Data Analytics for Cybersecurity

Fall 2023

Final Project (300 points)

OVERVIEW:

For the project, students will work in teams of two on a cybersecurity problem that demonstrates the students' facility with data analytics. At the end of the semester, teams will deliver a Jupyter notebook, paper, and less than six-minute video summarizing the project work.

TIMELINE (by start of class on each date):

1. October 31, 2023: submit project proposal. This should be a 1 page written description of who is on your team, what dataset you intend to analyze and what research question you intend to answer. (CSCE 704: your research goal should be advancing the body of knowledge by implementing data analysis—something that might be suitable for a conference publication. CSCE 439: your research goal could be advancing the body of knowledge or attempting to reproduce results of others. If the latter, it is not sufficient to simply run someone else's code, you need to show that you have implemented a data analysis yourself). You should also include citations of at least 3 papers that you believe are most closely related to your proposed research. https://dl.acm.org/ and https://ieeexplore.ieee.org/Xplore/home.jsp are good places to look for research. Use the TAMU VPN to get full access (https://it.tamu.edu/services/network-and-internet-access/virtual-private-networks/virtual-private-network-vpn/index.php)
2. November 17, 2023: submit project checkpoint. This should be a written description of your progress so far, timeline to completion. For your checkpoints, you may want to start filling in the body of your research paper.
3. November 30, 2023: submit video and paper. You will submit the PDF of the paper. In the abstract, provide a link to the video (e.g. Google drive link, or Youtube link)
4. November 30 Graduate Project presentations begin. For your presentation, be prepared to show your video and answer questions. You will have 10 minutes for your video/question time. All CSCE 439 and CSCE 704 students are required to attend. Attendance will be taken.
5. December 8 More Graduate Project presentations. All CSCE 439 and CSCE 704 students are required to attend. Attendance will be taken.

DELIVERABLES:

1. Approximately 6 minute video describing your work. I use OBS Studio to make videos (https://projectobs.com/en/download/), but you are free to use whatever tool you are comfortable with.
2. Research paper in IEEE Conference format (https://www.overleaf.com/latex/templates/ieee-conference-template-example/nsncsyjfmpxy). Your paper should have an abstract, introduction, related work, methodology, results and conclusion, as well as proper citations.
3. Jupyter notebook containing your source code. If your dataset is available on the web, you can simply provide a link to it as a comment. If not, you also need to submit your dataset in a ZIP file.

4. Peerceptiv reviews. Review phase ends 12/5/2023. Feedback phase ends 12/7/2023. NOTE! There is no way to have a late entry into Peerceptiv.
5. Partner evaluation form (submit when submitting paper/video). https://forms.gle/vL2MeFsNZMz7agCr9