Intern Requirement

No. of students required	3
Preferred Discipline	• Computing
Prerequisites/ Skills Required	• Strong interest in computer security • Programming skills (c, c++ or others) • Knowledge of assembly language would be an advantage

Project Details

Title	Software Vulnerability Discovery Through Black-box Testing
Overview/Background	Malware such as Internet worms, computer viruses and Trojan horses often spread and create lots of inconvenience to computer users. In extreme cases, financial losses are also encountered. Malware in most cases propagates by exploiting insecure software. As commercial software companies often do not disclose the proprietary source code for their software products, black-box testing is one of the techniques widely used in the industry that can be used to audit closed-source software. The interns will: • be exposed to the industrial practices of auditing closed-source software • have a deeper understanding of software binaries • enhance their programming and tools development skills
Objectives/Scope/ Deliverables	The aim of the project is to develop black-box tester(s) based on the specifications of the software product(s). ***Deliverables*** • A systematic list of features present in each software. • Application(s) to generate test cases for the software(s) based on the features. • Method(s) to detect anomalies. ***Scope*** • List of Features. There are numerous features supported by the software(s). The interns will populate a feature list for each product as part of their work-plan. • Test cases generation. The generation of test cases is to be automated to minimize manual efforts. The interns will develop application(s) to generate different test cases to audit the targeted features. • Anomalies detection. As black-box testing is automated, a method is required to detect if the product is still running normally. • Efficiency of tests. The process to audit closed-source software can be time-consuming. Therefore, the interns will also research on methods to make black-box testing more efficient.
Project Duration	6 months