

Suryadipta Majumdar

Assistant Professor

Information Security and Digital Forensics, University at Albany, SUNY
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RESEARCH INTERESTS

• Cloud Computing • Cloud Security Monitoring • Cloud Security Auditing • Software Defined Network (SDN) Security

EDUCATION

- 2015-2018 Ph.D. in Information & Systems Engineering
Concordia University, Canada
Advisor: Dr. Lingyu Wang
Dissertation Topic: "Proactive Security Auditing for Clouds"
CGPA: 4.3/4.3
- 2012-2014 Master's in Information Systems Security
Concordia University, Canada
Advisor: Dr. Mohammad Mannan
Dissertation Topic: "On End-to-End Encryption for Cloud-Based Services"
CGPA: 4.3/4.3
- 2004-2009 Bachelor's in Computer Science & Engineering
Bangladesh University of Engineering & Technology (BUET), Bangladesh

REFEREED PUBLICATIONS

1. Taous Madi, Amir Alimohammadifar, Yosr Jarraya, Suryadipta Majumdar, Yushun Wang, Makan Pourzandi, Lingyu Wang and Mourad Debbabi, "ISOTOP: Auditing Virtual Networks Isolation Across Cloud Layers in OpenStack", ACM Transactions on Privacy and Security (TOPS), Accepted
2. Amir Alimohammadifar, Suryadipta Majumdar, Taous Madi, Yosr Jarraya, Makan Pourzandi, Lingyu Wang, Mourad Debbabi, "Stealthy Probing-based Verification (SPV): An Active Approach to Defending Software Defined Networks against Topology Poisoning Attacks", 23rd European Symposium on Research in Computer Security (ESORICS 2018) (Acceptance rate: 20%)
3. Azadeh Tabiban, Suryadipta Majumdar, Lingyu Wang and Mourad Debbabi, "PERMON: An OpenStack Middleware for Runtime Security Policy Enforcement in Clouds", Proc. the 4th IEEE Workshop on Security and Privacy in the Cloud (SPC 2018)
4. Suryadipta Majumdar, Taous Madi, Yushun Wang, Yosr Jarraya, Makan Pourzandi, Lingyu Wang, Mourad Debbabi, "User-level Runtime Security Auditing for Clouds", IEEE Transactions on Information Forensics and Security (TIFS), Vol. 13, No. 5, May 2018, pages 1185-1199 (Impact factor: 4.332)
5. Suryadipta Majumdar, Yosr Jarraya, Momen Oqaily, Amir Alimohammadifar, Makan Pourzandi, Lingyu Wang, Mourad Debbabi, "LeaPS: Learning-Based Proactive Security Auditing for Clouds", 22nd European Symposium on Research in Computer Security (ESORICS 2017) (Acceptance rate: 16%)
6. Yushun Wang, Taous Madi, Suryadipta Majumdar, Yosr Jarraya, Amir Alimohammadifar, Makan Pourzandi, Lingyu Wang, Mourad Debbabi, "TenantGuard: Scalable Runtime Verification of Cloud-Wide VM-Level Network Isolation", The Network and Distributed System Security Symposium (NDSS 2017) (Acceptance rate: 16%)
7. Suryadipta Majumdar, Yosr Jarraya, Taous Madi, Amir Alimohammadifar, Makan Pourzandi, Lingyu Wang, Mourad Debbabi, "Proactive Verification of Security Compliance for Clouds through Pre-Computation: Application to OpenStack", 21st European Symposium on Research in Computer Security (ESORICS 2016) (Acceptance rate: 21%)

8. Taous Madi, Suryadipta Majumdar, Yushun Wang, Yosr Jarrya, Makan Pourzandi, Lingyu Wang, Mourad Debbabi, "Auditing Security Compliance of the Virtualized Infrastructure in the Cloud: Application to OpenStack", 6th ACM Conference on Data and Application Security and Privacy (CODASPY 2016) (Acceptance rate: 19%)
9. Suryadipta Majumdar, Yosr Jarrya, Momen Oqaily, Amir Alimohammadifar, Makan Pourzandi, Lingyu Wang, Mourad Debbabi, "Security Compliance Auditing of Identity and Access Management in the Cloud: Application to OpenStack", 7th IEEE International Conference on Cloud Computing Technology and Science (CloudCom 2015) (Acceptance rate: 25%)
10. Abu Asadujjaman, Elisa Rojas, Mohammad Shah Alam, Suryadipta Majumdar "Fast Control Channel Recovery for Resilient In-band OpenFlow Networks," 4th IEEE International Conference on Network Softwarization (NetSoft 2018)
11. Mohammad Amjad Hossain*, Arif Akram Khan*, Suryadipta Majumdar*, Reaz Ahmed, "Analysis and Design of Individual Tax Return Systems", 12th International Conference on Computer and Information Technologies (ICCIT 2009)

UNDER REVIEW

12. Suryadipta Majumdar, Azadeh Tabiban, Yosr Jarrya, Momen Oqaily, Amir Alimohammadifar, Makan Pourzandi, Lingyu Wang, Mourad Debbabi, "Learning Probabilistic Dependencies among Events for Proactive Security Auditing in Clouds," Submitted to Journal of Computer Security (JCS) [Under Minor Revision]
13. Suryadipta Majumdar, Amir Alimohammadifar, Yosr Jarrya, Taous Madi, Makan Pourzandi, Lingyu Wang, Mourad Debbabi, "ProSAS: A Proactive Security Auditing System for Clouds," Submitted to IEEE Transactions on Dependable and Secure Computing (TDSC) in May 2018
14. Momen Oqaily, Meisam Moammady, Yosr Jarrya, Suryadipta Majumdar, Makan Pourzandi, Lingyu Wang, Mourad Debbabi, "SegPriv: Segmentation-based Privacy and Utility Preserving Anonymization for Cross-Tenant Virtual Infrastructure Auditing," Submitted to the The Network and Distributed System Security Symposium (NDSS 2019)

TALKS

15. "Stealthy Probing-based Verification (SPV): An Active Approach to Defending Software Defined Networks against Topology Poisoning Attacks", 23rd European Symposium on Research in Computer Security (ESORICS 2018), Barcelona, Spain
16. "LeaPS: Learning-Based Proactive Security Auditing for Clouds," 22nd European Symposium on Research in Computer Security (ESORICS 2017), Oslo, Norway
17. "TenantGuard: Scalable Runtime Verification of Cloud-Wide VM-Level Network Isolation," Network and Distributed System Security Symposium (NDSS 2017), San Diego, USA
18. "Proactive Verification of Security Compliance for Clouds through Pre-Computation: Application to OpenStack," 21st European Symposium on Research in Computer Security (ESORICS 2016), Heraklion, Greece
19. "Auditing Security Compliance of the Virtualized Infrastructure in the Cloud: Application to OpenStack," 6th ACM Conference on Data and Application Security and Privacy (CODASPY 2016), New Orleans, USA
20. "Security Compliance Auditing of Identity and Access Management in the Cloud: Application to OpenStack," 7th IEEE International Conference on Cloud Computing Technology and Science (CloudCom 2015), Vancouver, Canada

DEMONSTRATIONS

21. "Demo on Proactive Security Auditing," Presented at Ericsson Research Day 2017, Stockholm, Sweden
22. "Demo on Retroactive Security Auditing," Presented at Ericsson Research Day 2015, Stockholm, Sweden

HONORS AND AWARDS

- NSERC Alexander Graham Bell Canada Graduate Scholarship-Doctoral (CGS-D), 2017-2019 (**\$70,000**)

- Fonds de Recherche du Québec - Nature et Technologies (FRQNT) B2 Scholarship, 2017-2018 (Declined) **(\$20,000)**
- NSERC Canada Graduate Scholarships - Michael Smith Foreign Study Supplements (CGS-MSFSS), 2018 **(\$6,000)**
- Concordia Full Tuition Recruitment Awards, Concordia University, Canada, 2015-2017 **(\$41,313)**
- Concordia Accelerator Award, Concordia University, 2019 **(\$5,000)**
- Director (Faculty of Engineering and Computer Science), Concordia Graduate Student Association, 2014
- Campaign for Concordia Graduate Award, Concordia University, Canada, 2013-2014 **(\$5,000)**
- Concordia Merit Scholarship, Concordia University, Canada, 2012-2013 **(\$10,000)**
- National Merit Scholarship, Bangladesh, 2004-2008

RESEARCH EXPERIENCE

- | | |
|-----------|---|
| 2012-2018 | Research Assistant
Concordia Institute for Information Systems Engineering (CIISE)
Concordia University, Montreal, Canada |
| 2014-2018 | Research Assistant
Audit Ready Cloud (NSERC CRD project with Ericsson Research Canada)
Concordia University, Montreal, Canada |
| 2012-2013 | Research Assistant
Android Rootkits: Classification and Mitigation (NSERC Engage project with Irdeto Canada)
Concordia University, Montreal, Canada |

INDUSTRIAL EXPERIENCE

- | | |
|-----------|---|
| 2010-2011 | Software Engineer
Team Lead (Multimedia team)
Samsung R&D, Bangladesh |
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PROFESSIONAL ACTIVITIES

- Member of IEEE
- Conference Paper Referee
 - 14th International Conference on Network and Service Management (CNSM 2018)
 - 23rd European Symposium on Research in Computer Security (ESORICS 2018)
 - 32nd Annual IFIP WG 11.3 Conference on Data and Applications Security and Privacy (DBSec 2018)
 - 4th IEEE International Conference on Network Softwarization (NetSoft 2018)
 - 22nd European Symposium on Research in Computer Security (ESORICS 2017)
 - 31st Annual IFIP WG 11.3 Conference on Data and Applications Security and Privacy (DBSec 2017)
 - 20th European Symposium on Research in Computer (ESORICS 2015)
 - 13th IEEE International Conference on Dependable, Autonomic and Secure Computing (DASC 2015)
 - 11th International Conference on Information Security Practice and Experience (ISPEC 2015)
- Journal Paper Reviewer
 - IEEE Transactions on Information Forensics and Security (TIFS)
 - IEEE Access
 - IET Information Security (IET-IFS)
 - Journal of Computer Engineering & Information Technology
 - Peer-to-Peer Networking and Applications

TEACHING EXPERIENCE

- Assembly Language and Malware Reverse Engineering (BFOR 418) (Undergraduate Course), University at Albany
 - Instructor (Fall 2018)

- Introduction to Information Systems (BFOR 100) (Undergraduate Course), University at Albany
 - Instructor (Fall 2018)
- Cloud Computing Security and Privacy (INSE 6620) (Graduate Course), Concordia University
 - Guest Lectures on Cloud Security Auditing (Summer 2018, Summer 2017 and Summer 2016)
 - Teaching Assistant (Summer 2017)
- Operating System Security (INSE 6130) (Graduate Course), Concordia University
 - Teaching Assistant (Fall 2017, Fall 2016, Winter 2016 and Fall 2015)
- Malware Defenses and Application Security (INSE 6140) (Graduate Course), Concordia University
 - Teaching Assistant (Winter 2018, Winter 2017 and Winter 2016)
- Cryptographic Protocol and Network Security (INSE 6120) (Graduate Course), Concordia University
 - Teaching Assistant (Fall 2013)