notes in Computer Science, Vol. 4521, pages 177-193 (Acceptance ratio 31/260), June 5-8, 2007.
81. Chao Yao, Lingyu Wang, X. Sean Wang, Sushil Jajodia, "Indistinguishability: the other aspect of privacy," Proc. 3rd VLDB Workshop on Secure Data Management (SDM 2006), Springer Lecture Notes in Computer Science, Vol. 4165, September 10-11, 2006, pages 1-17.
82. Lingyu Wang, Chao Yao, Anoop Singhal, Sushil Jajodia, "Interactive Analysis of Attack Graphs Using Relational Queries," Proc. 20th IFIP WG 11.3 Working Conference on Data and Applications Security (DBSec 2006), Springer-Verlag Lecture Notes in Computer Science, Vol. 4127, July 2006, pages 119-132 (Acceptance ratio 22/55).
83. Lingyu Wang, Anyi Liu, Sushil Jajodia, "An efficient and unified approach to correlating, hypothesizing, and predicting network intrusion alerts," Proc. 10th European Symposium on Research in Computer Security (ESORICS 2005), September 2005, pages 247-266 (Acceptance ratio 26/158).
84. Lingyu Wang, Sushil Jajodia, Duminda Wijesekera, "Securing OLAP data cubes against privacy breaches," Proc. IEEE Symposium on Security and Privacy (S&P 2004), May 2004, pages 161-175 (Acceptance ratio 19/180).
85. Lingyu Wang, Duminda Wijesekera, Sushil Jajodia, "A logic-based framework for attribute based access control," Proc. 2nd ACM Workshop on Formal Methods in Security Engineering (FMSE 2004), October 2004, pages 45-55 (Acceptance ratio 9/25).
86. Lingyu Wang, Yingjiu Li, Duminda Wijesekera, Sushil Jajodia, "Precisely answering multidimensional range queries without privacy breaches," Proc. 8th European Symposium on Research in Computer Security (ESORICS 2003), October 2003, pages 100-115 (Acceptance ratio 19/114).
87. Lingyu Wang, Duminda Wijesekera, Sushil Jajodia, "Towards secure XML federations," Proc. 17th IFIP WG 11.3 Working Conference on Data and Application Security (DBSec 2003), August 2003, pages 117-131 (Acceptance ratio 25/50).
88. Lingyu Wang, Duminda Wijesekera, Sushil Jajodia, "Cardinality-based inference control in sum-only data cubes," Proc. 7th European Symposium on Research in Computer Security (ESORICS 2002), October 2002, pages 55-71 (Acceptance ratio 16/83).
89. Yingjiu Li, Lingyu Wang, X. Sean Wang, Sushil Jajodia, "Auditing interval-based inference," Proc. 14th Conference on Advanced Information Systems Engineering (CAiSE 2002), Springer-Verlag Lecture Notes in Computer Science, Vol. 2348, May 2002, pages 553-568 (Acceptance ratio 42/173).
90. Yingjiu Li, Lingyu Wang, Sushil Jajodia, "Preventing interval-based inference by random data perturbation," Proc. 1st Workshop on Privacy Enhancing Technologies (PET 2002), Springer-Verlag Lecture Notes in Computer Science, Vol. 2482, April 2002, pages 160-170 (Acceptance ratio 16/47).
91. Yingjiu Li, Senchun Zhu, Lingyu Wang, Sushil Jajodia, "A privacy-enhanced microaggregation method," Proc. 2nd Symposium on Foundations of Information and Knowledge Systems (FoIKS 2002), Springer-Verlag Lecture Notes in Computer Science, Vol. 2284, February 2002, pages 148-159 (Acceptance ratio 15/55).

#### Patents

92. Sushil Jajodia, Lingyu Wang, Anoop Singhal, "Interactive analysis of attack graphs using relational queries," US Patent 8,566,269, 2013-10-22.

**GRANT**

Title: Defending Against Multi-Step Intrusions in Large-Scale Computer Networks  
Source: The Natural Sciences and Engineering Research Council of Canada (NSERC) Discovery Grant  
Amount: 107,500  
Duration: 2008-2012  
Principal Investigator

Title: Une Approche Quantitative pour la Modélisation et pour la Défense des Réseaux Contre les Intrusions  
Source: Le Fonds québécois de la recherche sur la nature et les technologies (FQRNT) Grant  
Amount: 40,000  
Duration: 2009-2011  
Principal Investigator

Title: Une Approche Quantitative pour la Modélisation et pour la Défense des Réseaux Contre les Intrusions  
Source: Le Fonds québécois de la recherche sur la nature et les technologies (FQRNT) Equipment Grant  
Amount: 40,644  
Duration: 2009-2010  
Principal Investigator

Title: Model-Based Framework for the Engineering of Secure Software and Systems  
Source: The Natural Sciences and Engineering Research Council of Canada (NSERC) CRD and Ericsson Canada  
Amount: 324,000  
Duration: 2009-2011  
Co-Investigator

Title: Model-Based Engineering for Secure Software and Systems  
Source: PROMPT Quebec Grant  
Amount: 104,000  
Duration: 2009-2010  
Co-Investigator

Title: Techniques for Botnet Analysis, Detection and Tracking  
Source: Concordia University Seed Grant  
Amount: 15,000  
Duration: 2009-2010  
Principal Investigator

Title: Security and Privacy of User-Generated Data for Personalized Cloud Computing Services  
Source: The Natural Sciences and Engineering Research Council of Canada (NSERC) Strategic Grant  
Amount: 482,100  
Duration: 2010-2013  
Co-Investigator

Title: A unified approach to modeling network assets and vulnerabilities for automated security analysis"  
Source: The Natural Sciences and Engineering Research Council of Canada (NSERC) ENGAGE Grant  
Amount: 25,000  
Duration: 2011-2011  
Principal Investigator

Title: Protection of intellectual property in collaborative and distributed new product development: Pilot study  
Source: The Natural Sciences and Engineering Research Council of Canada (NSERC) ENGAGE Grant  
Amount: 25,000  
Duration: 2011-2011  
Co-Investigator

Title: Towards a Unified Approach to Detecting, Analyzing, Mitigating, and Investigating Botnets

Source: Le Fonds québécois de la recherche sur la nature et les technologies (FQRNT) Team Grant  
Amount: 39,000  
Duration: 2011-2013  
Co-Investigator

Title: Intellectual Property Protection in Global Design and Supply Chain Management  
Source: Concordia University Seed Grant  
Amount: 12,750  
Duration: 2012-2013  
Co-Investigator

Title: A Vulnerability-Centric Approach to Network Security Metrics  
Source: The Natural Sciences and Engineering Research Council of Canada (NSERC) Discovery Grant  
Amount: 110,000  
Duration: 2013-2017  
Principal Investigator

Title: Software Fingerprinting for Automated Malicious Code Analysis  
Source: Department of National Defence/The Natural Sciences and Engineering Research Council of Canada (NSERC) Research Partnership - Project (DNDPJ)  
Amount: 208,695  
Duration: 2013-2015  
Co-Investigator

Title: A Unified Approach to Modeling Network Assets and Vulnerabilities for Automated Security Analysis  
Source: The Natural Sciences and Engineering Research Council of Canada (NSERC) ENGAGE Plus Grant and Above Security Inc.  
Amount: 25,000  
Duration: 2014-2014  
Principal Investigator

## GRADATE STUDENT SUPERVISION

Completed:

1. Xuxin Xu, M.A.Sc (2005.9 – 2007.11), thesis title: “Preventing collusion attacks on the one-way function tree (OFT) scheme” (co-directed with Amr Youssef).
2. Yuan Hong, M.Comp.Sc. (2005.9 – 2008.2), thesis title: “Preserving privacy in Web-based eHealth systems” (co-directed with Rachida Dssouli).
3. Shuo Lu, M.Comp.Sc. M.A.Sc (2005.9 – 2008.3), thesis title: “Architecture design and access control of eHealth portals” (co-directed with Rachida Dssouli).
4. Qian Liu, M.Comp.Sc. (2005.9 – 2008.3), thesis title: “Securing Telehealth applications in a Web-based eHealth portal” (co-directed with Rachida Dssouli).
5. Noman mohammed, M.A.Sc (2007.6 – 2008.5), thesis title: “Mechanism design-based leader election scheme for intrusion detection in MANET” (co-directed with Mourad Debbabi).
6. Wei Li, M.A.Sc (2007.6 – 2008.5), thesis title: “Distributed authorization in loosely coupled database federation”.
7. Tao Long, M.A.Sc (2006.9 – 2009.3), thesis title: “Attack graph compression”.
8. Tania Islam, M.A.Sc. (2006.9 – 2009.4), thesis title: “A heuristic approach to network hardening using attack graphs”.
9. Wen Ming Liu, M.A.Sc. (2007.9 – 2008.12), thesis title: “On applications of simulated annealing to cryptology”.
10. Da Yong Zhang, M.A.Sc (2008.1 – 2009.12), thesis title: “Modeling and evaluating information leakage caused by inferences in supply chains” (co-directed with Yong Zeng).



11. Vitor Nunes de Lima, M.A.Sc. (2008.1 – 2009.12), thesis title: “Framework for automatic verification of UML Design models: application to UML 2.0 interactions” (co-directed with Mourad Debbabi).
12. Marcel Frigault, M.A.Sc. (2007.6 – 2009.3), thesis title: “Measuring network security using Bayesian networks-based attack graphs”.
13. Yiming Wang, M.A.Sc. (2007.9 – 2009.4), thesis title: “Privacy preservation in location-based services with continuous queries”.
14. Shuai Liu, M.A.Sc. (2007.9 – 2009.1), thesis title: “Localizing unauthorized updates in published micro-data tables through secret order-based watermarking”.
15. Li Deng, M.A.Sc. (2008.1 – 2010.10), thesis title: “Preserving Privacy for Micro-Databases”.
16. Pengsu Cheng, M.A.Sc. (2009.9 – 2011.9), thesis title: “A multi-faceted approach to network security metric”.
17. Raha Ziarati, M.A.Sc. (2009.1 – 2012.10), thesis title: “Dynamic Matching and Weaving Semantics for Executable UML Models” (co-directed with Mourad Debbabi).
18. Thomas Ormerod, M.A.Sc. (2009.9 – 2012.9), thesis title: “An Analysis of a Botnet Toolkit and a Framework for a Defamation Attack” (co-directed with Mourad Debbabi).
19. Djedjiga Mouheb, Ph.D. (2008.1 – 2013.3), thesis title: “Model-Driven Aspect-Oriented Software Security Hardening” (co-directed with Mourad Debbabi).
20. Raha Ziarati, M.A.Sc. (2009.9 – 2012.10), thesis title: “Dynamic Matching and Weaving Semantics for Executable UML Models” (co-directed with Mourad Debbabi).
21. William Nzoukou Tankou, M.A.Sc. (2011.5 – 2013.6), thesis title: “A Unified Framework for Measuring a Network’s Mean Time-to-Compromise”.
22. Mickael Emirikian-Bouchard, M.A.Sc. (2011.5 – 2013.7), thesis title: “Towards Metric-Driven, Application-Specific Visualization of Attack Graphs”.
23. Taher Adel Mohamed, M.A.Sc. (2011.1 – 2014.2), thesis topic: Differentially private traffic padding (co-directed with Mourad Debbabi).
24. Sahba Sadri, M.A.Sc. (2012.6 – 2014.1), thesis topic: Towards Migrating Security Policies along with Virtual Machines in Cloud (Joint supervision with Dr. Mourad Debbabi).
25. Wen Ming Liu, Ph.D. (2009.1 – 2014.2), thesis topic: Side channel attacks and defence.
26. Wei Huo, M.A.Sc. (2011.9 – 2014.7), thesis topic: Diversity-based detection of injection attacks.
27. Nafisa Khundker, M.A.Sc. (2011.9 – 2014.7), thesis topic: IP protection in multi-level supplier networks.

#### In Progress:

28. Mengyuan Zhang, Ph.D. (2012.9 – now), thesis topic: Network security metrics.
29. Sahba Sadri, M.A.Sc. (2012.6-now), thesis topic: TBD (Joint supervision with Dr. Mourad Debbabi).
30. Saed Alrabaee, Ph.D. (2012.9 – now), thesis topic: TBD (Joint supervision with Dr. Mourad Debbabi).
31. Noman Saleem, Ph.D. (2012.9 – now), thesis topic: TBD (Joint supervision with Dr. Mourad Debbabi).
32. Daniel Borbor Cedeño, Ph.D. (2013.9 – now), thesis topic: TBD.
33. Paria Shirani, Ph.D. (2013.9 – now), thesis topic: TBD.
34. Saad Inshi, Ph.D. (2012.9 – now), thesis topic: TBD (Joint supervision with Dr. Yong Zeng).
35. Mina Khalili, M.A.Sc. (2013.9 – now), thesis topic: TBD.
36. Nawaf Alhebaishi, Ph.D. (2014.9 – now), thesis topic: TBD.
37. Alis Rasic, M.A.Sc. (2014.9 – now), thesis topic: TBD.
38. Yue Xin, M.A.Sc. (2014.9 – now), thesis topic: TBD.

## TEACHING

#### Development of New Graduate Courses:

1. INSE 6620 (Cloud Computing Security and Privacy).
2. INSE 6160 (Database Security and Privacy).

#### Courses Taught:

1. INSE 6620 (Cloud Computing Security and Privacy) Summer 2014, 66 students.
2. INSE 6130 (Operating System Security) Winter 2014, 33 students.
3. INSE 6160 (Database Security and Privacy) Winter 2014, 45 students.
4. INSE 6130 (Operating System Security) Fall 2013, 63 students.
5. SOEN 321 (Information Systems Security) Fall 2013, 53 students.
6. INSE 6160 (Database Security and Privacy) Winter 2012, 51 students.
7. COMP 249 (Object-Oriented Programming II) Winter 2012, 25 students.

8. INSE 6130 (Operating System Security) Fall 2011, Concordia University, 106 Students
9. INSE 6160 (Database Security and Privacy) Winter 2011, Concordia University, 51 Students
10. COMP 249 (Object-Oriented Programming II) Winter 2011, Concordia University, 57 Students
11. INSE 6130 (Operating System Security) Fall 2010, Concordia University, 96 Students
12. INSE 6160 (Database Security and Privacy) Winter 2010, Concordia University, 36 Students
13. INSE 6130 (Operating System Security) Fall 2009, Concordia University, 42 Students
14. INSE 691A (Database Security and Privacy) Winter 2009, Concordia University, 29 Students
15. INSE 6130 (Operating System Security) Fall 2008, Concordia University, 55 Students
16. INSE 6150 (Security Evaluation Methodologies) Winter 2008, Concordia University, 64 Students
17. INSE 691A (Database Security and Privacy) Winter 2008, Concordia University, 36 Students
18. INSE 6110 (Foundations of Cryptography) Fall 2007, Concordia University, 43 Students
19. INSE 6130 (Operating System Security) Fall 2007, Concordia University, 59 Students
20. INSE 691A (Database Security and Privacy) Winter 2007, Concordia University, 25 Students
21. COMP 249 (Programming Methodology) Winter 2007, Concordia University, 49 Students
22. INSE 6130 (Operating System Security) Fall 2006, Concordia University, 40 Students
23. ISA 662 (Information System Security) Fall 2005, George Mason University, 12 Students

## PROFESSIONAL ACTIVITIES

1. Review panelist, The National Science Foundation (NSF), 2010-2011.
2. External Reviewer, The Natural Sciences and Engineering Research Council of Canada (NSERC), 2009-2014
3. PC Member, 1st Cyber-Physical System Security Workshop (CPSS'15), Singapore, April 14, 2015, in conjunction with ACM AsiaCCS'15.
4. PC Member, 11th International Conference on Information Security Practice and Experience (ISPEC 2015), Beijing, May 5-8, 2015.
5. PC Member, The 11th IEEE International Conference on Autonomic and Trusted Computing, (ATC-2014) December 9-12, 2014, Ayodya Resort, Bali, Indonesia.
6. PC Member, The 1st Workshop on Secure Smart Systems (SSS'14), September 23, 2014, Beijing, China. PC Member, The 13th IEEE International Conference on Trust, Security and Privacy in Computing and Communications (TrustCom'14), September 24th-26th, 2014 in Beijing, China.
7. PC Member, The Third ASE International Conference on Cyber Security, Stanford, CA, USA, May 27-31, 2014.
8. PC Co-Chair, The 9th IEEE International Workshop on Security, Trust, and Privacy for Software Applications (STPSA'14), Västerås, Sweden, July 21-25, 2014.
9. Secretary, IFIP WG 11.3 Working Group on Data and Application Security and Privacy
10. PC Member, The International Conference on Security and Cryptography (SECRYPT'14), Vienna, Austria, 28-30 August 2014.
11. PC Member, The 19th European Symposium on Research in Computer Security (ESORICS'14), Wroclaw, Poland, September 7-11 2014.
12. PC Member, The Second International Workshop on Security in Cloud Computing, held in conjunction with the 9th ACM Symposium on Information, Computer and Communications Security (ASIACCS), June 3, 2014, Kyoto, Japan.
13. PC Member, The 28th Annual IFIP WG 11.3 Working Conference on Data and Applications Security and Privacy (DBSec'14), Vienna Technical University, Vienna, Austria, July 14-16, 2014.
14. PC Member, The 2014 IEEE/ASE International Conference on Cyber Security, Stanford, CA, USA, May 27-31, 2014.
15. PC Member, The 8th International Conference on Network and System Security (NSS'14), Xi'an, China, October 15-17, 2014.
16. PC Member, The 2nd International Workshop on Security and Privacy Preserving in e-Societies, (SeceS'14), Addis Ababa, Ethiopia, October 28th - 31th, 2014.
17. PC Member, The IEEE Global Communications Conference (GLOBECOM'14), December 8-12, 2014, Austin, Texas, USA.
18. PC Member, The 10th IEEE International Conference on Autonomic and Trusted Computing (ATC'13), December 18-21, 2013, Sorrento Peninsula, Italy.
19. PC Member, The International Conference on Connected Vehicles & Expo (ICCVE'13), Las Vegas, 2-6 December 2013.

20. PC Member, The International Workshop on Graphical Models for Security (GramSec'14), 5-13 April 2014, Grenoble, France.
21. PC Member, The 9th International Conference on Information Security Practice and Experience (ISPEC'14), 12-14 May 2014, Fuzhou, China.
22. PC Member, The 5th International Symposium on Cyberspace Safety and Security (CSS'13), Zhangjiajie, China, November 13-15, 2013.
23. PC Member, The 5th IEEE International Conference on Cloud Computing Technology and Science (CloudCom'13), Bristol, UK, Dec. 2-5, 2013.
24. PC Member, The 4th International Workshop on Security and Privacy in Cloud Computing (in conjunction with IEEE CNS 2013) (CNS-SPCC'13), Washington DC, Oct 14-16, 2013.
25. PC Co-Chair, The 27th Annual IFIP WG 11.3 Working Conference on Data and Applications Security (DBSec'13), Rutgers University, Newark, NJ, USA, 2013.
26. PC Co-Chair, The 8th IEEE International Workshop on Security, Trust, and Privacy for Software Applications (STPSA'13), Kyoto, Japan, July 22-26, 2013.
27. Track Chair, The fourth International Conference on Computer Science and its Applications (CIIA'2013), Saida, Algeria, May 4-6, 2013.
28. PC Member, The 13th Privacy Enhancing Technologies Symposium (PETS'13), Bloomington, Indiana, USA, July 10-12, 2013.
29. PC Member, The IEEE International Conference on Intelligence and Security Informatics (ISI'13), Seattle Washington, USA, June 4-7, 2013. Submission Deadline: February 15, 2013.
30. PC Member, The IEEE Global Communications Conference (GLOBECOM'13), Atlanta, USA, December 9-13, 2013. Submission Deadline: March 15, 2013.
31. PC Chair, The 7th IEEE International Workshop on Security, Trust, and Privacy for Software Applications (STPSA'12), Izmir, Turkey, July 16-20, 2012.
32. Guest Editor, Computers in Industry, Special Issue on Secure Collaboration in Design and Supply Chain Management, 2012.
33. PC Member, International Workshop on Privacy-AwaRe Intelligent Systems (PARIS 2012), Macau, December 4-7, 2012.
34. PC Member, The 2012 ASE/IEEE International Conference on Cyber Security (ICCS'12), Washington D.C., USA, December 14-16, 2012.
35. PC Member, The 15th Information Security Conference (ISC'12), Passau, Germany, Sept 19-21, 2012.
36. PC Member, The 4th International Conference on Cloud Computing Technology Science (CloudCom'12), Taipei, Taiwan, December 3-6, 2012.
37. PC Member, The IEEE International Conference on Intelligence and Security Informatics (ISI'12), Washington D.C., USA, June 11-14, 2012.
38. PC Member, The International Conference on Security and Cryptography (SECRYPT'12), Rome, Italy, July 24-27 2012.
39. PC Member, The 11th IEEE International Conference on Trust, Security and Privacy in Computing and Communications (TrustCom-2012), Liverpool, England, UK, 25-27 June 2012.
40. PC Member, The 11th International Conference on Information Science, Signal Processing and their Applications (ISSPA 2012), Security Track, Montreal, Canada, July 3-5.
41. PC Member, The 26th Annual IFIP WG 11.3 Working Conference on Data and Applications Security (DBSec'12), Paris, France. July 11-13, 2012.
42. PC Member, The 6th International Conference on Network and System Security (NSS'12), November 21-23, 2012, Wu Yi Shan, China.
43. PC Member, The 7th International Conference on Grid and Pervasive Computing Conference (GPC 2012), Hong Kong, 11-13 May 2012.
44. PC Member, Workshop on Privacy in the Electronic Society (WPES'11), October 17, 2011, Chicago, US.
45. PC Member, 9th IEEE International Conference on Dependable, Autonomic and Secure Computing (DASC'11), December 12-14, 2011, Sydney, Australia. Submission Deadline: July 15, 2011.
46. PC Co-Chair, The 6th IEEE International Workshop on Security, Trust, and Privacy for Software Applications (STPSA'11), Munich, Germany, July 18-22, 2011.
47. PC Co-Chair, Special Track of SDPS 2011 on Secure Collaboration in Global Design and Supply Chain Management, Jeju Island, Korea, June 12-16, 2011.
48. PC Member, The 14th Information Security Conference (ISC'11), Xian, China on October 26-29, 2011.

49. PC Member, The IEEE GLOBECOM 2011 Communications and Systems Security (GLOBECOM'11), Houston, Texas, USA, 5-9 December 2011.
50. PC Member, The International Conference on Security and Cryptography (SECRYPT'11), Seville, Spain, July 18-21, 2011.
51. PC Member, The 25th Annual IFIP WG 11.3 Working Conference on Data and Applications Security (DBSec'11), Richmond, Virginia, USA, June 11-13, 2011.
52. PC Member, The 8th IEEE/FTRA International Conference on Secure and Trust Computing, data management, and Applications (STA'11), Crete, Greece, June 28-30, 2011.
53. PC Member, The 4th International Conference on New Technologies, Mobility and Security (NTMS'11), Paris, France, February 7-10, 2011.
54. PC Member, IEEE Consumer Communications and Networking Conference (CCNC'11), Las Vegas, USA, January 8-11, 2011.
55. PC Member, The 5th IEEE International Workshop on Security, Trust, and Privacy for Software Applications (STPSA'10), Seoul, South Korea, July 19-23, 2010.
56. PC Member, First International Workshop on Data Management and Network Control in Wireless Networks (DMNC'10), Beijing, China, August 8-15, 2010.
57. Local Arrangements Chair, The 23rd Annual IFIP WG 11.3 Working Conference on Data and Applications Security (DBSec'09), Concordia University, Montreal, Canada, July 12-15, 2009.
58. PC Member, IEEE Vehicular Technology Conference (VTC'10-Fall) Ad-Hoc and Sensor Network Track, Ottawa, Canada, September 6-9, 2010.
59. PC Member, International Conference on Security and Cryptography (SECRYPT'10), Athens, Greece, July 26-28, 2010.
60. PC Member, The 24th Annual IFIP WG 11.3 Working Conference on Data and Applications Security (DBSec'10), Rome, Italy, June 21-23, 2010.
61. PC Member, The IEEE International Conference on Intelligence and Security Informatics (ISI'10), Vancouver, Canada, May 23-26, 2010.
62. PC Member, The IEEE GLOBECOM 2010 Communications and Systems Security (GLOBECOM'10), Miami, USA, December 6-10, 2010.
63. PC Member, The Second International Symposium on Data, Privacy, & E-Commerce (ISDPE'10), Buffalo/Niagara Fall, USA, June 20-22, 2010.
64. PC Member, The Third International Conference on New Technologies, Mobility and Security (NTMS'09), Cairo, Egypt, December 20-23, 2009.
65. PC Member, The 12th Information Security Conference (ISC'09), Pisa, Italy, September 7-9, 2009.
66. PC Member, The 7th IEEE/IFIP International Conference on Embedded and Ubiquitous Computing (EUC'09), Vancouver, Canada, August 29-31, 2009.
67. PC Member, Graduate Student Symposium at the 7th Annual Conference on Privacy, Security and Trust (PST 2009) and the 9th World Congress on the Management of e-Business, New Brunswick, Canada, August 25-27, 2009.
68. PC Member, The 4th IEEE International Conference on Wireless and Mobile Computing, Networking and Communications (WiMob'09), Marrakech, Morocco, October 12-14, 2009.
69. PC Member, International Conference on Security and Cryptography (SECRYPT'09), Milan, Italy, July 7-10, 2009.
70. PC Member, The 4th IEEE International Workshop on Security, Trust, and Privacy for Software Applications (STPSA'09), Seattle, USA, July 20 - July 24, 2009.
71. PC Member, The First International Conference on Network and Service Security (N2S'09), Paris, France, June 24-26, 2009.
72. PC Member, The IEEE International Conference on Communications (Wireless Networking Symposium) (ICC'09), Dresden, Germany, 14-18 June, 2009.
73. PC Member, The 2008 International Workshop on Secure Vehicular Ad-Hoc Networks (SVANET'08), Sydney, Australia, December 10-12, 2008.
74. PC Member, The second International Conference on New Technologies, Mobility and Security (NTMS'08), Tangier, Morocco, November 5-7, 2008.
75. PC Member, The Sixth Annual Conference on Privacy, Security and Trust (PST'08) Graduate Student Symposium, Fredericton, New Brunswick, Canada, October 1-3, 2008.
76. PC Member, The 4th IEEE International Conference on Wireless and Mobile Computing, Networking and Communications (WiMob'08), Avignon, France, October 12-14, 2008.

77. PC Member, The 13th European Symposium on Research in Computer Security (ESORICS'08), Malaga, Spain, October 6-10, 2008
78. PC Member, The 3rd IEEE International Workshop on Security, Trust, and Privacy for Software Applications (STPSA'08), Turku, Finland, July 28 - August 1, 2008
79. PC Member, The 23rd International Information Security Conference (SEC'08), Milan, Italy, September 8-10, 2008
80. PC Member, The 2nd IEEE International Workshop on Security, Trust, and Privacy for Software Applications (STPSA'07), April, 2007
81. PC Member, The 3rd International Workshop on Information Assurance (WIA'07), April, 2007
82. PC Member, Workshop on Security and Trust in Decentralized/Distributed Data Structures (STD3S '06), April, 2006
83. PC Member, The Eighth International Conference on Electronic Commerce (ICEC'06)

#### Conference Paper Referee

- ISWCS 2010, WCNC 2009, ESSoS 2009, AMCIS 2008, ARES 2008, VTC 2008, INNOVATIONS 2007, STPSA 2007, DSN 2007, WIA 2007, SDM 2006, ACSAC 2006, ESORICS 2006, VLDB 2006, ICEC 2006, IS 2006, IWAP 2006, GLOBECOM 2006, ESORICS 2005, ICDE 2005, ESORICS 2004, ACM CCS 2003, MMM-ACNS 2005, EuroPKI 2004, WCC2004-SEC, WISE 2004, CAiSE 2003, INDOCRYPT 2002

#### Journal Paper Reviewer

- ACM Transactions on Information and System Security (ACM TISSEC), Journal of Computer Security (JCS), Journal of Computer and System Science (JCSS), IEEE Transactions on Services Computing (TSC), IEEE Transactions on Knowledge and Data Engineering (TKDE), International Journal of Cooperative Information Systems (IJCIS), Journal of Database Management (JDM), Journal of Systems and Software (JSS), Journal of Autonomous Agents and Multi-Agent Systems (JAAMAS), The Computer Journal (COMPIJ), Wireless Personal Communications (WPC), Computer Communications (COMCOM), Data & Knowledge Engineering (DKE), IET Information Security (IET-IFS), Wiley Security and Communication Networks (SCN), IEEE Security & Privacy, Wireless Personal Communications (WPC), International Journal of Computers and Applications, Telecommunication Systems Journal (TSJ), Computers & Security, IEEE Systems Journal, VLDB Journal.

## HONORS AND AWARDS

1. Best Paper Award, 10th International Conference on Security and Cryptography (SECRYPT 2013).
2. Best paper Award, 8th Annual Conference on Privacy, Security and Trust (PST 2010).
3. Early Promotion to Associate Professor, Concordia University, 2010
4. Outstanding Graduate Award, School of Information Technology and Engineering, George Mason University, 2005
5. High-Potential Graduate Research Assistant Fellowship, George Mason University, 2000-2003
6. Outstanding Graduate Award, Shanghai Jiao Tong University, 1996
7. Liuyuan-Shengyudu Scholarship, Shanghai Jiao Tong University, 1993
8. Outstanding Graduate Award, Shenyang Institute of Aeronautical Engineering, 1993
9. Scholarships, Shenyang Institute of Aeronautical Engineering, 1989-1993