CSC 6991 Topics in Computer Security

Fengwei Zhang

Who Am I?

- Fengwei Zhang
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  - Website: http://fengwei.me
- Course information
  - Course website: http://www.cs.wayne.edu/fengwei/17fa-csc6991
  - Office Hours: M, W 11:15AM – 12:15PM (After the class)

Why Study Security?

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It's cool to be a hacker...

It's a hot topic and everybody talks about it...

It's useful for finding a job...

Course Overview

- Designed for students interested in computer security research and helps them get started

- Covers state-of-the-art research topics in computer security

- WSU needs security researchers

Topics in Security Research

- Systems security
    - Malware Detection & Memory Introspection
    - Transportation Security
    - Malware Analysis
    - Isolated Execution Environments
    - Memory Forensics
    - Car hacking
    - DMA attacks

Topics in Security Research

- Network security
  - DDoS Attack
  - Web Security
  - Intrusion Detection Systems (IDS)

- Mobile security
  - Android Security
  - iOS Security
  - TrustZone on ARM
  - IoT Security

- More on the course website

Prerequisites

- CSC 4290 Introduction to Computer Networking

- CSC4420 Computer Operating Systems

- CSC5270 Computer Systems Security

Course Format

- Reading research papers
  - Read one paper per class
  - Check the course webpage for the assigned paper
  - Send the paper summary to the mailing-list before the class
  - Not necessary assigned, email me if you want to read other security papers

Course Format

- Writing paper summaries
  - Write about 100 words
  - Send it to the class mailing-list before class
  - Strengths and weaknesses (optional)

Course Format

- Presenting papers
  - Pick three papers/topics to present
  - Email your choices to the mailing-list (do it ASAP to reserve your favorite papers)
  - Use slides and prepare to talk for 40 minutes
  - Discuss the papers in the presentation

Course Term Project

- A mini research project
  - building a new system
  - improving an existing technique
  - performing a large case study
- Project proposals due on Oct 02
  - 1-2 pages
- Project presentations on Dec 6 & 11
- Project final reports due on Dec 11

Grading Policy

- Class participation: 10%
  - Paper discussion Q&A
- Paper reviews: 20%
- Class presentations: 30%
- Term project: 40%

Academic Integrity

- Please read the University's Academic Integrity Page

  - http://doso.wayne.edu/academic-integrity.html

- WSU Student Code of Conduct.

  - http://doso.wayne.edu/assets/codeofconduct.pdf

Student Disabilities Services

- If you have a documented disability that requires accommodations, you will need to register with Student Disability Services for coordination of your academic accommodations.

- The Student Disability Services (SDS) office is located in the Adamany Undergraduate Library. The SDS telephone number is 313-577-1851 or 313-202-4216 (Videophone use only).

Additional Resources

- How to Read an Engineering Research Paper. William G. Griswold. [Link]

- Writing Technical Papers in CS/EE. Henning Schulzrinne. [Link]

- The Elements of Style. Strunk and White. [Link]

Homework 0

- Subscribe to CSC 6991 mailing-list today
  - https://lists.wayne.edu/cgi-bin/wa?SUBED1=csc6991&A=1
  - Or https://lists.wayne.edu

- Send an email to the list to introduce yourself by next class

- Take a look at the topics/papers and email your choices in next two weeks