EC700 – Malware, Online Abuse, and Cybercrime

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Office Location: PHO 314
Office Hours: Monday and Wednesday 5pm-6pm

Schedule: Monday and Wednesday 12:20-2:00
Location: WED 212

Course Description:
This class provides an overview of malicious activity happening on the Internet. Through lectures, class discussion, and paper reading we will analyze a wide spectrum of computer-powered abuse, from malicious software exploited by criminals for a financial gain to human-driven online harassment. The class will focus on the technical aspects that make such abuse possible, together with its social and economic aspects. We will also cover various mitigation techniques that have been proposed over the years to disrupt malicious operations, focusing on the aspects that worked and those that did not.

References:
There are no mandatory textbooks for this class, as we will mostly discuss content from academic papers.

Grading:
Class participation: 15%
Paper evaluations: 20%
Paper presentations: 30%
Project: 35%

Paper evaluations:
Every week, we will be reading two research papers from top-tier conferences as part of the class. These papers will be essential supplements to the lectures and to the project. Each student will be submitting two paper evaluations every week. The evaluations should be brief (1-2 sentence per question) but specific, and should answer the following questions:

- What is the problem described in the paper?
- Why is it an important problem?
- What is the main contribution of the paper?
- Strengths?
- Weaknesses?

The evaluations are due at the beginning of the lecture that is associated with the given paper (usually two papers will be presented every Wednesday). Paper evaluations should be submitted to the Dropbox link posted on Piazza, in PDF form. Please use “EC700_evaluation_paperid_buusername.pdf” as a template for the filename. Late submissions will not be taken into consideration.
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**Paper presentations:**
Each student will select two papers from the course paper reading list (the list is available on Piazza) and present them during lectures in a 25-30 minute conference-style talk. The presentation will be followed by a class discussion, focusing on the strength and weaknesses of the papers.

**Project:**
Instead of a final exam, this class has a final project, which will involve collecting data about a certain type of abuse (e.g., malware activity or spam on Twitter), an analysis of it, and the development of a mitigation against it (e.g., a spam detection system). All these aspects will need to be summarized in a report of at most 10 pages, plus two class presentations (an mid-project presentation and a final one). You will have around two months to complete your project. Projects will be completed individually or in teams of two students.

**Academic honesty:**
All students are responsible for reading Boston University’s academic conduct policy. If you are unclear about any item related to academic honesty, you should immediately ask the professor. Dishonesty in representing one's academic work is a serious ethical violation, and will be reported according to university policy.