VirginiaTech
VIRGINIA POLYTECHNIC INSTITUTE AND STATE UNIVERSITY

Computer Science Seminar Series

National Capital Region

Intelligent Malware Detection by Applying Data Mining Techniques

Speaker: Prof. Yanfang (Fanny) Ye

West Virginia University

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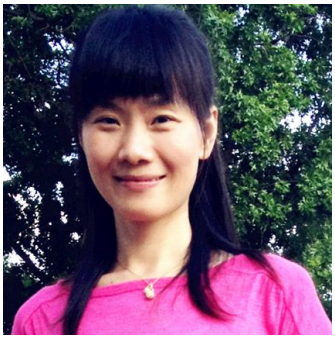
1:00PM- 2:00PM, NVC 207

Abstract

Numerous attacks made by the malware (e.g., viruses, backdoors, spyware, trojans and worms) have posed a major security threat to Internet users. Currently, the most significant line of defense against malware is anti-malware software products, such as Symantec, Kaspersky, Comodo and Kingsoft's Anti-virus. Unfortunately, driven by the economic benefits, today's malware samples are created at a rate of thousands per day. Anti-malware venders are now confronted with millions of potential malware samples a year. In order to continue successfully combating the increase in malware, there has been an increasing reliance on intelligent systems which can automatically detect malware from the real and large daily sample collection.

In this talk, I will first introduce the development of malware and anti-malware industry and present the industrial needs for intelligent malware detection. Instead of focusing on the development of a single classification algorithm that only works for a narrow range of file sample sets, I will then introduce a unified classification ensemble framework, effectively combining results from heterogeneous base-level classifiers derived by different learning methods with different feature representations on dynamic training sets.

Biography



Dr. Yanfang (Fanny) Ye is an Assistant Professor in the Lane Department of Computer Science and Electrical Engineering at West Virginia University. Before joining WVU, she was the Principal Scientist in Comodo Security Solutions, Inc. (2010~2013), and formerly the Deputy Director at Kingsoft Internet Security Corporation (2008~2010) responsible for cloud security R&D. Her research areas are in cyber security, mobile security, smart device and big data analytics. More information about her work can be found at: http://www.csee.wvu.edu/~yaye/