VICEROY Northwest Institute for Cybersecurity Education and Research (CySER)

Research Mentorships Update

Jan. 22, 2024

CySER Commitments
Details at https://cyser.wsu.edu/certificate-offerings/

- **CySER Fundamentals**
  - Course work
    - Three mandatory
      - CptS 327, CptS 427, CptS 428
    - Four electives
    - Capstone/senior design focused on cybersecurity
  - Seminars
  - Summer Workshop
  - Internship
  - Research

- **CySER Basics**
  - Course work
    - CptS 111 (Python)
    - MIS 372
    - MIS 374
    - Capstone/senior design focused on cybersecurity
  - Seminars
  - Summer Workshop
  - Internship
  - Research

Research Experience

- https://cyser.wsu.edu/summer-workshop/cyser-summer-workshop-2023-posters/
- Undergrads assigned to graduate mentors
- Participate in real-world research related to cybersecurity
- Meant to give "exposure" not "mastery"
- Undergrads should gain familiarity with a research project and get hands-on experience
- Present outcomes (results, lessons learned) in a poster session at the CySER Summer Workshop 2024

Workload

- In general, courses at WSU expect **2 hours** of student work outside of class per week per credit hour.

- If we treat the mentored research projects as a 1-credit course, this mean 2 hrs/wk, but this is a bit high, so our target is **1.5 hrs/wk**.

- Assuming you started last week, there are **14 weeks** during the semester (excluding Spring Break and Finals).

- This means a total of **21 hours** spent on your research projects.

- We expect all students to spend at least **20 to 25 hours** on their projects between now and the CySER Summer Workshop at the end of May, with the exact timing to be determined between you and your mentors.

Milestones

- All milestones throughout the course of the semester are to be determined by project mentors.

- Accommodate students' schedules and other obligations, keeping in mind the target minimum time spent on project (20-25 hours).

- Final milestone is to prepare a poster and present it during the CySER Summer Workshop 2024 (late May/early June).

Mentoring Plan

- To be filled out by project mentors (i.e., graduate students)
- Many of you filled these out last year
- I will provide a template some time this week, along with an example
- Make one document containing individual plans for each team
- Elements
  - Participating Undergraduates
  - Project Description
    - High-level
    - Succinct
    - If you have already written something up, just copy/paste it in
  - Undergraduate Involvement
    - Describe how undergraduates will participate in the project

Project Status Check-In

- Hopefully, everyone has met with their mentors as of last week.
- Mentors: Let us know if you haven't been able to get in contact with any of the undergrads on your teams.

Team Assignments

Team	Members	Mentor	Project
1	Sophia McMahon, Keaton Persons	Ben McCormack	Vulnerability identification and exploitation of IOT smart inverters
2	Alex Barran, Alex Hagood, Jackson Kroon	Ben McCormack	Implications of compromised DERs on a distribution system
3	Yessica Bello Luna, Blake Davidson, William Fralia	Ben McCormack	Economic and social impacts of a grid with compromised IOT inverters
4	Sarahy Guerrero Marquez, Ian Mickelson, Dominic Murillo	Julia Stachofsky	Assessing the Transnational Effects of Surveillance on Media Freedom
5	Sam Lalor, Dan Ngo	Julia Stachofsky	Defending Against AI-Enhanced Information Operations and the Creation of Deepfakes
6	Jared Mistica, Lilith Sutton	Blessing Akinrotimi	Cyber education Project 1
7	Meredith Lamb, Jessica Martin	Blessing Akinrotimi	Cyber education Project 2

Team Assignments

Team	Members	Mentor	Project
8	Caitlyn Boyd, Noah Manuel	James Crabb	Text mining for cybersecurity student learning outcome classification
9	Isabella Sunderman, Puumaaya Tahiru	James Crabb	Data synthesis for balancing cybersecurity datasets using ML
10	Cameron Botelho, Adam Caudle, Justin Van Der Sluys, Mikayden Weise	Brenden Fraser-Hevlin	Bioengineering 1
11	Cayden Calo, Bryan Frederickson	Alec Schuler	Bioengineering 2
12	Douglas Takada, Freeman Trader	Tashi Stirewalt	Dependency graph analysis for source code
13	Sean Hodgson, Emily West	Tashi Stirewalt	Malware detection
14	Katie Brickner, Fredy Fernandez, Elizabeth Hale	James Halvorsen	ML applications in cybersecurity

Questions