

# CSC 6991 Advanced Computer Security

Fengwei Zhang

# Who Am I?

- Fengwei Zhang
  - Assistant Professor of Computer Science
  - Office: Maccabees Building, Room 14109.3
  - Email: fengwei at wayne dot edu
  - Website: <http://fengwei.me>
- Course information
  - Course website:  
<http://www.cs.wayne.edu/fengwei/15fa-csc6991>
  - Office Hours: M, W 10:00AM - 11:00AM

A large, faded version of the Wayne State University seal is centered in the background. The seal is circular and contains the text 'WAYNE STATE UNIVERSITY' around the top, 'INDUSTRY INTELLIGENCE' around the bottom, and '1868' at the very bottom. In the center of the seal is a torch with a flame, resting on an open book.

# Why Study Security?

# Why Study Security?

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
  - 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
- 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
  - 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 Sep 30
  - 1-2 pages
- Project presentations on Dec 9 & 14
- Project final reports due on Dec 14

# 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
- 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