

Curriculum Vitae

Liang Cheng

Department of Computer & Information Sciences
University of Pennsylvania
Philadelphia, PA 19104
longines.cheng@gmail.com

Employment

Visiting Professor, Department of Computer & Information Sciences, University of Pennsylvania, 2014.1–2015.1

Associate Professor, Institute of Software, Chinese Academy of Sciences, 2013–present

Assistant Professor, Institute of Software, Chinese Academy of Sciences, 2009–2013

Education

Ph.D., Computer Science, University of Science and Technology of China, 2009

Dissertation: *Research on Verification of Secure Operating Systems Using Model Checking*

B.E., Electronic Engineering, University of Science and Technology of China, 2003

Area of Specialization

Operating System Security; Program Analysis; Medical Cyber-Physical System Security

Research

Selected Publications

1. ZHANG Yang, DENG Yi, CHENG Liang, SUN Xiaoshan: **INDIO: effective integer overflow detection in binary code**. Chinese Science Bulletin. (*peer review*)
2. Liang Cheng, Yang Zhang, Zhihui Han, Yi Deng, Xiaoshan Sun, Dengguo Feng: **Evaluating and comparing the quality of access control in different operating systems**. Computers & Security. (*Accepted*)
3. Yi Deng, Yang Zhang, Liang Cheng, Xiaoshan Sun: **Static Integer Overflow Vulnerability Detection in Windows Binary**. IWSEC 2013: 19-35
4. Xiaoshan Sun, Liang Cheng, Yang Zhang, Yi Deng, Jingbiao Hou: **Refining the Pointer Analysis by Exploiting Constraints on the CFL-Paths**. APSEC 2013: 17-24
5. Dong Chen, Yang Zhang, Liang Cheng, Yi Deng, Xiaoshan Sun: **Heuristic Path Pruning Algorithm Based on Error Handling Pattern Recognition in Detecting Vulnerability**. COMP-SAC Workshops 2013: 95-100
6. Zhihui Han, Liang Cheng, Yang Zhang, Dengguo Feng: **Measuring and Comparing the Protection Quality in Different Operating Systems**. NSS 2013: 642-648
7. Liang Cheng, Yang Zhang, Zhihui Han: **Quantitatively Measure Access Control Mechanisms across Different Operating Systems**. SERE 2013: 50-59

8. Xiaoshan Sun, *Liang Cheng*, Yang Zhang: **A Covert Timing Channel via Algorithmic Complexity Attacks: Design and Analysis**. ICC 2011: 1-5
9. *Liang Cheng*, Yang Zhang, and Dengguo Feng: **A Language for Secure Requirement Description Based on Information Flow**. In proceedings of 2010 IEEE International Conference on Intelligent Computing and Intelligent Systems (ICIS '10), pp. 397-401, 2010.
10. *Liang Cheng*, Yang Zhang, and Deng-Guo Feng: **An Approach of Degenerate Test Set Generation Based on Secure State Transition**. Journal of Software, 21(3): 539-547, 2010.
11. Yang Zhang, *Liang Cheng*: **A New Property Verification Method for Code Security based on pointer logic**. Chinese Journal of Computers, 32(6):1119-1125, 2009.

Funded Projects

Security mechanism design of medical cyber-physical system in an integrated clinical environment (**Principle Investigator**)

Research on Logic-Driven Evaluation of Multiple Operating System Security Mechanisms (**Principle Investigator**)

Research on Cloud Computing-Oriented Unified Security Mechanisms (**Co-PI**)

Research on Cross-Platform Formal Verification of Security Mechanisms in Operating Systems (**Co-PI**)