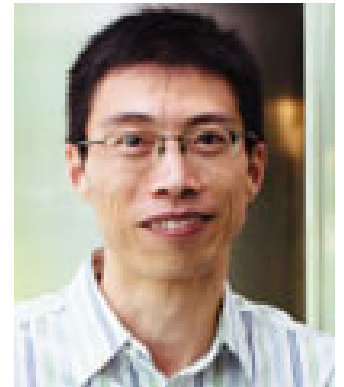**DING Xuhua**

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Education

PhD, University of Southern California, United States of America, 2003

Master of Science, Shanghai Jiao Tong University, China, 1999

Bachelor of Science, Shanghai Jiao Tong University, China, 1995

Academic Appointments

Professor of Computer Science, School of Computing and Information Systems, SMU, Jul 2024 - Present

Associate Professor of Computer Science, School of Computing and Information Systems, SMU, Apr 2021 - Jun 2024

Associate Professor of Information Systems, School of Computing and Information Systems, SMU, Jan 2012 - Mar 2021

Assistant Professor of Information Systems, School of Computing and Information Systems, SMU, Jan 2004 - Dec 2011

Lecturer of Information Systems, School of Computing and Information Systems, SMU, Oct 2003 - Dec 2003

Academic Administrative Positions

Director, Centre on Security, Mobile Applications and Cryptography (SMC), Centre on Security, Mobile Applications and Cryptography, SMU, Jan 2024 - Present

Coordinator, BSc (CS) Cybersecurity Track, School of Computing and Information Systems, SMU, Jul 2018 - Jun 2023

Member (School of Information Systems), Institutional Review Board, SMU Institutional Review Board, SMU, Jan 2013 - Dec 2016

RESEARCH

Research Interests

Network and system security
Applied cryptography
Trustworthy systems for data protection

Publications

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Concretely mapped symbolic memory locations for memory error detection, by TU, Haoxin; JIANG, Lingxiao; HONG, Jiaqi; DING, Xuhua; JIANG, He. (2024). *IEEE Transactions on Software Engineering, 50* (7), 1747-1767. https://doi.org/10.1109/TSE.2024.3395412 (Published)

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Xuhua. (2015.0). *Research in Attacks, Intrusions, and Defenses: 18th International Symposium, RAID 2015, Kyoto, Japan, November 2-4, 2015: Proceedings,* (pp. 66-85) Cham: Springer Verlag. http://dx.doi.org/10.1007/978-3-319-26362-5_4 (Published)

On security of content-based video stream authentication, by LO, Swee-Won; WEI, Zhou; DENG, Robert H.; DING, Xuhua. (2015.0). *Computer Security – ESORICS 2015: 20th European Symposium on Research in Computer Security, Vienna, Austria, September 21-25, Proceedings,* (pp. 366-383) Cham: Springer. http://dx.doi.org/10.1007/978-3-319-24174-6_19 (Published)

Efficient Virtualization-based Application Protection against Untrusted Operating System, by CHENG, Yueqiang; DING, Xuhua; DENG, Robert H.. (2015.0). *AsiaCCS'15: Proceedings of the 10th ACM Symposium on Information, Computer and Communications Security: April 14-17, 2015, Singapore,* (pp. 345-356) New York: ACM. http://dx.doi.org/10.1145/2714576.2714618 (Published)

ROPecker: A generic and practical approach for defending against ROP attack, by CHENG, Yueqiang; ZHOU, Zongwei; MIAO, Yu; DING, Xuhua; DENG, Robert H.. (2014.0). *NDSS Symposium 2014: Proceedings of the 21st Network and Distributed System Security Symposium, San Diego, February 23-26,* (pp. 1-14) Reston, VA: Internet Society. https://doi.org/10.14722/ndss.2014.23156 (Published)

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Protecting RFID Communications in Supply Chains, by LI, Yingjiu; DING, Xuhua. (2006.0). *Proceedings of the ACM Symposium on Information, Computer, and Communications Security: ASIACCS'07, Singapore, March 20-22, 2007,* (pp. 234-241) Singapore: ACM. http://dx.doi.org/10.1145/1229285.1229318 (Published)

Private Information Retrieval using trusted hardware, by WANG, Shuhong; DING, Xuhua; DENG, Robert H.; BAO, Feng. (2006.0). *Computer Security - ESORICS 2006: 11th European Symposium on Research in Computer Security, Hamburg, Germany, September 18-20: Proceedings,* (pp. 49-64) Berlin: Springer. https://doi.org/10.1007/11863908_4 (Published)

Secure Real-Time User Preference Collection for Broadcast Scheduling, by DING, Xuhua; WANG, Shuhong; ZHENG, Baihua. (2006.0). *2nd International Conference on Security and Privacy in Communication Networks (SecureComm'06),* (pp. 1-10) Baltimore, MD: IEEE. http://dx.doi.org/10.1109/SECCOMW.2006.359540 (Published)

Multiplex Encryption a Practical Approach to Encrypting Multi-Recipient Emails, by DING, Xuhua; Wei, Wei; CHEN, Kefei. (2005.0). *Information and Communications Security: 7th International Conference, ICICS 2005, Beijing, China, December 10-13: Proceedings,* (pp. 269-279) Beijing, China: Springer Verlag. http://dx.doi.org/10.1007/11602897_23 (Published)

Leak-Free Group Signatures with Immediate Revocation, by DING, Xuhua; Tsudik, Gene; Xu, Shouhuai. (2004.0). *Proceedings of the 24th International Conference on Distributed Computing Systems, 24-26 March, 2004, Hachioji, Tokyo,* (pp. 608-615) Hachioji, Tokyo, Japan: IEEE. http://dx.doi.org/10.1109/ICDCS.2004.1281628 (Published)

Experimenting with server-aided signatures, by DING, Xuhua; Mozzacchi, D.; Tsudik, Gene. (2002.0). *Proceedings on Network and Distributed System Security Symposium, San Diego, California, 2002 February 6-8,* San Diego, CA: Internet Society. (Published)

A method for fast revocation of public key certificates and security capabilities, by BONEH, Dan; DING, Xuhua; Tsudik, Gene; WONG, Chi Ming. (2001.0). *Proceedings of the 10th conference on USENIX Security Symposium, Washington, D.C., 2001 August 13-17,* Washington DC: ACM. (Published)

Research Grants

Singapore Management University

National Satellite of Excellence in Mobile Systems Security and Cloud Security, National Cybersecurity

R&D (NCR) Programme, National Research Foundation (NRF) , PI (Project Level): Robert H DENG , Co-PI (Project Level): Debin GAO, PANG Hwee Hwa, DING Xuhua, LI Yingjiu, 2019, S$7,498,320

A Novel Hybrid Kernel Symbolic Execution Framework For Malware Analysis, NSoE TSS Grant Call, National Satellite of Excellence - Trustworthy Software Systems , PI (Project Level): DING Xuhua , Co-PI (Project Level): JIANG Lingxiao, 2019, S$715,000

A system framework for reliable and dependable incident response on mobile devices, NSoE MSS-CS Research Programme, National Satellite of Excellence - Mobile Systems Security and Cloud Security , PI (Project Level): DING Xuhua , Co-PI (Project Level): Debin GAO, 2019, S$1,201,607

AutoPrivacyModel: Automated Feature Modelling for Identifying Illegitimate Uses of Privacy-Sensitive Data in Mobile Applications, NSoE MSS-CS Research Programme, National Satellite of Excellence - Mobile Systems Security and Cloud Security , PI (Project Level): JIANG Lingxiao , Co-PI (Project Level): David LO, SHAR Lwin Khin, DING Xuhua, Debin GAO, 2019, S$700,403

Advanced defense techniques for mobile systems and future networks, Huawei Technologies co. Ltd , PI (Project Level): Robert H DENG , Co-PI (Project Level): Debin GAO, DING Xuhua, LI Yingjiu, 2015

Secure Mobile Centre - Technologies and Solutions for Securing Mobile Computing, National Cybersecurity R&D (NCR) Programme, National Research Foundation (NRF) , PI (Programme Level): Robert H DENG , PI (Project Level): DING Xuhua, Debin GAO, JIANG Lingxiao, LI Yingjiu, David LO, PANG Hwee Hwa, 2014, S$6,415,200

Mobile Platform Security Based on Virtualization, Huawei Technologies co. Ltd , PI (Project Level): DING Xuhua, 2013, S$143,780

The Protection of I/O Flows Between Peripheral Devices and Applications, Ministry of Defence (MINDEF) , PI (Project Level): DING Xuhua, 2011, S$145,782

Techniques and Systems for Securing Scalable Multimedia Content Dissemination, Public Sector Research Funding (PSF), Agency for Science, Technology and Research (A*STAR) , PI (Project Level): Robert H DENG , Co-PI (Project Level): DING Xuhua, 2010, S$605,376

A Study on System Call Security and Extensible Secure Execution Environment, SMU Internal Grant, Ministry of Education (MOE) Tier 1 , PI (Project Level): DING Xuhua, 2014, S$20,289.67

Trapdoor Circuit and Its Application on Multiuser Computation, SMU Internal Grant, Ministry of Education (MOE) Tier 1 , PI (Project Level): DING Xuhua, 2013, S$19,651

A Study on Software Root of Trust Using Virtualization Techniques, SMU Internal Grant, Ministry of Education (MOE) Tier 1 , PI (Project Level): DING Xuhua, 2012, S$18,751.11

SESUM: A Secure Email System Using a Mediator, SMU Internal Grant, Ministry of Education (MOE) Tier 1 , PI (Project Level): DING Xuhua, 2004, S$40,000

TEACHING

Courses Taught

<u>Singapore Management University</u>

Undergraduate Programmes :

    Computational Thinking

    Foundations of Cybersecurity

    Network Security

Postgraduate Professional Programmes :

    Capstone Project - Cybersecurity

Postgraduate Research Programmes :

    Empirical Research Project 1

    Empirical Research Project 2

    Empirical Research Project 3

    Empirical Research Project 4

THESES AND DISSERTATIONS

Theses and Dissertations Supervised

<u>Singapore Management University</u>

Supervisor, "Secure Enforcement Of Isolation Policy On Multicore Platforms With Virtualization Techniques", Dissertation by ZHAO SIQI, PhD in Information Systems, Singapore Management University, 2018

Theses and Dissertations Assessed

<u>Singapore Management University</u>

Committee Member, "Techniques for Identifying Mobile Platform Vulnerabilities and Detecting Policy-violating Applications", Dissertation by SU MON KYWE, PhD in Information Systems, Singapore Management University, 2017

Committee Member, "Towards Secure Online Distribution of Multimedia Codestream", Dissertation by LO SWEE WON, PhD in Information Systems, Singapore Management University, 2016

Committee Member, "Online Social Network Based Information Disclosure Analysis", Dissertation by LI YAN, PhD in Information Systems, Singapore Management University, 2014

Committee Member, "Security and Privacy in RFID-Enabled Supply Chains", Dissertation by CAI SHAOYING, PhD in Information Systems, Singapore Management University, 2014

Committee Member, "Virtualization-Based System Hardening Against Untrusted Kernels", Dissertation by CHENG YUEQIANG, PhD in Information Systems, Singapore Management University, 2014

Committee Member, "A Study of the Imitation, Collection and Usability Issues of Keystroke Biometrics", Dissertation by TEY CHEE MENG, PhD in Information Systems, Singapore Management University, 2013

Co Supervisor, "Exploiting Human Factors in User Authentication", Dissertation by GUPTA PAYAS, PhD in Information Systems, Singapore Management University, 2013