CAE Research Project Meeting Minutes

10/7/2021

- Participants
    - Dr. Waleed Farag (PI)
    - Dr. Soundararajan Ezekiel (Co-PI)
    - Dr. Xinwen Wu
    - Maria Balega
    - Zaryn Good
    - Franklin May
    - Cassie Lefever
    - Alicia Deak
    - Eliot Hocke
    - Ryan Gress
- Meeting started at 4:00 p.m.
- Unanimously approved minutes for meeting on September 30, 2021
- Main Points
    - Discussed:
        - Maria & Cassie
            - Got access to TCNJ machine and Redhawk machine at IUP
            - Ran through the five IoT23 files in XGBoost, all had 9 classifications except one, achieved up to 99% accuracy, data distribution is uneven
        - Alicia & Eliot
            - Ran the dat file through XGBoost to see if it would run better than csv, getting stuck in an endless loop
            - Can create synthetic data to accommodate nan values in datasets
        - Zaryn
            - Running DCNN, training is taking a while
        - Franklin
            - Running KDD dataset in SVM, getting an endless loop
            - Added histogram in XGBoost algorithm
        - Ryan
            - Ran TON-IoT in XGBoost using binary classification, 14% anomalous in each capture, achieved up to 98% accuracy, max_depth was 100 so it may be overfitting data
    - Tasks:
        - Maria & Cassie
            - Run the five IoT23 files in SVM to compare results
            - Look into published papers for comparing results
        - Alicia & Eliot
            - Continue to run dat files through XGBoost and solve endless loop error
            - Find and run a balanced dataset in XGBoost to see results
        - Zaryn

- Continue working on DCNN with IoT23 dataset, start working on converting TON-IoT dataset to images
  - Franklin
    - Run a program in titan and TCNJ machine and compare CPU time
    - Continue working with SVM trying to solve endless loop
  - Ryan
    - Continue running the TON-IoT captures in XGBoost, try to stay below 10 on max_depth
  - General tasks:
    - Work on abstracts and continue revising them
      - Franklin is working on DCNN abstract
      - Maria is working on XGBoost abstract
- Adjournment at 5:10 p.m.
- Next meeting will be held on Thursday October 14 at 3:00 p.m. Via Dr.Farag's Zoom Room