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/](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 means 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

<table>
<thead>
<tr>
<th>Team</th>
<th>Members</th>
<th>Mentor</th>
<th>Project</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Sophia McMahon, Keaton Persons</td>
<td>Ben McCormack</td>
<td>Vulnerability identification and exploitation of IOT smart inverters</td>
</tr>
<tr>
<td>2</td>
<td>Alex Barran, Alex Hagood, Jackson Kroon</td>
<td>Ben McCormack</td>
<td>Implications of compromised DERs on a distribution system</td>
</tr>
<tr>
<td>3</td>
<td>Yessica Bello Luna, Blake Davidson, William Fralia</td>
<td>Ben McCormack</td>
<td>Economic and social impacts of a grid with compromised IOT inverters</td>
</tr>
<tr>
<td>4</td>
<td>Sarahy Guerrero Marquez, Ian Mickelson, Dominic Murillo</td>
<td>Julia Stachofsky</td>
<td>Assessing the Transnational Effects of Surveillance on Media Freedom</td>
</tr>
<tr>
<td>5</td>
<td>Sam Lalor, Dan Ngo</td>
<td>Julia Stachofsky</td>
<td>Defending Against AI-Enhanced Information Operations and the Creation of Deepfakes</td>
</tr>
<tr>
<td>6</td>
<td>Jared Mistica, Lilith Sutton</td>
<td>Blessing Akinrotimi</td>
<td>Cyber education Project 1</td>
</tr>
<tr>
<td>7</td>
<td>Meredith Lamb, Jessica Martin</td>
<td>Blessing Akinrotimi</td>
<td>Cyber education Project 2</td>
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<tr>
<td>8</td>
<td>Caitlyn Boyd, Noah Manuel</td>
<td>James Crabb</td>
<td>Text mining for cybersecurity student learning outcome classification</td>
</tr>
<tr>
<td>9</td>
<td>Isabella Sunderman, Puumaaya Tahiru</td>
<td>James Crabb</td>
<td>Data synthesis for balancing cybersecurity datasets using ML</td>
</tr>
<tr>
<td>10</td>
<td>Cameron Botelho, Adam Caudle, Justin Van Der Sluys, Mikayden Weise</td>
<td>Brenden Fraser-Hevlin</td>
<td>Bioengineering 1</td>
</tr>
<tr>
<td>11</td>
<td>Cayden Calo, Bryan Frederickson</td>
<td>Alec Schuler</td>
<td>Bioengineering 2</td>
</tr>
<tr>
<td>12</td>
<td>Douglas Takada, Freeman Trader</td>
<td>Tashi Stirewalt</td>
<td>Dependency graph analysis for source code</td>
</tr>
<tr>
<td>13</td>
<td>Sean Hodgson, Emily West</td>
<td>Tashi Stirewalt</td>
<td>Malware detection</td>
</tr>
<tr>
<td>14</td>
<td>Katie Brickner, Fredy Fernandez, Elizabeth Hale</td>
<td>James Halvorsen</td>
<td>ML applications in cybersecurity</td>
</tr>
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Questions