

Resume

Name: 毛敬豪 (Ching-Hao Mao)

Email: chmao2008@gmail.com

Cell Phone: +886-939-097985

Home Phone: +886-2-2722-4640



Introduction

I am a Ph. D. candidate at National Taiwan University of Science and Technology in the department of Computer Science and Information Engineering. My advisor is Prof. Hahn-Ming Lee and I am a part of Intelligent System Laboratory. I am also with the iCAST project, supporting network security in intrusion detection and alert correlation based on machine learning. I collaborated with Prof. Tsuhan Chen (ECE, Carnegie Mellon University) under International Collaboration for Advancing Security Technology (iCAST) project from CyLab (Pittsburgh US) at 2008. Now I am collaborating with Prof. Christos Faloutsos (CSD, Carnegie Mellon University) in the aspect of sequential mining and trajectory analysis. My research interests include intrusion detection and alert correlation, anti-spam e-mails, botnet detection and semi-supervised learning.

I got my MS, in Information Management, at Chinese Culture University in 2004. I worked with Prof. Huey-Ming Lee on several intelligent control mechanisms in information appliances during my graduate school. I got my BS, also in Information Management, at TamKang University in 2001. I designed and developed on-line database for history magazine using several active web pages techniques during the last two years of my undergrad. In the past, I have interned at Institute of Information Technology (Taipei), and at S.C. Johnson & Son Taiwan, Ltd.

EDUCATION

- **National Taiwan University of Science and Technology, Taipei, Taiwan**

Ph. D Candidate: Computer Science and Information Engineering

Advisor: Prof. Hahn-Ming Lee

Interests: network security, intrusion (botnet, worm and Trojan) detection, machine learning (semi-supervised learning and active learning)

● **Chinese Culture University**, Taipei, Taiwan

M.S. Information Management

Advisor: Prof. Huey-Ming Lee

Interests: information appliances, artificial intelligent, fuzzy control, neural fuzzy

Thesis: Intelligent control Model of Information Appliances

● **Tamkang University**, Taipei, Taiwan

B.S. Information Management

FOLLOWSHIPS

National Science Council Research Fellowship 2005-

International Collaboration for Advancing Security Technology
(iCAST) 2006-

WORK EXPERIENCE

S.C. Johnson & Son Taiwan, Ltd. Taipei,
Taiwan 2003/2~2004/2

Develop Enterprise Resource Planning and workflow system

Network architecture management

Institute for Information Industry, Taipei,
Taiwan 2001/7~2002/7

Develop internal information systems

Build up intranet network architecture

RESEARCH EXPERIENCE

Intrusion detection and event analysis

Current

Botnet command and control (C&C) message detection using temporal analysis method

Encrypted botnet C&C message detection based on protocol graph

Intrusion detection system (IDS) alert correlation and active graph construction

Semi-supervised learning for network security

Current

Co-training algorithm, EM algorithm and active learning paradigm for large network data environment

Rare category detection using K-nearest-neighbors based method in network environment

Anti-spam Emails

2006

Applying word social network to profile legitimate and spam Emails and identifying spam Emails

Intelligent control mechanism of Information appliances

2004-2007

Applying fuzzy inference mechanism to represent users preference and using fuzzy neural network to learn users behaviors for intelligent control

SELECTED PUBLICATIONS

Ching-Hao Mao, Yu-Jie Chen, Si-Yu Huang, and Hahn-Ming Lee, "IRC-Botnet Network Behavior Detection in Command and Control Phase Based on Sequential Temporal Analysis," in the 19th Cryptology and Information Security Conference (CISC 2009), Taipei, Taiwan, 3-5 June 2009. (Best Student Paper Award)

Ching-Hao Mao, Hahn-Ming Lee, Devi Parikh, Tsuhan Chen, Si-Yu Huang, "Semi-Supervised Cotraining and Active Learning based Approach for Multi-view Intrusion Detection," in *Proceedings of 24th Annual ACM*

Symposium on Applied Computing (SAC'09), 2009. (Acceptance rate: 16%)

Che-Fu Yeh, **Ching-Hao Mao**, Hahn Ming Lee and Tsuhan Chen, “Adaptive E-mail Intention Finding Mechanism based on E-mail Words Social Networks,” *ACM SIGCOMM 2007 Workshop on Large-Scale Attack Defense (LSAD)*, August 27, 2007, Kyoto, Japan. (EI indexed)

Ching-Hao Mao, Ta-Wei Hung, Jan-Ming Ho and Hahn-Ming Lee, 2006, “Semantic Similarity Measurement of Chinese Financial News Titles Based on Event Frame Extracting,” *2006 IEEE International Conference on e-Business Engineering (ICEBE)*, Shanghai, China, October 24-26, 2006. (EI indexed)

Chiung-Wei Huang, Ching-Chung Yu, **Ching-Hao Mao**, and Hahn-Ming Lee, 2006, “Network Motif Model: An Efficient Approach to Extract Features from Relational Data,” *2006 IEEE International Conference on Systems, Man, and Cybernetics*, Taipei, Taiwan, October 8-11, 2006.

Huey-Ming Lee, **Ching-Hao Mao**, A Self-Adaptive Evolutionary Negative Selection Approach of Home Anomaly Events Detection, Knowledge-Based Intelligent Information & Engineering Systems, *Lecture Notes in Artificial Intelligence, LNAI 4694/2007*, Springer-Verlag, pp. 325-332, 2007.

Huey-Ming Lee, **Ching-Hao Mao** and S.-Y. Lee, “Intelligent Control Model of Information Appliances”, *Proceedings of the 8th International Conferences on Knowledge-Based Intelligent Information & Engineering Systems (KES 2004)*, Lecture Notes in Artificial Intelligence, Springer-Verlag, LNAI 3215, pp.123-128, Wellington, New Zealand. Sep. 22~24, 2004.

AWARDS / HONORS / SCHOLARSHIPS

- The 19th Cryptology and Information Security Conference , Best Student Paper Award, 2009.
- Computer Society of the Republic of China Graduate Research Scholarship 2007

(中華民國電腦學會研究生講學金,成績優異,同年級第一名)

- Hwa Kan Scholarship, Chinese Culture
University 2004

(華岡獎學金,成績優異,同年級第一名)

- Tiwu Wang Scholarship, United Daily News
Group 2004, 2006