# Zhen Huang

## Contact Information

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## Research Interests

Software security, program analysis, software reliability

## Education

Ph.D in Computer Engineering, University of Toronto, 2009 – 2018 (Expected).
*Advisor*: Prof. David Lie

M.A.Sc in Computer Engineering, University of Toronto, 2007 – 2009.
*Advisor*: Prof. David Lie

B.Sc in Computer Science, Wuhan University, 1991 – 1995.

## Publications

### Conference Papers

**Z. Huang**, M. DAngelo, D. Miyani, and D. Lie, "Talos: Neutralizing vulnerabilities with security workarounds for rapid response," in *2016 IEEE Symposium on Security and Privacy (SP)*, May 2016, pp. 618–635

W. Huang, **Z. Huang**, D. Miyani, and D. Lie, "LMP: Light-weighted memory protection with hardware assistance," in *Proceedings of the 2016 Annual Computer Security Applications Conference*, ser. ACSAC '16, 2016

**Z. Huang** and D. Lie, "Ocasta: Clustering configuration settings for error recovery," in *2014 44th Annual IEEE/IFIP International Conference on Dependable Systems and Networks*, June 2014, pp. 479–490

K. W. Y. Au, Y. F. Zhou, **Z. Huang**, and D. Lie, "Pscout: Analyzing the android permission specification," in *Proceedings of the 2012 ACM Conference on Computer and Communications Security*, ser. CCS '12. New York, NY, USA: ACM, 2012, pp. 217–228. [Online]. Available: http://doi.acm.org/10.1145/2382196.2382222

K. W. Y. Au, Y. F. Zhou, **Z. Huang**, P. Gill, and D. Lie, "Short paper: A look at smartphone permission models," in *Proceedings of the 1st ACM Workshop on Security and Privacy in Smartphones and Mobile Devices*, ser. SPSM '11. New York, NY, USA: ACM, 2011, pp. 63–68. [Online]. Available: http://doi.acm.org/10.1145/2046614.2046626

### Preprints

**Z. Huang** and D. Lie, "Senx: Semantically Correct Patch Generation for Security Vulnerabilities," arXiv:1711.11136, 2017

D. Miyani, **Z. Huang**, and D. Lie, "BinPro: A Tool for Binary Source Code Provenance," arXiv:1711.00830, 2017

**Z. Huang** and D. Lie, "SAIC: Identifying Configuration Files for System Configuration Management," arXiv:1711.03397, 2017

## Talks

**Talos: Neutralizing Vulnerabilities with Security Workarounds for Rapid Response**

- Oakland 2016, 2016/05/24, San Jose, CA

**Ocasta: Clustering Configuration Settings For Error Recovery**

- DSN 2014, 2014/06/26, Atlanta, GA

## Awards and Honours

Doctoral Completion Award 2016 – 2017

Bell Canada Graduate Scholarship 2012 – 2013

University of Toronto Fellowship 2007 – 2012

## Services

External Reviewer

- NDSS 2018
- CCS 2017
- Usenix Security 2017
- Oakland 2016
- NDSS 2016
- Usenix Security 2015
- Oakland 2014

## Teaching Experience

**Teaching Assistant** 2008 – Present

*University of Toronto*, Toronto, ON

- ECE1776: Computer Security, Cryptography and Privacy, 1 term
- ECE568: Computer Security, 7 terms
- ECE353: Operating Systems, 3 terms
- ECE344: Systems Software, 3 terms
- CSC326: Programming Languages, 3 terms
- CSCC24: Operating Systems, 1 term

## Research Mentoring

Led/mentored an exchange undergraduate student in analyzing and reproducing security vulnerabilities, 2017

Mentored a graduate student in designing and developing a tool that leverages hardware assistance to perform security bounds check, 2016

Led/mentored a team of two graduate students in analyzing security vulnerabilities and developing proof-of-concept exploits, 2016

Led/mentored an exchange graduate student in porting a taint analysis tool from 32bit Linux to 64bit Linux and Windows, 2015

Led/mentored an undergraduate student in developing of a tool to intercept and collect traces of configuration API calls and file system calls, 2015

Mentored a graduate student in designing and developing a tool to analyze the security permissions of Android OS, 2012

## Affiliation

Student Member, IEEE

## Work Experience

**Senior Software Engineer** 2006 – 2007

*EMC*, Burlington, ON

- Developed low-level database API module for EMC NetWorker system
- Designed and developed network remote control module of EMC NetWorker system

**Software Developer III** 2001 – 2006

*SAP Canada*, Toronto, ON

- Designed and developed credit card authorization module of SAP Transactionware GM system
- Developed and maintained credit/debit card authorization backend of SAP Transnet system
- Led a development team of three developers on six development projects

**Senior Software Developer** 1998 – 2000

*Software Development Centre, Bank of China*, Beijing, China

- Designed and developed API service middleware for accounting system
- Supervised and trained junior software developers

**Software Developer** 1995 – 1998

*Hubei Provincial Branch, Bank of China*, Wuhan, China

- Developed cross-bank information exchange system
- Designed and developed telephone banking module for credit card authorization system
- Implemented batch processing module for accounting system