Network Enterprise Security

Syllabus

Fall 2019

Overview

- Objectives of this class
  - Basic understanding of networking.
  - Introduction to Network attacks and defense.
  - DevOps in enterprise systems.
  - Monitoring and tooling used in enterprise systems.
  - ML and Defense techniques for such enterprise systems.

Topics Covered /Assignments

- Labs 70%
  - Networking Basics
  - Containers
  - Machine Learning tools
  - Advanced Persistent Threats
- Final Project 20%
- Current research (reading and discussion) 10%

Tests

- Midterm 10%
- Final 10%

What to expect

Aside from the lab assignments, the structure of the class will be primarily lecture based with in class hands on practice of specific tools to solidify concepts. You will need to have a Linux machine or virtual machine ready in class to follow along.

Teachers

In addition to the instructor, this course will be taught with the assistance of the Applied Research Laboratories, Dr. Mohit Tiwari and two TAs: Riley Wood and, Prateek Sahu.

Office hours

- Antonio Espinoza
  - Wednesday, Friday 12-1 PM, TA Rooms(0th floor)
- Riley Wood
  - Monday 2-3 PM, TA Rooms(0th floor)
- Prateek Sahu
  - Thursday 10-11 AM, TA Rooms(0th floor)

Reports

We expect all reports to be submitted as PDFs. There is a LaTeX template on canvas you are free to use. Don't put pages of source code in the report. Compress (tar,zip) source code or extra files and submit the compressed file.

Grading

For letter grade purposes: A+ is >= 100, A is 99-91, A- is 90-89, B+ is 88-87, B is 86-81, B- is 80-79, C+ is 78-77, C is 76-71, C- is 70-69, D is 68-60, below 60 is an F.

Prerequisites

This course will require you to use Python and C. In addition, a familiarity with the Linux command-line interface will be very helpful.